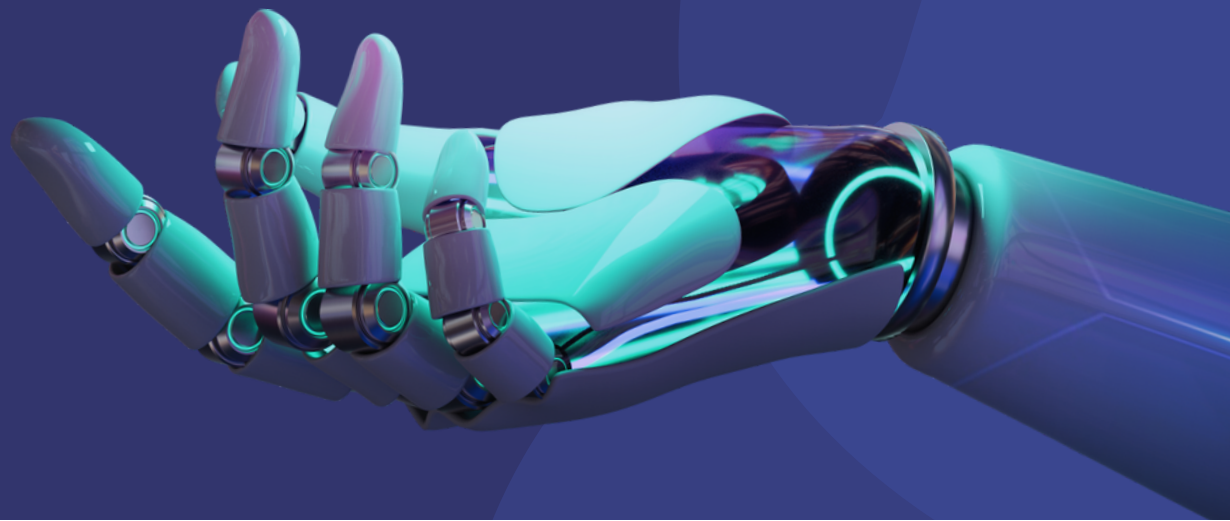
IMRC 2023

INTERNATIONAL MEDICAL STUDENT RESEARCH CONFERENCES

"Technology-enhanced Simulation and the New Frontier of Medical Research"

Abstract Book

December 9-10, 2023
Phramongkutklao College of Medicine
Bangkok, Thailand



International Medical Student Research Conference 2023

IMRC 2023

“"Technology-enhanced Simulation and the New Frontier of Medical Research"”

December 9 - 10, 2023

Phramongkutklao College of Medicine

Bangkok, Thailand

WELCOME MESSAGE

Dear honorable professors, judges and participants

I am grateful for the opportunity to be appointed by Phramongkutklao College of Medicine as an organizing chairperson and to address the International Medical Student Research Conference (IMRC2023) which highlights the prestigious Medical Student Research Competition. The theme of this year's conference is 'Technology-Enhanced Simulation and the New Frontier of Medical Research.' that represents the future of medicine which simulation technology will revolutionize patient care.

With rising engagement and committed attendance growing 57% from the previous year and 7 more country participants, this competition serves as a remarkable platform for undergraduate medical students across the world to showcase their research endeavors , engage in intellectual discourse, and enhance their communication skills. At the heart of this competition lies the coveted "Her Royal Highness Princess Maha Chakri Sirindhorn Trophy," a symbol of excellence and dedication of enhancing medical knowledge.

Besides, the conference is held under the collaboration of AMSA-Thailand, IFMSA-Thailand and SMST which advocate and facilitate cutting-edge and visionary pre-conference workshops and symposiums to represent Thai medical students whom we have placed our trust in becoming the future pillar of our healthcare system.

So, I as a chairperson am honored to welcome dear participants to our promising conference and wish you a joyful and memorable experience.

Panissara Amornjiraporn

Organizing Chairperson of IMRC2023

CONTENT

International Medical Student Research Conference 2022

ORGANIZING COMMITTEE

International Medical Student Research Conference 2023

Maj.Gen. Thamrongroj Temudom	**Chairman of the Organizing Committee**
	Dean of Phramongkutklao College of Medicine
Maj.Gen. Prof. Prajej Ruangkanchanasetr	**Director of Academic Affairs Division, PCM**
Col. Prof. Mathirut Mungthin	**Associate Dean for Administration, PCM**
Col. Prof. Ram Rangsin	**Associate Dean for Academic Affairs, PCM**
Col. Asst.Prof. Thammanoon Srisaarn	**Associate Director of Academic Affairs Division, PCM**
Col. Assoc.Prof. Phunlerd Piyaraj	**Conference Secretary**
Col. Assoc.Prof. Pasra Arnutti	
Col. Assoc.Prof. Wisit Kaewput	
Col. Asst.Prof. Anusara Vattanajun	
Col. Asst.Prof. Phutsapong Srisawat	
Col. Asst.Prof. Tanit Boonsiri	
Col. Asst.Prof. Chitrawina Mahagita	
Col. Manop Chaimati	
Col. Amnart Chaiprasert	
Col. Pajaree Thitthiwong	
Col. Kasom Bhanganada	
Col. Peetirat Hiranrusme	
Col. Chanchai Buawan	
Col. Pitipat Jamnarnwej	
Col. Lersluck Petchnorachat	
Lt.Col. Thanakrit Vichasilp	
Lt.Col. Kanista Luenam	
Maj. Sirachat Nitchaphanit	
Capt. Pisanupong Buddhadecharad	
Capt. Pimwan Thongdee	
Capt. Jirapha Sanit	
Capt.Pornpattra Koochumpoo	
Lt. Teeraboon Lertwanichwattana	
Lt. Sethapong Lertsakulbunlue	
Lt. Sittisak Somduangsri	
SubLt. Putt Narongdej	
SubLt. Dantham Kuwuttiwai	

STUDENT COMMITTEE

International Medical Student Research Conference 2023

Ms. Panissara	Amornjiraporn	**Organizing Chairperson**
Ms. Janejira	Sirisong	**Executive Assistant**
Ms. Isaree	Muangkroot	**Secretary of Internal Communication**
Ms. Varatchaya	Phutakumnerd	**Vice Chairperson of Program Affairs**
Ms. Manmard	Hirunratsameerod	**Secretary of Vice Chairperson of Program Affairs**
Mr. Tanapat	Sajapala	**Director of Academic Program**
Mr. That	Suvanakkul	**Head of Academic Competition**
Mr. Anop	Sartthaporn	**Head of Academic Workshop**
Mr. Lattawat	Taninzon	**Head of Publication**
Ms. Soifa	Meengern	**Head of Academic Reception**
Ms. Sansita	Tepnupa	**Liaison to Public Relation**
Mr. Wasin	Wakindecha	**Director of Non-academic Program**
Ms. Woramon	Phattanaphongvibool	**Head of Official Events**
Ms. Pacharaporn	Liangkobkij	**Head of Master of Ceremony**
Mr. Pakornkiate	Siriwongnapa	**Head of Palace Visit**
Ms. Palita	Palakawong	**Head of Welcoming Reception**
Ms. Unn	Aswaboonyalert	**Vice Chairperson of Administrative Affairs**
Ms. Panida	Imsamer	**Secretary of Vice Chairperson of Administrative Affairs**
Ms. Isaree	Muangkroot	**Director of Human Resources**
Ms. Kojchapan	Panjamasakul	**Director of Finance**
Ms. Thamonwan	Raksa	**Head of Treasurer**
Mr. Piyawat	Kongkachuichay	**Head of Sponsorship**
Ms. Kanyarak	Dechpreechachai	**Vice Chairperson of Support Affairs**
Mr. Jirapipat	Goysakul	**Secretary of Vice Chairperson of Support Affairs**
Ms. Panisa	Booncharoensombut	**Director of Food Logistics**
Ms. Piraya	Poommin	**Director of Venue**
Ms. Panisara	Kasemsomporn	**Director of Registration**
Mr. Pasin	Warunpantuluk	**Vice Chairperson of Media Affairs**
Mr. Warot	Sriratanatum	**Secretary of Vice Chairperson of Media Affairs**
Mr. Natdanai	Boonsongprasert	**Director of Graphic Design**
Mr. Tanatas	Teerawattanaprapa	**Director of Media**
Mr. Sasapin	Lairungruang	**Head of Photographer**
Ms. Chitlada	Chitprawat	**Head of Broadcasting**
Ms. Pitchakan	Chittrakhani	**Head of Virtual Program**
Mr. Atiwat	Sithisaksawat	**Director of Website**
Mr. Thanadol	Ratanasawasd	**Head of Website**
Mr. Parama	Chaipackdee	**Head of Database**
Ms. Achariya	Tringamwattana	**Head of Evaluation and Development**
Mr. Thammakan	Nampacharoen	**Vice Chairperson of External Affairs**
Mr. Thanakom	Intramarn	**Secretary of External Affairs**
Mr. Wachirathorn	Chavanond	**Liaison to External Department**
Mr. Thachapat	Lutigaviboon	**Director of Public Relation**
Mr. Kannapob	Sirichotiwat	**Head of Delegates coordinators**
Mr. Prime	Charoenpitakporn	**Head of Media Relations**
Mr. Nathan	Yinpraphan	**Liaison to Highschool students**

CONFERENCE PROGRAM

International Medical Student Research Conference 2023

Venue: Simulation Center of Military Medicine

Phramongkutklao College of Medicine, Bangkok, Thailand

Saturday, 9 December 2023

<table>
<tr><th>Time</th><th>Main auditorium, 4th floor, Phramongkutklao Vejavidya Building</th><th>Auditorium 1st Floor, Simulation Center for Military Medicine</th><th>Lecture hall 2nd Floor, Simulation Center for Military Medicine</th></tr>
<tr><td>07:30 – 08:30</td><td>Registration</td><td></td><td></td></tr>
<tr><td>08:30 – 08:45</td><td rowspan="2">Opening Ceremony</td><td rowspan="5">E-poster Presentation
(Systematic review and meta-analysis research)</td><td rowspan="5">E-poster Presentation
(Clinical and translational research)</td></tr>
<tr><td>08:45 - 09:00</td></tr>
<tr><td>09:00 – 09:15</td><td>Certificate of Appreciation for Participating Medical Schools</td></tr>
<tr><td>09:15 – 10:00</td><td>Opening Keynote</td></tr>
<tr><td>10:00 – 10:15</td><td></td></tr>
<tr><td>10:15 – 10:30</td><td colspan="2">Break</td></tr>
<tr><td>10:30 – 12:00</td><td></td><td>E-poster Presentation
(Systematic review and meta-analysis research)</td><td>E-poster Presentation
(Clinical and translational research)</td></tr>
<tr><td>12:00 – 12:45</td><td></td><td>Symposium I</td><td></td></tr>
<tr><td>12:45 – 13:00</td><td colspan="3">Break</td></tr>
</table>

CONFERENCE PROGRAM

International Medical Student Research Conference 2023

Venue: Simulation Center of Military Medicine

Phramongkutklao College of Medicine, Bangkok, Thailand

Saturday, 9 December 2023

Time	Main auditorium, 4th floor, Phramongkutklao Vejavidya Building	Auditorium 1st Floor, Simulation Center for Military Medicine	Lecture hall 2nd Floor, Simulation Center for Military Medicine
13:00 – 14:00	**Oral Presentation** (Medical education research)	**E-poster Presentation** (Systematic review and meta-analysis research)	**E-poster Presentation** (Clinical and translational research)
14:00 -14:15	Break		
14:15 – 16:15	**Oral and E-poster Presentation** (Medical education research)	**Oral Presentation** (Systematic review and meta-analysis research)	**Oral Presentation** (Clinical and translational research)
16:15 – 16:30	Break		
16:30 - 18:00	**E-poster Presentation** (Medical education research)	**Oral Presentation** (Systematic review and meta-analysis research)	**Oral Presentation** (Clinical and translational research)

Time	Phyathai Palace
17:15 – 18:00	**Phyathai Palace Visit**
18:00 – 20:30	**Welcoming Reception**

CONFERENCE PROGRAM

International Medical Student Research Conference 2023

Venue: Simulation Center of Military Medicine

Phramongkutklao College of Medicine, Bangkok, Thailand

Sunday, 10 December 2023

Time	Main auditorium, 4th floor, Phramongkutklao Vejavidya Building	Auditorium 1st Floor, Simulation Center for Military Medicine	Lecture hall 2nd Floor, Simulation Center for Military Medicine
07:30 – 08:00		Registration	
08:00 – 10:00		Oral Presentation (Basic science in medical research)	Oral Presentation (Public health and epidemiology research)
10:00 - 10:15		Break	
10:15 – 12:15		E-poster Presentation (Basic science in medical research)	E-poster Presentation (Public health and epidemiology)
12:15 – 13:15	Symposium II		
13:15 – 13:30	Break		
13:30 – 14:30	Final Round		
14:30 – 16:00	Award Announcement and Closing Ceremony		

CONFERENCE OVERVIEW

International Medical Student Research Conference 2023

Host: Phramongkutklao College of Medicine and Consortium of Thai Medical Schools

Theme: Technology-Enhanced Stimulation and the New Frontier of Medical Research

Venue: Phramongkutklao College of Medicine, Bangkok, Thailand

Official website: https://pcm-imrc.com/

Contact email: imrc@pcm.ac.th

Facebook page: https://www.facebook.com/PCMIMRC/

The International Medical Student Research Conference (IMRC) is an international conference for medical students organized by Phramongkutklao College of Medicine (PCM). The highlight of this conference is the medical student research competition. It constitutes a forum for undergraduate medical students to present their research, exchange ideas, and improve their communication skills while competing for the precious Her Royal Highness Princess Maha Chakri Sirindhorn's Trophy.

Goal

- To exchange their research ideas and results in a special forum • To meet and interaction with IMRC attendees to interchange ideas, gain new insights, and understand possible practical applications
- To enhance their communication and presentation skills
- To receive valued suggestion to students about their research and presentations from a panel of distinguished judges from the Consortium of Thai Medical Schools (COTMES)
- To recognize and reward outstanding student research

Research Competition

Abstract content is reviewed by the judge panels who evaluate the work based on its overall quality, originality, and relevance to the medical fields. Abstracts are not considered to be a prior publication of the work for the purposes of a journal publication. Abstract selection will be evaluated based on:

- Quality of work
- Novelty of approach
- Significance of the contribution to the medical field
- Clarity of written presentation
- Quality of visual and oral presentation

Confidentiality of submissions is maintained during the whole review process. All rejected submissions are kept confidential in perpetuity. All submitted materials for the accepted submissions are kept confidential until the start of the conference. The launch of the digital conference abstracts will be released on the website before the conference including only the title and author information. Submissions should not contain sensitive, private, or proprietary information that cannot be disclosed at public

In IMRC 2023, there are 2 categories of research competition which are **oral presentation** and **E-poster presentation**. Each of them is divided into 5 tracks including:

1. Basic science in medicine research
2. Public health and epidemiology research
3. Clinical and translational research
4. Medical education research
5. Systematic Review and Meta-Analysis Research

General Regulation

1. All submissions must be in English.
2. All areas of research are encouraged to participate, regardless of whether they align with the conference theme "Technology-enhanced lation and the New Frontier of Medical Research."
3. Documents with any form of plagiarism are immediately disqualified.
4. Deadline for submission is to be strictly followed. Any form of act which does not follow the deadline is disqualified.
5. All decisions made by judge panels are final.
6. Corresponding authors from multiple institutes are accepted. However, only one presenter can register under the conclusion among authors.
7. For group research, a presenting speaker shall be designated as a primary author for competition purposes.
8. The academic committee will recognize the latest submission before the deadline.

Study Guideline

1. Studies should present a significant new contribution in the biomedical, clinical, or public health fields.
2. .The same protocol cannot be submitted for more than one competition.
3. Ethics approval of studies dealing with human data or animal subjects is required.
4. All research topics from undergraduate students are welcome, which are not limited to the theme of the conference.

Selection Process

1. Abstracts will be reviewed by three medical health professional reviewers.
2. For abstracts that are not accepted for oral presentation, reconsideration for E-poster presentation is conducted automatically.
3. IMRC announces accepted abstracts in October 15th, 2023 via registered email.

Abstract Submission

1. The presenter of the research must be a current undergraduate student attending a medical school or a former medical student who recently graduated in 2023 and the submitted research study was conducted and completed before graduation.
2. .Submission deadline: September 15th, 2023, GMT +7. No more changes are allowed to be made to the abstract after the closing submission.
3. Results announcement: October 15th, 2023, GMT +7
4. Abstract format required for abstract submission is listed below:
    a. Title of the research
    b. Authors and Institution/organization
    c. Abstract Content
        i. Background/Introduction
        ii. Objective
        iii. Method
        iv. Results
        v. Discussion/Conclusion
        vi. Keywords (at least 3 words)
        vii. Word limit is 350 words
    d. Language: ONLY English, all local words or phrases used should be provided with English translation.

Oral Presentation

1. .Presentation file format: PowerPoint Presentation (.ppt or .pptx)
2. Presentation session will be assigned by track of oral presentation. Time and presentation sequence are sent to registered email. Please prepare yourself before your session begins about 10 minutes.
3. For an onsite presentation, delegates can come to check your presentation file about 45-60 minutes before the session begins.
4. Presentation time: 10 minutes (7 minutes for presentation, 3 minutes for questions and answers)
5. Warning sound: 2 times (At minute 5th and minute 7th)
6. Computer and LCD projector are available for onsite presenters.
7. For an online presentation, attending online preparation workshops and the readiness of online devices are compulsory. (The detailed schedule will be announced later on an official Facebook page, the website, and your registered email.)

Final Presentation is for the oral presentation competition to find out best of all oral scientific presentation; therefore, the winner of each track will be qualified to participate in the final presentation. For this round, the record from your presentation is played before questions and answers begins for 1- 2 minutes.

E-poster Presentation

1. Participants have to submit their presentation material(s) on the website before November 30th, 2023, GMT+7.
2. Poster file format: Portrait poster
   Size: 90 x 120 cm
   Presentation file format: PDF AND PNG
3. For online delegates, attending online preparation workshops and the readiness of online devices are compulsory.
4. Presentation session will be assigned by track of E-poster presentation. Time and presentation sequence are sent to registered email. Please prepare yourself before your session begins about 10 minutes.
5. For an onsite presentation, delegate can come to check your poster file about 30-45 minutes before the competition begins.
6. Presentation time: 8 minutes (5 minutes for presentation, 3 minutes for questions and answers)
7. Warning sound: 1 time (at the 4th minute)
8. All delegates' posters will be displayed online or onsite
9. For an online presentation, the presentation will be conducted on an LCD projector screen.

Popular Vote Competition

In the Popular Vote Competition, **all delegates in Oral and E-poster presentation also take part in this competition.** The posters will be posted on our official Facebook page. The delegate's poster which has the highest score is a winner. The final scores are calculated by the addition of votes from online following the rules as follows:

1. Each single Facebook like and all other emoticon reactions in each posted poster will be counted as 1 point.
2. Each single Facebook share in each posted poster will be counted as 2 points.
3. A repeated Facebook share from the same account will not be included.
4. Only accepted abstracts are eligible for the Popular Vote Competition.
5. Participants are to submit their posters on the website

before November 31st, 2023, GMT+7.

Registration

The conference is held as a hybrid conference; Onsite and Online. Onsite registration will also receive access to the Online conference; hence, refunds are unavailable

Registration Fee		Price per Person
Onsite	Early bird registration (Until October 31st, 2023)	2,500 THB (90 USD)
	Regular registration (Until November 15th, 2023)	3,000 THB (120 USD)
Online	Early bird registration (Until October 31st, 2023)	1,500 THB (60 USD)
	Regular registration (Until November 15th, 2023)	2,000 THB (80 USD)

- If you have any questions about registration, please feel free to contact us via following 3 platforms:
  Official website www.pcm-imrc.com
- Contact email imrc@pcm.ac.th
- Facebook page https://www.facebook.com/PCMIMRC/

AWARDS

International Medical Student Research Conference 2023

Her royal Highness Princess Maha Chakri Sirindhorn's Trophy

and certificate of achievement is awarded for the best oral scientific presentation

	Oral Presentation	E-poster Presentation
Winner	IMRC's trophy with scholarship of 10,000 THB	IMRC's trophy with scholarship of 5,000 THB
1st Runner up	IMRC's trophy with scholarship of 7,000 THB	IMRC's trophy with scholarship of 4,000 THB
2nd Runner up	IMRC's trophy with scholarship of 5,000 THB	IMRC's trophy with scholarship of 3,000 THB
Popular Vote	IMRC's trophy with scholarship of 4,000 THB	IMRC's trophy with scholarship of 3,000 THB

- Every academic work will receive a certificate of achievement according to the score criteria listed below:
  - Gold (more than 80%)
  - Silver (70%-79%)
  - Bronze (60%-69%)


IMRC

JUDGE PANELS

International Medical Student Research Conference 2023

Abstract selection

Asst.Prof. Alisara Wongsuttilert, MD

Faculty of Medicine, Burapha University

Col. Prof. Mathirut Mungthin, MD, PhD

Phramongkutklao College of Medicine

Col. Asst.Prof. Panadda Hatthachote, PhD

Phramongkutklao College of Medicine

Honorable judge

Prof. Thossart Harnroongroi, MD

Faculty of Medicine, Bangkokthonburi University

Prof. Jitti Hanprasertpong, MD

Faculty of Medicine, Navamindradhiraj University

Assoc.Prof. Chantacha Sitticharoon, MD, PhD

Faculty of Medicine Siriraj Hospital, Mahidol University

Assoc.Prof. Nopporn Apiwattanakul, MD, PhD

Faculty of Medicine Ramathibodi Hospital, Mahidol University

Assoc.Prof. Thanyaluck Phitak, PhD

Faculty of Medicine, Chiang Mai University

Assoc.Prof. Pawana Panomket, PhD

College of Medicine and Public Health, Ubon Ratchathani University

Assoc.Prof. Maneerat Chayanupatkul, MD

Faculty of Medicine, Chulalongkorn University

Assoc.Prof. Boonlert Mitmuang, MD

Chumphon Khet Udomsak Hospital

Assoc.Prof. Prapaporn Suprasert, MD

Faculty of Medicine, Chiang Mai University

Assoc.Prof. Araya Satdhabudha, MD

Faculty of Medicine, Thammasat University

Asst.Prof. Watcharapol Poonual, MD, PhD

Medical Education Center Uttaradit Hospital

JUDGE PANELS

International Medical Student Research Conference 2023

Honorable judge

Asst.Prof. Jutarop Phetcharaburanin, PhD, DIC, AMRSC
Faculty of Medicine, Khon kaen University

Asst.Prof. Kanyika Chamniprasas, MD, MS (Biomed.)
Faculty of Medicine, Prince of Songkla University

Asst.Prof. Nonthapan Phasuk, MD
School of Medicine Walailak University

Asst.Prof. Kanthika Wasinpongwanich
Bumrungrad Hospital

Asst.Prof. Thanapon Chobpenthai, MD
Princess Srisavangavadhana College of Medicine, Chulabhorn Royal Academy

Sorawat Sangkaew, MD, PhD
Medical Education Center Hatyai Hospital

Chayanee Setthapramote, DVM, PhD
Faculty of Medicine Vajira Hospital, Navamindradhiraj University

Anussara Kamnate, PhD
Faculty of Medicine, Prince of Naradhiwas University

Sarawut Lapmanee, PhD
Faculty of Medicine, Siam University

Tidarat Thodthankhun, MD
Pranangklao Hospital

Anawat sermswan, MD
Faculty of Medicine KMITL

Pimpet Sukumalpaiboon, MD
Office of the Permanent Secretary Ministry of Public Health

Kongtush Choovongkomol, MD
Maharat Nakhon Ratchasima Hospital

Pornsuda Krittigamas, MD
Medical Education Center Nakornping Hospital

Kanokrot Kovjiriyapan, MD
Medical Education Center Phayao Hospital

JUDGE PANELS

International Medical Student Research Conference 2023

Honorable judge

Poom Chompoosri, MD

School of Medicine, Mae Fah Luang University

Prakarn Tattiyakul, MD

Faculty of Medicine, Burapha University

Chawalit Lakdee, MD

Buddhachinaraj Phitsanulok Hospital

Damrong Waealee, MD

Yala Hospital

Salinla Penpim, MD

College of Medicine and Public Health, Ubon Ratchathani University

Basic Science Research

Assoc.Prof. Kanyanatt Kanokwiroon, PhD

Faculty of Medicine, Prince of Songkla University

Lt.Col. Asst. Prof. Wittawat Chantkran, MD, PhD

Phramongkutklao College of Medicine

Col. Asst.Prof. Tanit Boonsiri, PhD

Phramongkutklao College of Medicine

Asst.Prof. Kasiphak Kaikaew, MD, PhD

Faculty of Medicine, Prince of Songkla University

Asst.Prof. Bhoom Suktitipat, MD, PhD

Faculty of Medicine, Siriraj Hospital, Mahidol University

Pundit Asavaritikrai, MD, PhD

Suranaree University of Technology

Pimonrat Ketsawatsomkron, PhD

Faculty of Medicine Ramathibodi Hospital, Mahidol University

JUDGE PANELS

International Medical Student Research Conference 2023

Public Health and Epidemiology Research

Col. Prof. Ram Rangsin, MD, DrPH
Phramongkutklao College of Medicine

Asst.Prof. Suthee Rattanamongkolgul, MD, MPH, PhD, FHEA
Faculty of Medicine, Srinakharinwirot University

Asst.Prof. Ramorn Yampratoom, MD
Faculty of Medicine, Burapha University

Prof. Chutima Sirikulchayanonta, MD, MPHM
College of Medicine, Rangsit University

Wiwat Chiewsilp, MD
Faculty of Medicine, Mae Fah Luang University

Clinical and Translational Research

Col. Prof. Piya Rujkijyanont, MD
Phramongkutklao College of Medicine

Col. Prof. Chanchai Traivaree, MD
Phramongkutklao College of Medicine

Lt. Col. Assoc. Prof. Sakkarin Chirapongsathorn MD, MSc
Phramongkutklao College of Medicine.

Lt. Col. Asst. Prof. Picha Suwannahitatorn, MD, PhD
Phramongkutklao College of Medicine

Asst.Prof. Alisara Wongsuttilert, MD
Faculty of Medicine, Burapha University

Win Techakehakij, MD, PhD,
Lampang Hospital

Chavanant Sumanasrethakul, MD, MSc
Faculty of Medicine Vajira Hospital, Navamindradhiraj University

Rapeephan R.Maude, MD, MSc, DTM&H
Faculty of Medicine Ramathibodi Hospital

JUDGE PANELS

International Medical Student Research Conference 2023

Medical Education

Col. Asst.Prof. Chitrawina Mahagita, PhD, MSc(HSE)
Phramongkutklao College of Medicine

Maj. Warangkana Thammasanya, MD
Phramongkutklao College of Medicine

Achara Wuttiprasittipol, MD, FHEA
Panyananthaphikkhu Chonprathan Medical Center, Srinakharinwirot University

Kritchaya Ritruechai, MD, MMed
Princess Srisavangavadhana College of Medicine, Chulabhorn Royal Academy

Tipaporn Thongmak, MD, MMed
Hatyai Hospital

Systematic Review Research

Col. Assoc.Prof. Nithipun Suksumek, MD
Phramongkutklao College of Medicine

Col. Assoc.Prof. Wisit Kaewput, MD, MFRCPT
Phramongkutklao College of Medicine

Lt. Col. Asst.Prof. Kanlaya Jongcherdchootrakul, MD, PhD
Phramongkutklao College of Medicine

Assoc.Prof. Thunyarat Anothaisintawee, MD, PhD
Faculty of Medicine, Ramathibodi Hospital, Mahidol University

Assoc.Prof. Weerapat Owattanapanich, MD
Faculty of Medicine Siriraj Hospital, Mahidol University

Asst.Prof. Pawin Numthavaj, MD, PhD
Faculty of Medicine Ramathibodi Hospital, Mahidol University

Asst.Prof. Busaba Supawattanabodee, PhD
Faculty of Medicine Vajira Hospital, Navamindradhiraj University

Asst.Prof. Piyarat Suntarattiwong MD, MPH
Queen Sirikit National Institute of Child Health

KEYNOTE AND PANELIST SPEAKERS

International Medical Student Research Conference 2023

Assoc.Prof. Jannet Lee-Jayaram, MD CHSE

Associate Professor, Pediatrics, University of Hawaii, John A Burns School of Medicine

Education

- Pediatric Emergency Medicine Fellow, St. Christopher's Hospital for Children, Philadelphia, PA (2005-2008)
- Pediatric Resident, New York Presbyterian Hospital Cornell Weill Medical Center, New York, NY (2002-2005)
- MD, State University New York Stony Brook School of Medicine, Stony Brook, NY (1998-2002)

Selected Scientific Peer-Reviewed Journal Publications

- Jujo S, Sakka BI, Lee-Jayaram J, Kataoka A, Izumo M, Kusunose K, Nakahira A, Oikawa S, Kataoka Y, Berg BW. Medical student medium-term skill retention following point-of-care ultrasound training based on the American Society of Echocardiography curriculum framework. Cardiovasc Ultrasound 20, 26 (2022).
- Lee-Jayaram J, Park HS, Young JK, Seo JS, Oh, SH, Rhee, J, Berg BW. Development of the Korean Objective Structured Assessment of Debriefing (K-OSAD). Journal of Healthcare Simulation (Korea) ISSN 2287-8262. 2022;6-1:1-7.
- Lum E, Abey K, Sommer-Candelario S, Delossantos S, Choi S, Lee-Jayaram J, Emergency Pediatric Intubations in an Urban Children's Hospital Before and After Just-in-Time Training for Video Laryngoscopy, Cureus. 2021 Nov 25;13(11): e19892.
- Jujo S, Lee-Jayaram J, Nakahira A, Sakka B, Kataoka A, Izumo M, Kusunose K, Athinartrattanapong N, Berg, BW, The American Society of Echocardiography cardiac point-of-care ultrasound curriculum for pre-clinical medical students Pilot and Feasibility Studies 2021. 7(1):175.
- Oikawa S, Berg BW, Lee-Jayaram J, An international, culturally adaptive faculty development fellowship for simulation educators, Medical Teacher 2021. 43(8): 914-915
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Current working posts

- Instructor "iSIM-J: Improving Simulation Instructional Methods" Japan
- Instructor "FunSim-J: Fundamental Simulation Instructional Methods" Japan

KEYNOTE AND PANELIST SPEAKERS

International Medical Student Research Conference 2023

Prof. Polpun Boonmak, MD

Strategic Initiative for Developing Capacity in Ethical Review (SIDCER) Recognition Special Programme for Research and Program surveyor, World Health Organization under the Training in Tropical Diseases (WHO-TDR)

Education

- Doctor of Medicine - Khon Kaen University, Thailand (1997)
- Graduate Diploma in Clinical Medical Sciences (Anesthesiology) - Khon Kaen University, Thailand (1999)
- Dip. Thai Board of Anesthesiology - Medical Council of Thailand (2001)
- Dip. Thai Board of Family Medicine - Medical Council of Thailand (2003)
- International Short Course Training in Research Methodology & Biostatistics - Faculty of Medicine, Khon Kaen University, Thailand (2004)
- WISER Visiting Scholars Program: Preceptorship, The Winter Institute for Simulation, Education, and Research (WISER) Institute - University of Pittsburgh, USA (2013)
- Health system management - College of Graduate Study in Management, Khon Kaen University (2014)
- SIDCER FERCAP- Global Fellowship - Khon Kaen University; Oslo University, Norway; Nagasaki University, Japan; Faculty of Medicine, Chulalongkorn University; Faculty of Medicine Siriraj Hospital, Mahidol University (2023)

Current working post

- Strategic Initiative for Developing Capacity in Ethical Review (SIDCER) Recognition Special Programme for Research and Program surveyor, World Health Organization under the Training in Tropical Diseases (WHO-TDR)
- Secretary, the Human Research Ethics Committee panel 1, Khon Kaen University
- Chairman of the Thailand Society of Simulation in Healthcare
- Alternate member, the Human Research Ethics Committee panel 1, Khon Kaen University
- Professor, Faculty of Medicine, Khon Kaen University
- Co-instructor of the training course in the subspecialty of accident surgery Royal College of Surgeons, Medical Council of Thailand
- Member of the Trauma Association of Thailand
- Advanced trauma life support instructor, American College of Surgeons
- Member of the Royal College of Family Medicine of Thailand
- Member of the Royal College of Anesthesiology of Thailand
- Member of Medical Council of Thailand

KEYNOTE AND PANELIST SPEAKERS

International Medical Student Research Conference 2023

Col. Panithan Kwangwaropas, MD

Director of Simulation Center for Military Medicine, Phramongkutklao College of Medicine

Education

- Doctor of Medicine, Phramongkutklao College of Medicine (2003)
- Diplomat of Thai Board of Emergency Medicine (2007)
- Certificate of Flight Surgeon, Institute of Aviation Medicine, Royal Thai Air Force (2011)
- Visiting Scholar Fellowship of Simulation Based Education, SimTiki Simulation Center, Telehealth Research Institute, John A Burns School of Medicine, University of Hawaii (2016)

Current working posts

- Director of Simulation Center for Military Medicine, Phramongkutklao College of Medicine
- Committee of Thai Simulation Society in Healthcare (Thai SSH)
- Instructor of ACLS Course, American Heart Association (AHA)
- Instructor of ACLS Course, Thai Resuscitation Council, The Heart Association of Thailand
- Director of Emergency Medicine Course for Medical Student, Phramongkutklao College of Medicine
- Staff of Trauma and Emergency Department, Phramongkutklao Hospital

Previous working posts

- 2003 – 2004: Intern, Jakkrapong fort Hospital
- 2005 – 2007: Emergency Medicine Residency Training, Phramongkutklao Hospital
- 2007 – 2008: Staff of Emergency Department, Surasri Fort Hospital

AWARDS

- 2018: Certificate of Medical Educators Excellence in Teaching Award for Medical Students, Phramongkutklao College of Medicine

RESEARCH

- 2006: The parameter study for predicting prognosis outcome in the acute asthmatic attack patients at Phramongkutklao Hospital Emergency Department
- 2012: Efficiency of chest compression during cardiopulmonary resuscitation practice of healthcare provider of trauma and emergency department Phramongkutklao Hospital

KEYNOTE AND PANELIST SPEAKERS

International Medical Student Research Conference 2023

Dr. Poom Tritrakarn, MD

Course director and instructor of Simtech program (Sim technician training program)

Education

- MD: Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand (1994-2000)
- Internship: Nakonsrithamarat Hospital, Nakonsrithamarat, Thailand (2000-2001)
- Anesthesia Residency training: Department of anesthesiology, Siriraj Hospital, Mahidol University (2001-2004)
- Graduate Diploma in Clinical science (2001)
- Thai board of Anesthesiology (2004)
- Fellow of the Royal College of Anesthesiologists of Thailand(FRCAT) (2006)

  Simtiki simulation center's fellow and Fellow of Office of medical education, Johns A. Burn School of medicine, Hawaii (2013)
- Certified Healthcare Simulation Educator (CHSE) (2014-2017)

  Master degree in Health Science Education (2020)

Current working posts

- Course director and instructor of Simtech program (Sim technician training program)
- Founding member and Committee of Thai-SSH (Thai society for simulation in healthcare)
- Committee & staff of SIMSET (Siriraj Medical Simulation Center for Education and Training)
- Course director and instructor in multiple SimCASE programs (SBME train-the-trainer program)
- Attending staff & Instructor: Department of Anesthesiology, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand.

Publications

- Medical school hotline: Can we use simulation to teach medical ethics? Hawaii J Med Public Health 2014 Aug;73(8):262-4
- How to do effective debriefing during simulation-based education for healthcare, Siriraj Medical Bulletin; Vol. 10 No. 3 (2017): September - December
- {Thesis} Outcome of The Faculty Development Workshop in Simulation-based Medical Education using Kirkpatrick's Model. The 20th Thai Medical Education Conference: Educational disruption in medical schools

KEYNOTE AND PANELIST SPEAKERS

International Medical Student Research Conference 2023

Mr. Suphasin Supha

Head of Research Support division, SMST

Education

- 5th year medical student, Faculty of Medicine Vajira hospital, Navamindradhiraj University

Research Experience

- 2020-2022 : President of Academic and Research Club, Navamindradhiraj University
- 2023- now : Head of Academic division of Student Association of Faculty of medicine,Vajira Hospital, Navamindradhiraj University
- 2023- now : Head of Research Support division, SMST

KEYNOTE AND PANELIST SPEAKERS

International Medical Student Research Conference 2023

Mr. Piwat Suppawittaya

Liaison officer for Medical Sciences and Research Issues (LSR), IFMSA-Thailand (symposium)

Work Experience

- 2023: Short Communication at AMEE Conference, Glasgow, Scotland
- 2023: Vice President of Research Unit of Ramathobodi Medical Student Council (RAMSC)
- 2022: Secretary of External Affairs of IFMSA Ramathibodi
- 2022: Committee Members in Internal Affairs of Ramathobodi Medical Student Council (RAMSC)
- 2022: Co-Head at Rama Roadshow at Bangkok Christian College

Published Research

- 2021: The Comparison of Chunking Methods to Enhance the Cognitive Capacity of Short-term Memory to Retain Textual Information among High School Students
- 2021: Psychological Adaptation after the COVID-19 Pandemic through the Lens of Evolutionary Biology
- 2020: Effects of social distancing, self-quarantine and self-isolation during the COVID-19 pandemic on people's well-being, and how to cope with it
- 2020: THE EFFECTIVENESS OF CHUNKING METHODS FOR ENHANCING SHORT-TERM MEMORY OF TEXTUAL INFORMATION

Research Competition Achievements

- 2021: 3rd International Conference on Teaching and Science Education
- 2020: IAI Virtual Conference
- 2019: Bronze Medal at the 47th International Exhibition of Inventions Geneva, Geneva, Switzerland
- 2019: Honorable Mention at GENIUS Olympiad, New York, USA
- 2019: Thailand's Representative at Intel International Science and Engineering Fair, California, USA 2019: First Prize Winner at The Twenty-First Young Scientist Competition, Thailand
- 2018: Gold Prize & Diploma from National University of Science and Technology MISiS at Seoul International Invention Fair
- 2018: First Prize Winner at GLOBE Student Research Competition, Thailand
- 2018: Thailand's Representative at Enjoy Science: Young Makers Contest 2, Thailand
- 2018: Gold Medal at Thailand's Inventors Day Contest, Thailand
- 2018: Thailand's Representative at International Science Camp in Okayama
- 2018: Thailand's Representative at GLOBE Taiwan Science Fair, Taiwan
- 2018: Thailand's Representative at Makers Faire, Bay Area, California, USA
- 2018: Thailand's Representative at GLOBE Student Exchange Program, Thailand

KEYNOTE AND PANELIST SPEAKERS

International Medical Student Research Conference 2023

Ms. Yada Siripaopradit

Director of Research (DoR) AMSA Thailand

Research Experiences

- Second Runner-Up for Scientific Poster Competition at MDCU Congress 2023 with the topic "Unlocking the Potential of the Gut-Brain Axis for Alzheimer's Disease Treatment through Probiotic Interventions: A Systematic Review"
- Finalist of Scientific Paper Competition at Asian Medical Students' Conference (AMSC) 2023 in Taipei, Taiwan, with the topic "Unlocking the Potential of the Gut-Brain Axis for Alzheimer's Disease Treatment through Probiotic Interventions: A Systematic Review"

Startups and Innovations Experiences

- Co-Founder & Chief Marketing Officer (CMO) of *Trawell*
- TrueLab Hackathon x Mordee Competition Top 15 Teams
- Best Business Solution in Pulse-in-your-pocket: Battle of the Innovators Competition
- Completion of Young Startup Entrepreneur Program (YSEP) 2022

Awards, honors, and Recognition

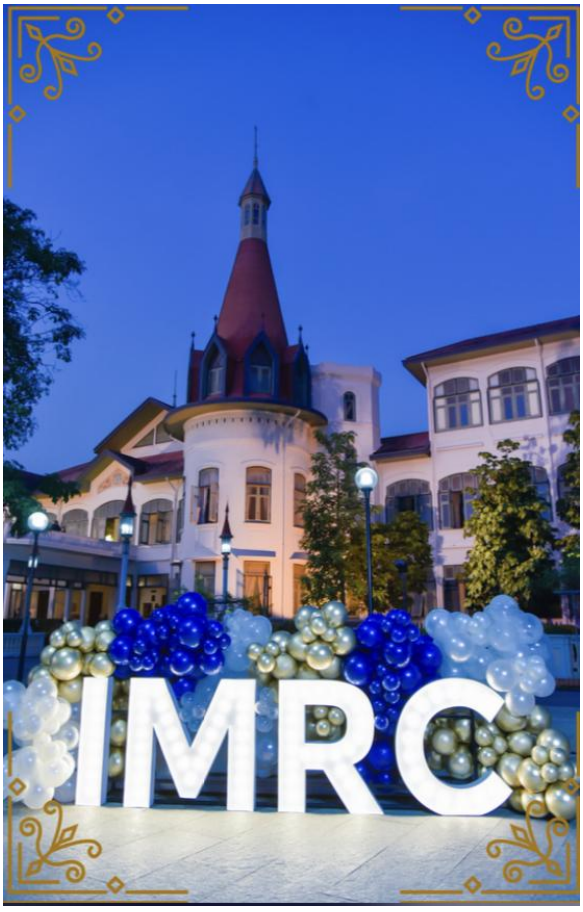
- Pink Diamond Scholarship
- Silver Medalist at the 15th Thailand Chemistry Olympiad (TChO)
- Finalist of Thai National Team Selection for International Chemistry Olympiad (IChO)
- Debate
    - 3rd best adjudicator in the 1st Thailand Online Debate Championship 2020
    - Participated in the 12th and 14th European Union in Thailand National Intervarsity Debate Championship as an adjudicator and in the 13th as a debater
    - Participated in Thailand Debate Open 2019 as an adjudicator

Work & Academic Experiences

- Activity staff of Chula Tech Startup 2022/2023
    - Staff of Startup 101 Workshop
    - Hosting Committee of Start It Now 2022
    - Hosting Committee of Young Startup Entrepreneur Program (YSEP) 2023
- Delegate of Asian Medical Students' Exchange Program (AMSEP) Australia x Thailand 2023
- Coordinator of MDCU Research Club
- Hosting Committee of Innovation Lab Tour
- MDCU Research Symposium Prep 2022
    - Was an MC for the oral presentation round
    - Was a contact person for the judges in the oral presentation round
- Publications and Promotions (PnP) of AMSA Thailand 2021/2022
    - Worked as a content creator
- Hosting Committee of Virtual Thailand x India AMSEP 2022


Medical Research in
Metaverse Era


"Leveraging Research Competencies
in The Metaverse Era"
Discussion


IMRC

ABSTRACT : ORAL PRESENTATION

Basic Science in Medical Research

Public Health and Epidemiology Research

Clinical and Translational Research

Medical Education Research

Systematic Review and Meta-Analysis Research

Basic Science in Medical Research

Abstract : OR-BS004

Comparison of Efficacy between Cannabinoid Lipid Nanoparticles and Acetylcholinesterase Inhibitors in Improving Cgnitive Impairment and Modulating Acetylcholinesterase Protein Levels in an Alzheimer's Disease Rat Model with Oral Aluminum Chloride Inducti.

Pasakorn Soonthrontam[1], Sarawut Lapmanee[1], Siriwan Sriwong[2], Katawut Namdee[3]

[1] School of Medicine, Siam University, Phasi Charoen, Bangkok, Thailand

[2] Laboratory Animal Center, Thammasat University, Pathumthani, Pathumthani, Thailand

[3]National Nanotechnology Centre (NANOTEC), National Science and Technology Development Agency, Pathumthani, Pathumthani, Thailand

Background: Alzheimer's disease (AD) is a debilitating neurodegenerative disorder characterized by progressive cognitive decline. The current pharmacological treatment for AD primarily involves acetylcholinesterase inhibitors (AChEIs), aiming to enhance cholinergic neurotransmission. However, emerging research explores alternative therapeutic strategies, i.e., cannabinoid (CBD)-based treatments, with neuroprotective and anti-inflammatory properties.

Objectives: The present study determined the comparative efficacy of cannabinoid lipid nanoparticles (CLNs) and traditional AChEIs in ameliorating cognitive impairment and modulating acetylcholinesterase (AChE) protein levels in an AD rat model induced by oral aluminum chloride ($AlCl_3$).

Methods: AD was induced in Male Wistar rats via oral administration of 10 mg/kg $AlCl_3$ for 6 weeks. Subsequently, the rats were divided into three groups: a control group receiving vehicle (5 mL/kg normal saline), an AChEI-treated group 10 mg/mL donepezil 10 mg/mL, and a CLN-treated group. Cognitive function was assessed through a novel object recognition (NOR) and Proteins were analyzed by Western blotting.

Results: The results demonstrated that both AChEI and CLN treatments significantly improved cognitive function compared to the control group, emphasizing the enhancement in NOR. In addition, CLN treatment led to a significant reduction in AChE protein levels compared to control group, suggesting a direct modulation of AChE expression by CLNs in rats.

Discussion & Conclusion: These findings highlight the potential of CLNs as a promising therapeutic intervention for alleviating cognitive impairment and modulating AChE protein levels in AD and can be a novel approach that combines neuroprotection and anti-inflammatory properties with enhanced cognitive benefits. Further investigation is warranted to elucidate the underlying mechanisms of AChE modulation by CLNs.

Keywords: alzheimer’s disease, cannabinoid lipid nanoparticles, acetylcholinesterase inhibitors, acetylcholinesterase protein levels

Abstract : OR-BS006

Sirt3 Promotes Antiviral Immunity by Inhibiting Glycolysis and Maintaining Mitochondria Aerobic Respiration.

Chen Jiajun Jiajun Chen, Xu Zhihao Zhihao Xu, Qin Dexiang Dexiang Qin,

Li Yiming Yiming Li, Jiang Qingjian Qingjian Jiang

Naval Medical University (China), Shanghai, Shanghai, China

Background: Host recognizes viral nucleic acids via pathogen recognizing receptors (PRRs) to induce antiviral innate immunity, while viruses hijack the metabolism of the host to escape or inhibit antiviral innate immunity. SARS-Cov-2 induces aerobic glycolysis to inhibit antiviral innate immunity, in which mechanism remains to be elusive.

Objectives: This project will explore the function and mechanism of virus-induced immune escape by regulating metabolism by analyzing the transcriptome data of the peripheral blood mononuclear cells from SARS-Cov-2 infected patients, verifying the function and mechanism of Sirt3 on antiviral innate immunity.

Methods: Firstly, we infect macrophages or dendritic cells with VSV, SEV, HSV, influenza virus to investigate the effects of cell by Sirt3 deficiency, knockdown expression, transient or stable overexpression of Sirt3 and then detecting type I interferon, inflammatory cytokine production and cytostatic virus replication. Secondly, after infection with different virus models in vivo, the effect of Sirt3 deficiency on antiviral type I interferon production viral replication, inflammatory injury, glycolysis and TCA circulation disorders were observed. Finally, through molecular biology mechanism research, the protein stability and post-translational modification of Sirt3 and the main sites and corresponding molecules were explored to illustrate that virus infection hijack Sirt3 to escape antiviral innate immunity by regulating glycolysis and mitochondrial function.

Results: We first found that expression of Sirt3 was positively related with glycolytic kinases (PKM2, LDHA and HIF1α) and inflammatory cytokines in critical-ill COVID-19 patients, while not in mild patients. Sirt3 expression was decreased upon virus infection. Further screening research found that *Sirt3* knocking-down or deficiency significantly decreased IFN-β production and increased viral replication *in vivo* and *in vitro*, with increased glycolysis and decreased tricarboxylic acid (TCA) cycle. Sirt3 overexpression significantly increased IFN-β production and inhibited viral replication *in vivo* and *in vitro*, with decreased glycolysis and increased tricarboxylic acid (TCA) cycle.

Discussion & Conclusion: Together, these results reveal that the malfunction of Sirt3 may be the hijacking target by virus to escape antiviral innate immunity. Sirt3-mediated inhibition of glycolysis is required to induce efficient antiviral responses, which outlines that targeting the expression or activation may be a promising supplementary therapy strategy for viral infection.

Keywords: antiviral innate immunity, glucose metabolism, glycolysis, Sirt3

Abstract : OR-BS007

Gut-Derived Tryptophan Metabolite Kynurenic Acid Attenuates Hepatic Fibrogenesis by Regulating Crosstalk between Hepatic Stellate Cell and Macrophage via Gut-Liver Axis.

Yarong Hao, Yong Lin

Naval medical university, Shanghai, Shanghai, China

Background: Gut microbiota and gut-derived metabolites play an important regulatory role in hepatic fibrogenesis through the gut-liver axis. Hepatic stellate cell (HSC) and liver macrophage are considered as the central mediators in pro-fibrogenic response and the essential targets for anti-liver fibrogenesis. Kynurenic acid (KYNA) is one of the predominant gut-derived tryptophan metabolites in hepatobiliary diseases, however, the effect and mechanism of gut-derived KYNA on hepatic fibrogenesis and the activation of HSC and macrophage remain unclear.

Objectives: Therefore, the current study is to explore the association of gut-derived KYNA levels with the hepatic fibrogenesis, and further demonstrate the regulatory mechanism of enterogenic KYNA on liver fibrosis by modulating the intricate interplay between liver macrophage and HSC.

Methods: Liquid chromatography/ mass spectrometry (LC/MS) analysis was applied to analyze KYNA levels in cirrhotic patients and fibrotic mice, and KYNA levels in serum of portal vein and peripheral blood of liver fibrosis mice were detected by ELISA. Histological and immunohistological examinations were carried out to evaluate the therapeutic effect of enterogenic KYNA on liver fibrosis. RT-PCR and immunoblotting assay were used to examine profibrotic genes expression in the liver tissue and HSC stimulated by liver macrophage after KYNA administration.

Results: Remarkable alteration of tryptophan metabolism pathway from liver cirrhosis patients were observed by metagenomic sequencing and identification of KEGG categories. Importantly, lower levels of KYNA in the gut of fibrotic mice were identified by LC/MS analysis. Accordingly, reduced levels of KYNA were represented in serum of portal vein and peripheral blood from the different experimental hepatic fibrosis models. KYNA could significantly alleviate liver fibrosis, as well as the expression of profibrotic gene including α smooth muscle actin (α-SMA) and collagen type I alpha 1 chain (col1α1). The results *in vitro* also verified that KYNA could promote the differentiation of pro-inflammatory macrophage (M1) to immunoregulatory macrophage (M2). Furthermore, decreased activity of HSC induced by macrophage differentiation, could reduce the expression of α-SMA and col1α1 and alleviate collagen accumulation after KYNA administration.

Discussion & Conclusion: Gut-derived KYNA could ameliorate liver fibrosis through affecting the interaction between macrophage and HSC via gut-liver axis, which would provide the new strategy for anti-fibrotic treatment.

Keywords: kynurenic acid, gut microbiota, hepatic fibrosis, hepatic stellate cell, liver macrophage

Abstract : OR-BS008

Role of Ca2+ in The Process of HUVEC Injury by Bubble.

Jiayan Li

Naval Medical University, Shanghai, Shanghai, China

Background: Decompression sickness (DCS) is a pivotal medical problem threatening diving safety, and genesis of intravascular bubbles is the primary etiology. It has been proved that vascular endothelial cell injury played a key role in the development of DCS, but the mechanisms are not fully understood.

Objectives: To establish microbubble in vitro contact technique and explore the mechanism of vascular endothelial injury in DCS preliminarily. To clarify the changes of intracellular calcium ions (Ca^{2+}) content before and after bubble touching to determine whether it is associated with cell injury.

Methods: Single-cell bubble-touch method and multi-bubbles contact technique were developed to observe in real time the changes in cell morphology of bubble-touched human umbilical vein endothelial cells (HUVEC). The changes of Ca^{2+} content in the whole cell layer of HUVEC were observed following multi-bubble contact for 30 min, and the changes of intracellular Ca^{2+} content in the touched and adjacent cells were further observed using the single-cell bubble-touch technique.

Results: Bubble-touched single cell showed bubble-like protrusions and swelled to death, and its nucleus gradually solidified. This phenomenon spread to the adjacent cells. The intracellular Ca^{2+} content of HUVEC was significantly increased by multi-bubbles touching in HUVEC cell layer. For the isolated single HUVEC or the single HUVEC with adjacent ones, the intracellular Ca^{2+} content was also significantly increased by single bubble touching, and there was no significant difference between the two types. For the adjacent cells around the touched one, intracellular Ca^{2+} content increased from near to far according to the distance to the touched cell, and its diffusion rate decreased with time, and the fluorescent peak level decreased with the propagation distance.

Discussion & Conclusion: Bubble contact leads to cell death, during which intracellular Ca^{2+} content increases, which may indicate that bubbles activate the HUVEC death mechanism by increasing intracellular Ca^{2+} content, leading to HUVEC injury.

Keywords: decompression sickness, bubbles, vascular endothelial cells, calcium ion, dive

Abstract : OR-BS009

Membrane Protein Camouflage: The Application and Mechanism of Platelet Nanovesicles in Promoting Hepatocyte Engraftment.

Huanxiao Shi, Chao Wang, Wenlin Li, Wenbin Tang, Hanting Shen, Yang An, Jing Wang

Naval Medical University, Shanghai, Shanghai, China

Background: Hepatocyte transplantation is an alternative to orthotopic liver transplantation, but the low efficiency of hepatocyte colonization is the bottleneck problem limiting its efficacy[1]. In previous study, we found that "loss of membrane protein" was an important cause of hepatocytes loss[2]

Objectives: Integrate platelet nanovesicles (PNVs) to hepatocyte membrane so as to supplement hepatocyte membrane proteins. Investigate the intrahepatic engraftment ability of PNVs-modified hepatocytes and elucidate its mechanism.

Methods: we clarified the pro-engraftment effect of PNVs fusion in mice with liver disease (i.e., Fah deficiency mice) by luciferase assay and competitive repopulation assay. For the mechanistic studies, complement activation was studied by immunofluorescence staining of membrane attack complex (MAC). Cell adhesion was evaluated by sphere formation rate upon suspension culture and by ectopic engraftment.

Results: we realized efficient and safe incorporation of platelet membrane proteins into hepatocyte membranes and found that PNVs-modified hepatocytes have a significant engraftment and repopulation advantage over unmodified hepatocytes within the same intrahepatic microenvironment. Preliminary mechanistic studies showed that PNVs inhibited MAC formation, thereby reducing clearance of transplanted hepatocytes due to instant blood-mediated inflammatory reaction (IBMIR). PNVs fusion increased sphere formation rate and decreased hepatocyte ectopic engraftment.

Discussion & Conclusion: PNVs modifications confer platelet membrane biological properties of "immune escape" and "cell adhesion" on transplanted hepatocytes and achieve efficient hepatocyte engraftment under the condition of no damage to the recipient liver. The successful implementation of this project is conducive to promote the clinical application of hepatocyte transplantation.

Keywords: hepatocyte transplantation, platelet, nanovesicle, membrane attack complex, cell adhesion

Abstract : OR-BS012

The Mechanism of Protein Phosphorylation Mediated by S6K-GSK3β Axis in Cell Injury induced by PLTX.

Shengwen Wang, Huiyun Deng, Xinrui Shang

Naval Medical University, Shanghai, Shanghai, China

Background: Palytoxin (PLTX) is one of the most toxic non-protein marine bio-toxins. Nonetheless, the specific targets and mechanisms of PLTX-induced cell injury remain unclear.

Objectives: This study aims to explore the targets of PLTX action and regulatory mechanism of downstream protein phosphorylation modification, thus providing insights for marine bio-toxin prevention and drug development.

Methods: Cell models sensitive to PLTX were screened by cytotoxicity assay. Potential targets of PLTX were identified by Lip-SMAP high-throughput analysis, and validated by molecular docking. For the exploration of downstream molecular mechanisms, differentially expressed kinases after PLTX exposure were identified through transcriptome-proteome conjoint analysis. Phosphoproteomic was used to screen for significantly changed proteins of phosphorylation levels. Finally, we found the signaling pathway of protein phosphorylation affected by PLTX. Key genes of phosphorylation were validated by qPCR and Western-blot. The effects of PLTX action on adhesion, invasiveness and migration of HaCaT cells were detected by cell adhesion, transwell and scratch assays. The S6K inhibitor PF-4708761 was used to investigate the reverse effect on toxin damage.

Results: The cytotoxicity assay demonstrated that HaCaT cells were sensitive to PLTX toxicity, and the half inhibitory concentration(IC50) was (1.24±0.93)nmol/L. The Lip-SMAP combined with molecular docking implied that ATP1A1 was a direct target of PLTX action. Integrative multi-omics analysis combined with qPCR and Western-blot showed an up-regulated expression of the kinase S6K after PLTX treatment, leading a higher phosphorylation level of the downstream substrate GSK3β, consequently reducing cell adhesion, altering cell morphology and cytoskeleton. The proliferation and adhesion inhibition induced by PLTX could be partially reversed by the S6K inhibitor.

Discussion & Conclusion: PLTX may inhibit Na^+, Ka^+-ATPase activity by acting on ATP1A1, further affecting the phosphorylation of related proteins through S6K-GSK3β axis to alter cell morphology and cytoskeleton, thus reducing cell proliferation and adhesion functions. This study provides a theoretical basis for prevention and drug development against marine toxins.

Keywords: palytoxin, damage mechanism, S6K-GSK3β axis, ATP1A1, protein phosphorylation

Abstract : OR-BS013

Effect of *Solanum melongena* L. Extract on Intestinal Tight Junction Assembly and its Underlying Mechanism.

Purisha Kulworasreth[1], Pichayapa Sukmak[1], Purit Kulworasreth[1], Laongdao Thongnak[1], Chutima S. Vaddhanaphuti[2], Pawin Pongkorpsakol[1]

[1] Princess Srisavangavadhana College of Medicine, Chulabhorn Royal Academy, Lak Si, Bangkok, Thailand

[2] Faculty of Medicine, Chiang Mai University, Mueang Chiang Mai, Chiang Mai, Thailand

Background: Tight junction disruption can lead to intestinal inflammation and associated diseases. There is no FDA-approved drug that recover intestinal tight junction assembly. Therefore, it is necessary to search for new drugs or nutraceuticals that enhance intestinal tight junction integrity. *Solanum melongena* L. has been considered a traditional pharmacopoeia used locally in Thailand to alleviate intestinal inflammation-related symptoms. However, mechanism of *Solanum melongena* L. action is currently unknown. We hypothesized that it might be able to support intestinal health including tight junction-dependent intestinal barrier function.

Objectives: To scrutinize the effect of *Solanum melongena* L. on intestinal tight junction assembly and its underlying mechanism.

Methods: We used Ca^{2+} depletion method to disrupt intestinal tight junction in intestinal epithelial-like T84 cell monolayers. Transepithelial electrical resistance (TER) measurement was performed to assess intestinal barrier function. Fluorescein isothiocyanate (FITC)-dextran and sirtuin-1 (SIRT-1) activity assays were used to identify mechanism of tight junction-dependent paracellular permeability. Immunofluorescence staining was performed to visualize the localization of tight junction proteins.

Results: TER measurement and FITC-dextran permeability assay indicated that *Solanum melongena* L. extract increased TER across T84 cell monolayers after being disrupted by Ca^{2+} depletion in time- and dose-dependent manners with maximal effect being observed at 1,000 µg/ml. Of particular importance, *Solanum melongena* L. extract-induced TER increases in T84 cell monolayers were affected by pretreatment with neither AMP-activated protein kinase (AMPK) inhibitor nor Ca^{2+}/calmodulin kinase kinase (CaMKK) inhibitor. Similarly, inhibitors of extracellular signal-regulated kinase (ERK) and mammalian target of rapamycin (mTOR) did not abolish the effect of *Solanum melongena* L. extract-induced TER increases in T84 cell monolayers. Interestingly, SIRT-1 inhibitor significantly suppressed *Solanum melongena* L. extract-induced TER increases in T84 cell monolayers. Consistently, *Solanum melongena* L. extract was shown to activate SIRT-1 activity. Immunofluorescence staining suggested that *Solanum melongena* L. extract recovered occludin and occludens-1 (ZO-1) localization to cell junction region via SIRT-1-dependent mechanism.

Discussion & Conclusion: *Solanum melongena* L. extract enhanced intestinal barrier by suppressing tight junction-dependent leak pathway permeability and correcting tight junction localization, at least in part, via SIRT-1-dependent pathway.

Keywords: *Solanum melongena* L., tight junctions, SIRT-1, ZO-1

Identification of Coagulation and Fibrinolysis-Related Genes in Atherosclerosis and Analysis of Immune Infiltration.

jingyu zhang, changjin li

Naval Medical University, shanghai, shanghai, China

Background: In atherosclerosis (AS), fibrin deposition is common and it becomes more severe in advanced-stage lesions. Through fibrin deposition, coagulation and fibrinolysis system can play a role in the occurrence and progression of atherosclerotic plaques. The coagulation and immune system network, focused on coagulation and fibrinolysis-related genes (CFRGS), can respond effectively to tissue damage and pathogen invasion. However, the involvement of CFRGSs in AS and its impact on patients' immune cells have not been reported.

Objectives: To explore the identification of coagulation and fibrinolysis-related genes (CFRGS) in atherosclerosis (AS) and analyze immune infiltration using bioinformatics techniques, aiming to determine the impact of CFRGS in AS.

Methods: We performed differential expression analysis (AS samples vs normal samples) to obtain differentially expressed genes (DEGs) in GSE100927 dataset. Coagulation and fibrinolysis related differentially expressed genes (CFR-DEGs) were obtained by overlapping DEGs and CFRGSs. Further, generalized linear model (GLM), grandient boosting machine (GBM) and randomForest (RF) algorithm were implemented to build a diagnostic model. We further performed immune infiltration and gene set enrichment analysis (GSEA) based on diagnostic genes.

Results: We identified 2211 DEGs associated with AS. Then, 13 CFR-DEGs were obtained via venn diagram. Subsequently, 5 feature genes (*TNF, SERPINA3, F12, PLAU* and *CSF3*) were identified via machine learning. Moreover, 4 diagnostic biomarkers associated with coagulation and fibrinolysis, including *F12, PLAU, SERPINA3* and *TNF*, were screened via receiver operating characteristic (ROC) analysis. The immune infiltration and Gene Set Enrichment Analysis (GSEA) analysis suggested that these diagnostic biomarkers were related to the function of cytokine interaction pathway and some differential immune cells. Finally, we found significant lower expression of *CSF3* and *SERPINA3* in AS group compared to the normal group by RT-qPCR.

Discussion & Conclusion: This study identified four CFRGS in AS: *IF12, PLAU, SERPINA3*, and *TNF*. Analyses of drug networks and immune cell infiltration shed light on the molecular mechanisms of CFRGS in AS, providing potential directions for AS treatment.

Keywords: atherosclerosis, coagulation and fibrinolysis related genes, diagnostic genes, machine learning, immune cells

Abstract : OR-BS023

PRMT6 Promotes Inflammation in Sepsis by Increasing Histone Acetylation through Interacting with HDAC1.

Xi-Bo Ye, Nan Li, Tian-Liang Li

Naval Medical University, shanghai, shanghai, China

Background: The excessive inflammatory response plays a pivotal role in the pathogenesis of sepsis; however, the epigenetic mechanisms involved in the regulation of inflammation remain elusive.

Objectives: This study aims to investigate the role of protein arginine methyltransferase 6 (PRMT6) in the inflammation of sepsis and its underlying mechanism, with the objective of identifying a novel therapeutic target for sepsis treatment.

Methods: A sepsis model was established in mice through intraperitoneal injection of LPS during in vivo experiments, and the survival rates of *Prmt6*$^{+/-}$ and *Prmt6*$^{-/-}$ mice were observed. The levels of inflammatory cytokines (IL-6, TNF-α, and IFN-β) in serum were measured using ELISA, while H&E staining was used to assess the degree of inflammatory cell infiltration in lung tissue. In vitro cell experiments used peritoneal macrophages from *Prmt6*$^{+/-}$ and *Prmt6*$^{-/-}$ mice stimulated with LPS. The expression levels of inflammatory cytokines were assessed using ELISA and qPCR. CHIP assay, Western blotting and immunoprecipitation experiments were used to reveal molecular mechanisms.

Results: The *Prmt6*-deficient mice exhibited significantly higher survival rates compared to the control mice in the sepsis model, along with a significant reduction in serum IL-6, TNF-α, and IFN-β levels and decreased inflammatory cell infiltration in lung tissue. *Prmt6*-deficient macrophages exhibited reduced production of inflammatory cytokines without affecting the activation of the TLR4 signaling pathway. Furthermore, PRMT6 was found to interact with HDAC1 to increase H3K27ac within the promoters of *Il6, Tnfa*, and *Ifnb* in macrophages, thereby promoting the inflammatory response during sepsis. Additionally, treatment with PRMT6 inhibitor (EPZ020411 2HCl) significantly enhanced the survival rate of septic mice.

Discussion & Conclusion: PRMT6 enhances the production of inflammatory cytokines in sepsis by promoting H3K27ac modification of their promoters through interaction with HDAC1. The PRMT6 inhibitor has the potential to be developed as a pharmaceutical treatment for sepsis.

Keywords: sepsis, PRMT6, toll-like receptor, epigenetic regulation

Abstract : OR-BS025

Searching for Next Generation Psychiatric Drugs from Indonesian Biodiversity. Bioinformatics Approach on Psychedelic Compounds binding to Neuroplasticity Receptors.

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Background: Soldiers in battle frequently return with PTSD and other mental disorders. In civilian society, these mental or psychiatric disorders have also become widespread which can affect also national defense. Xanax (alprazolam) is one the most sold psychiatric drugs targeted GABA receptor. Recently psychiatric drugs from mushroom attract much attention due to different molecular mechanisms of treatment and micro dose activity which can avoid potential addiction. Psilocybin has higher binding affinity then LSD, and this compound was produced by mushroom such as *Psilocybe cubensis*, and *Panaeolus cyanescens*, which their genomes have been revealed. Here, we developed PCR screening to isolate potential indigenous mushrooms which contain genes responsible for psilocybin synthesis. And then focusing on neuroplasticity as molecular mechanism of treatment, we applied molecular docking and molecular dynamics approach to study potential receptors of psilocin in human neuron.

Objectives: These research objectives are to screen indigenous mushrooms by PCR method as source of psilocybin for future clinical trial and to determine the binding affinity of psilocin with potential receptors in human brain through molecular docking and molecular dynamics.

Methods: For PCR, gene encoding PsiK Phosphorylation was targeted. Primers based on genome sequence of reported genomes of psychedelic mushrooms were used. Mushrooms grew in the forest of Indonesia Peace and Security Center was used as field for mushroom hunting. 3D Structure of psilocin obtained from PubChem (CID 4980). Potential receptor used are TrkB, and 5HT7R. 3D structure of proteins obtained from RSCB PDB. Preparation of ligand and proteins was carried out using Pymol and docking of ligand-protein is done using Autodock. Visualization of binding result using LigPlot application.

Results: For PCR screening, among about more than 120 types of mushroom, one species was found to have the gene for PsiK. As control, genome of psychedelic mushroom was used. For molecular docking studies, each protein-ligand binding affinity shown in energy table, highest affinity of Trek-psilocin is -4.4kcal/mol and 5HT7R-psilocin is -7.7kcal/mol.

Discussion & Conclusion: PCR screening is effective to find out mushroom-producing psychedelic compounds. Molecular docking and molecular dynamics studies are potential to predict binding receptor of the psychedelic compound. (Supervisor : Dr. Arief Budi Witarto)

Keywords: psychiatric disorder, mushroom, psilocybin, PCR, PsiK, TrkB receptor, molecular docking, molecular dynamics

Abstract : OR-BS028

Potential Cholesterol-lowering Effects of Functional Ingredients Derived from Local Thai Vegetables by Interfering Cholesterol Micelle Formation.

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Background: With the rising issue of sedentary lifestyle in this generation due to factors, such as, lack of physical activity, work-from-home jobs, and availability of online food ordering platform, obesity has become one of the significant health issues worldwide. This condition initially caused by alteration of lipid profiles including hypercholesterolemia, hypertriglyceridemia, and dyslipidemia. Thus, prevention of hyperlipidemia is urgently needed. Several local Thai vegetables have been recognized to exhibit potent antioxidant activities, including *Piper sarmentosum* Roxb. (PSR), *Eryngium foetidum* L. (EFL)., *Solanum torvum* Sw. (STSW), *Acacia pennata (*L.*) Wild* (APW), *Acmella oleracea (*L.*)* (AO), *Lentinus polychrous* Berk (LPB), *Coccinia grandis* Linn. Voigt (CG). However, there is limited information regarding to their lipid-lowering effects and the mechanisms involved.

Objectives: This study aims to investigate and identify the mechanisms involved in cholesterol-reducing effects of functional ingredient derived from seven local Thai vegetables using aqueous extraction method.

Methods: Cell viability was initially screened using 3-(4,5-dimethylthiazolyl- 2)-2,5-diphenyltetrazolium (MTT) assay. Determination of intestinal cholesterol absorption in human colorectal adenocarcinoma (Caco-2) cells was performed using fluorescent-25-N-[(7-nitro-2-1,3-benzoxadiazol-4-yl) methyl] amino]-27-norcholesterol incorporated with cholesterol micelles (25-NBD-MC) and subsequently analyzed by high content imaging. Forty mg/mL of ezetimibe (Ez), a drug for inhibition of intestinal cholesterol absorption, was also used as positive drug. The physicochemical properties of cholesterol micelles were also carried out by measuring size and cholesterol solubility to identify their mechanisms of actions.

Results: Results showed that 1 mg/mL of 7 aqueous extracts did not alter Caco-2 cell viability. Furthermore, the same concentration of 7 compounds significantly reduced 25-NBD-MC absorption similarly to that of 40 mg/mL of Ez. However, APW, PSRW, and STSW markedly appeared to contribute to enlarge of cholesterol micelle size whereas none of these compounds altered cholesterol solubility.
Discussion & Conclusion: This finding suggest that 7 aqueous extracts have potential to be functional ingredients for future foods due to their additional cholesterol-reducing property. Among these, APW, PSRW, and STSW clearly revealed their effects on interfering cholesterol micelle formation while lipid absorption. Nonetheless, the precise mechanisms of other 4 compounds and the major active constituents in these 7 compounds require further investigation.

Keywords: local Thai vegetables, lipid-lowering, cholesterol absorption, hyperlipidemia, cholesterol micelle

Public Health and Epidemiology Research

What Sustain Mask-wearing Behaviour among Elders in a Rural Community in the Post-COVID-19 Era: An Exploratory Mixed - Methods Study.

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Background: COVID-19 leads to mortality worldwide, especially among vulnerable patients, notably the elderly. Despite the efficacy of masks in preventing disease transmission, their use is no longer mandatory. Nevertheless, the sustained adoption of mask-wearing as an intervention to protect against COVID-19 remains insufficient among the elderly residing in rural areas of Thailand.

Objectives: The study aims to identify the factors influencing mask-wearing among the elderly in rural areas of Thailand.

Methods: This research employed an exploratory mixed-method design with elderly individuals aged 60 and above in Sa Kaeo. It included qualitative interviews with 15 participants and a subsequent survey of 201 elders. Themes, codes, and quotes from the interviews was used to create the questionnaire. Content validity was confirmed by five experts, and a pilot study was conducted to assess internal reliability. Quantitative data analysis employed independent t-tests, Chi-square tests, and the Mann-Whitney U test as appropriate. Additionally, exploratory factor analysis and structural equation modeling (SEM) were conducted to identify factors influencing mask-wearing practices.

Results: Seven sub-themes were identified, including perceived benefits of mask-wearing, perceived threat of COVID-19, mask-wearing enhancing attractiveness and self-confidence, social norms, misconceptions about COVID-19 prevention tools, perceived barriers to mask-wearing, and resources to afford face masks. The survey revealed the adherence of 81.1% of the participants to mask-wearing. SEM analysis demonstrated that motivation, comprising (1) the perceived threat of COVID-19, (2) alternative threats aside from COVID-19, and (3) the perceived benefits of a face mask strongly affected mask-wearing practices ($\beta = 0.68$, $p < 0.001$) and the willingness to wear a face mask ($\beta = 0.61$, $p < 0.001$). Social norms had a negative direct effect on the perceived barrier ($\beta = -0.48$, $p < 0.001$) and a positive direct effect on mask-wearing practices ($\beta = 0.25$, $p = 0.001$).

Discussion & Conclusion: The study highlights that motivation and social norms play pivotal roles in sustaining mask-wearing behavior among rural elderly populations. Encouraging local cooperative actions through community rules could initiate behavioral changes within the community. These findings contribute to the understanding of factors influencing mask-wearing and provide insights for designing effective interventions to promote mask-wearing among elderly individuals in rural areas.

Keywords: COVID-19, mask-wearing behaviour, rural areas, elder

Abstract : OR-PE002

Association between Severity of Premenstrual Symptoms and Absenteeism in Japanese Working Women.

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Background: Around 80% of menstruating women are reported to suffer from premenstrual symptoms.

Objectives: We examined the impact of the severity of premenstrual symptoms on absenteeism among working women in Japan.

Methods: In October 2021, we conducted an online, anonymous survey on premenopausal working women between the ages of 18 and 41. Pregnant women were excluded from the analysis. Data were collected through a self-administered questionnaire on demographic information, premenstrual symptoms, and work-related variables . Participants were classified into three groups according to the severity of premenstrual symptoms based on the Premenstrual Screening Tool: no/mild premenstrual syndrome (PMS), moderate/severe PMS, and premenstrual dysphoric disorder (PMDD). The characteristics of the three groups were compared by t test and chi-square test for continuous and categorical variables, respectively. Association between PMS severity and absenteeism was examined using multiple logistic regression analysis adjusted for age, body mass index (BMI), marital status, child status, educational background, employment status, and annual household income.

Results: A total of 3614 women were included in the analysis, with an average age of 32.6 ± 5.3 years and 77.7% working full-time. Among them, 71.4% were in the no/mild PMS group, 23.9% in the moderate/severe PMS group, and 4.7% in the PMDD group. Those with higher symptom severity were slightly younger, had a slightly higher BMI, and were less likely to be married or have children. The proportion with a final education of college, graduate school or higher and the proportion with a higher annual household income were particularly low in groups with higher severity. Multiple logistic regression analysis showed adjusted odds ratios (aOR) and 95% confidence interval (CI) of 3.83 (3.07-4.77) and 5.52 (3.84-7.96) for the moderate/severe PMS and PMDD groups, respectively, compared to the no/mild PMS group, indicating a significant association between higher symptom severity and absenteeism.

Discussion & Conclusion: This study statistically examined the association between PMS severity and absenteeism among working women in Japan. Our results showed that more severe PMS symptoms were strongly associated with absenteeism, and this effect remained significant even after adjusting cofounding factors.

Keywords: absenteeism, Japan, premenstrual syndrome

Abstract : OR-PE006

Prevalence and Factors Associated with Long COVID among Adults in Phra Phloeng Subdistrict, Khao Chakan District, Sa Kaeo Province, Thailand: A Cross-sectional Study.

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Background: Some individuals with a history of COVID-19 infection have experienced different manifestations during post-covid-19 for weeks or even for months, also known as long COVID. However, epidemiological studies regarding long COVID symptoms in Thailand are not widespread, and most of the population of Thailand live in rural areas. This research conducted in rural areas of Thailand may be critical to improving our understanding of the long-term consequences of COVID-19, identifying prevalence and associated factors of each long COVID symptoms, as well as developing effective strategies for preventing and treating this debilitating condition.

Objectives: To determine the prevalence of Long COVID and to identify the associated factors of Long COVID relating to respiratory, neurological, psychological systems and fatigue among adults in Phra Phloeng, Khao Chakan district, Sa Kaeo province, Thailand.

Methods: The study was conducted with 208 people who were age of 20 years or older, living in Phra Phloeng Subdistrict, Khao Chakan District, Sa Kaeo Province, testing positive for COVID-19 either by ATK or RT-PCR for at least 3 months and home isolation or hospitalized-isolation. Socio-demographic characteristics, mMRC (Modified Medical research) Dyspnea scale, Cough evaluation, VAS fatigue, GAD-7, ISI (insomnia severity index) were collected. The primary outcome was the prevalence and associated factors of long COVID-19 using a questionnaire and then analyzing continuous and categorical data in STATA17 to find the outcome.

Results: The study revealed a total of 288 participants, the prevalence of long COVID was 35.76%. Overall, five long COVID symptoms (fatigue, dyspnea, cough, insomnia, anxiety), the most common symptom is fatigue (22.57%). Associated factors for long COVID included age group, gender, marital status, and health coverage scheme.

Discussion & Conclusion: There are two differences in terms of statistical significance for the association with long COVID symptoms. Results show that agriculturists bring about long COVID symptoms, conversely 60-year-old people and older are protective factors. Further studies applied to cohort study for more accurate and more precise results in larger scale.

Keywords: long COVID, mMRC, VAS fatigue, GAD-7, ISI

Abstract : OR-PE010

Prevalence, Associated Factors and Impact on Inferior Heel Pain Among Agriculturist in Phra Phloeng, Khao Chakan, Sa Kaeo Province Thailand, 2023: A Cross-sectional study.

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Background: Inferior heel pain is a common condition caused by various factors, including plantar fasciitis, calcaneal spur, and plantar fibroma. Occupations that involve prolonged standing, walking, or carrying heavy loads, such as agriculture, increase the risk of developing this condition. Thailand has a large workforce in the agricultural sector, but limited information exists about the prevalence and impact of inferior heel pain among agriculturists in rural areas. This study aims to determine the prevalence, associated factors, and impact of inferior heel pain among agriculturists in Sai Thong, Suk Jareon, and Sai Ngam, Khao Chakan, Sa Kaeo Province, Thailand.

Objectives: This study aimed to assess the prevalence, associated factors and impact on inferior heel pain among agriculturist in Phra Phleong, Kao Chakan, Sa Keao province Thailand.

Methods: The cross-sectional study was conducted by using self-questionnaires, including the Foot Function Index (FFI) to evaluate pain and disability. A total of 309 agriculturists who were eligible to criteria were surveyed in March 2023. The statistical analysis was performed using Stata ver.17.0 software, and the data were analyzed using descriptive statistics, chi-square test, and logistic regression.

Results: The prevalence of inferior heel pain was 42.7%. Female gender was 48.4% (aOR .83, 95%CI: 1.14-2.94), walk-only working posture was 49.5% (aOR 2.022, 95%CI: 1.21-3.38), and work on rough surfaces was 51.7% (aOR 2.170, 95%CI: 1.28-3.69) were statistic significantly associated with inferior heel pain. The participants reported a mild to moderate impact on functional impairment by the Foot function index, which decreased in their quality of life due to the pain and functional limitations.

Discussion & Conclusion: This study found a high prevalence of inferior heel pain among agriculturists. Agriculturists who work long hours of work in standing or walking positions, with female gender and working on rough surfaces being identified as risk of developing inferior heel pain. The researchers recommend health education efforts to raise awareness of these risk factors and how to manage inferior heel pain. Future studies should consider a longitudinal design, objective measure such as imaging and clinical examination, and a larger sample size to improve the statistical power of the study and establish causal relationships between variables.

Keywords: inferior heel pain, agriculturists, plantar fasciitis, calcaneal spur

Abstract : OR-PE015

Prevalence and Risk Factors of the Infestation of Head Lice with Permethrin Resistance in Juvenile, Eastern Thailand.

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Background: Head pediculosis, a non-life-threatening problem that is the most unsolved problem worldwide, may still cause unwanted complications afterward. The lice infestation can be found in any age group; however, many researchers have speculated that the prevalence is high in school-age children. Moreover, the traditional method of treatment, such as using permethrin shampoo in suburban areas, is beginning to decrease in efficacy due to insufficient treatment, drug resistance, or any environmental causes.

Objectives: This study aims to identify the prevalence of head pediculosis and risk factors associated with head lice infestation at Ban Na Yao Border Patrol Police School, as well as study the prevalence of the resistance gene of permethrin for future usage plans.

Methods: A cross-sectional study of 308 students aged 5 to 15 in a school collected lice samples and administered questionnaires. These samples were analyzed for genetic factors (VSSC and GluCl genes) using RFLP-PCR. The study employed regression analysis to identify associations between demographic factors, lice infestation prevalence, and gene resistance.

Results: Of the 308 participants included, 53.6% were girls. The mean age was 9.4 ± 2.16 years old. Among participants, 35% have head lice infestations, and 90.8% of lice infestation participants were females, which has 8.54 times (95% CI 3.21–22.74, $p < 0.001$) increased risk of infection compared to male participants. Factors that substantially increase this risk are the history of head lice in the previous month 1.61 times (95% CI 1.48–8.65, $p = 0.008$) than those who are not. According to the PCR-RFLP analysis, it was determined that 91.23% of the examined samples exhibited resistance to permethrin genetic profiles, while the rest of the samples manifested a genetic susceptibility to permethrin.

Discussion & Conclusion: Among primary schools located in rural areas, girls exhibit a notable vulnerability to lice infestations. Additionally, a prior history of infestations increases the likelihood of experiencing a current infestation. Most samples have resistance profiles to permethrin. Researchers recommend exploring alternative strategies for more effective head lice treatment, including higher-dose and more frequent Permethrin shampoo usage and the investigation of Ivermectin, a proven off-label medication.

Keywords: head lice, rural health, community-based study, juvenile, Thailand

Abstract : OR-PE016

Prevalence and Associated Factors of Low Back Pain Among Rubber Agriculturists in Rural Community, Thailand, 2023.

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Phramongkutklao College of Medicine, Ratchathewi, Bangkok, Thailand

Background: Low back pain is a significant work-related musculoskeletal disorder among rubber agriculturists. Several research have indicated the associated factors of low back pain in agriculturists. This study is designed to investigate the predictors of low back pain among rubber agriculturists in Thailand in 2023 after harvesting. The results will be used to generalize the whole population of rubber workers in rural areas.

Objectives: This study is aimed to identify the prevalence and associated factors of low back pain among rubber agriculturists in Phra Phloeng Subdistrict, Khao Chakan District, Sakaeo Province ,Thailand in 2023.

Methods: A cross-sectional study was conducted among all adult rubber agriculturists in the rural area of Thailand from January to May 2023. During this period, respondents were asked to answer a self-administered questionnaire. Bivariate and multivariate binary logistic regression analyses were performed.

Results: Prevalence of low back pain in this study is 62.84% . The multivariate analysis reveals that the factors significantly associated with low back pain among rubber agriculturists are working more than 7 hours per day (OR 2.16, 95% CI 1.18 - 3.95, p= 0.012), lifting a load of more than 10 kilograms for 2 hours or more (OR 4.20, 95% CI 1.66 - 10.61, p= 0.002), sleeping for less than 6 hours per day (OR 2.10, 95% CI 1.17 - 3.75, p= 0.012), and experiencing stress (OR 2.95, 95% CI 2.95, p= 0.006). However, the study found that standing for more than 8 hours per day decrease the occurrence of low back pain (OR 0.40, 95% CI 0.20 - 0.81, p= 0.010).

Discussion & Conclusion: The high prevalence of low back pain among agriculturists in rural area in Thailand still persists. Related factors of low back pain from our study are all modifiable. Further studies should establish the interventions on these factors in order to lower burden of the disease.

Keywords: low back pain, rubber agriculturists, prevalence, associated factors

Abstract : OR-PE022

Prevalence and Associated Factor of Delayed Language Development of Preschool Children in Sa Kaeo, Thailand.

Ratchata Kheowkhamsaeng, Adirakrit Ruangsawat, Prakronkiate Siriwongnapa, Napat Intarapairoj, Chanapat Limprungpattanakit, Chanikan Buranabunwong, Thawanporn Chukiatchaturaporn, Papon Alongkotpatay, Panissara Amornjiraporn, Pornchanit Sirisuknantadech, Sasipa Arunrakthavorn, Harithanon Jongbhinyotragool, Kanlaya Jongcherdchootrakul, Anupong Kantiwong, Wirongrong Arunyanart, Teeraboon Letwanichwattana.

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Background: Language skill is necessary for communication and daily life, and the COVID-19 pandemic has caused a delay in language development. According to the report of ministry of public health, the current situation of language development in Thai children remains a problem and is increasingly detected. Delayed language development in pre-school children is a significant issue. Thus studying the prevalence and risk factors of delayed language development in Thailand would be beneficial.

Objectives: The objective of this study is to investigate the prevalence of delayed language development in pre-school children in the provinces of Sa Kaeo.

Methods: A cross-sectional study was conducted using a structured and standardized questionnaire. The sample group includes children aged 3-6.5 years old from four kindergartens in Sa Kaeo. The Data was collected using questionnaires and language development was evaluated using the Developmental Surveillance and Promotion of Young Children (DSPM) handbook. Statistics used for analysis included frequency, percentage, chi-square, and binary logistic regression. Data was analyzed using STATA version 17.

Results: The prevalence of delayed language development was found to be 55.71%. In multivariate analysis, parameters found to be significantly associated with delayed language development were increased age (AOR = 5.60, CI: 2.72-11.54), small number of children in Kindergarten class (AOR = 3.43, CI: 1.17-10.11), high school maternal education (AOR = 0.48, CI: 0.25-0.94) and complete Expanded Program on Immunization(EPI) vaccine in children (AOR = 0.13, CI: 0.02-0.75)

Discussion & Conclusion: Our study emphasizes the importance of participation in setting goals to solve this problem, and specific risk factors identified in this study. The identification and development of policies or guidelines from the early stages by authorities, schools, and healthcare systems should collaborate in a coordinated and comprehensive manner. Additionally, efforts should be made to set targets to solve economic and social inequalities, which can help reduce the burden and improve long-term health outcomes for these children.

Keywords: delayed language development, preschool children, associated factors, prevalence

Equation and Associating Factors of Risk Increased in Heat Related Injury in Military Armed force training at 5 Main Military Camp in Different Region, Thailand.

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Background: Nowadays data science has become one of the biggest factors impacting the world. Big Data has become essential impact daily life. . In this research we have been focusing on how data will impact our lives in the people who expecting to have healthy lifestyle ,however, to receive healthy lifestyle in SEA has also become the risk since the very first of the step out the door

Objectives: The purpose of this study is to find out whether the factor related to heat related injury which effect the health of new soldier. The purpose was to protect and improve the training to receive the best result and minimize the risk of getting heat related injury. Also applicable for those men who are willing to have good shape but also to know about risk that could occur to himself. Many researchers have found multiple factors related to heat injury but in this paper would use machine learning to assist in finding the factor that would still be hidden

Methods: A cohort study was conducted from May to November 2019-2023 using royal Thai army entered by trainer of each unit questionnaires including the demographics, factors associated with BMI, Stress, Body Temperature and Urine color . Data analysis involved the use of the Machine learning technique containing of deep learning,Contrast mining and XAI explainable AI for risk identification.

Results: Overall, there were 27886 participants, comprising 5 main military unit in regions of Thailand. 430 soldier (1.6%) who were presented with heat rash at the end of the has strongly related to Environmental Heat and Humidity but haven't related to color of the urine. In the other hand urine color has significantly related to more life-threatening injury e.g., Rhabdomyolysis.

Discussion & Conclusion: enhance safety of physical training to reduce risk of heat related injury. Monitoring environmental factor is advisable. However, people from different part of Thailand has shown different tolerances. Adequate hydration and decrease alcohol use has become of the importance protective factor. Further research could find out more hidden factors which has more minimal factor in each part of interested area in order to decrease the unwanted outcome.

Keywords: machine learning, contrast mining, heat related injury

Abstract : OR-PE031

Medical Cannabis Knowledge and Attitudes Amongst Health Care Worker in Mae Fah Luang University Medical Center Hospital and Institute of Thai-Chinese Traditional Medicine.

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Background: In recent years, many countries have legalized cannabis for medical and recreational purposes. However, in Thailand, there is a dearth of evidence-based data regarding the therapeutic use of cannabis. Furthermore, knowledge about the health benefits and concerns associated with cannabis remains limited in the Thai context.

Objectives: This study aims to investigate the knowledge and attitudes of healthcare workers regarding medical cannabis and explore potential associations with demographic factors.

Methods: In November 2022, we conducted a cross-sectional study among healthcare workers at Mae Fah Luang University Medical Center Hospital and the Thai-Chinese Medicine Institute. The survey instrument consisted of two components. Firstly, it assessed the participants' fundamental knowledge of medical cannabis. Secondly, it gauged their attitudes towards medical cannabis using a Likert Four-Point scaling system. Knowledge scores were categorized as high, moderate, or low, while attitudes were categorized into two groups: those in favor of medical cannabis and those opposed to it.

Results: Data were collected through online surveys administered via Google Form. We received a total of 74 complete and analyzable responses out of 94, yielding a response rate of 78.72%. When comparing knowledge scores, the high knowledge group scored 43.24%, while the low knowledge group scored 56.76%. Attitudes towards medical cannabis use were evenly divided, with 50% expressing agreement and 50% disagreement. The study found no significant associations between general demographic factors and knowledge or attitudes towards medical cannabis among healthcare workers.

Discussion & Conclusion: Basic knowledge about cannabis appears to be limited among healthcare workers, while attitudes towards its medical use are evenly split. Given that healthcare workers play a crucial role in advising patients and the public on medical cannabis, there is a pressing need to enhance their knowledge in this area.

Keywords: cannabis, knowledge, attitudes, health, worker

Clinical and Translational Research

Abstract : OR-CT001

Effects Of Mecobalamin On The Functional Outcomes Of Complex Regional Pain Syndrome Type 1 Of The Foot And Ankle.

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Background: The manifestation of Complex Regional Pain Syndrome (CRPS) ranges from mild symptoms to severe disability. Regardless, CRPS often presents with allodynia that is accompanied by soft-tissue swelling and trophic changes of the skin. Mecobalamin, an activated form of Vitamin B12, is widely supplemented in neuropathies and malnutrition due to its capabilities to promote nerve regeneration, facilitate neurotransmission, prevent glutamate-induced neurotoxicity and provide neuronal protection. Nonetheless, no studies have ever been conducted to uncover the potential of Mecobalamin as a treatment for CRPS type 1.

Objectives: The objective of the article is to evaluate the effects of Mecobalamin on the functional outcomes in patients with complex regional pain syndrome (CRPS) type 1 of the foot and ankle.

Methods: Forty seven patients diagnosed with acute CRPS type 1 of the foot and ankle were recruited. Patients were randomly allocated into a control group (23 patients) and a Mecobalamin group (24 patients). Three divided doses of mecobalamin 1.5mg/day were provided to the Mecobalamin group for the first 3 months, whereas a placebo was administered to the control group. Data was collected from the pre-treatment period, and from 1, 3, 6 and 12 months following the treatment.

Results: Both groups had similar demographics. The mean FAAM-ADL and FAAM-sport in the Mecobalamin group at 3 months were 74.5±17.9 and 56.3±22.9, respectively, whereas, the mean FAAM-ADL and FAAM-sport in the placebo group at 3 months were 62.2.5±15.2 and 43.4±14.9, respectively. There was a statistically significant difference ($p<0.05$) between the FAAM-ADL and FAAM-sport scores of the Mecobalamin group and those of the control group. There was a statistically significant improvement in the SF-36 Mental Health subscale score in the Mecobalamin group, compared to the control. Both the amount and duration of total Pregabalin used in the Mecobalamin group was significantly lower than the control group.

Discussion & Conclusion: This small study revealed a statistically significant improvement of the functional outcomes in patients with CRPS type 1 of the foot and ankle who received Mecobalamin instead of a placebo, as well as a statistically significant reduction in the amount and duration of total Pregablin used in the Mecobalamin group.

Keywords: mecobalamin, complex regional pain syndrome type 1, functional outcome

Abstract : OR-CT011

Level of Anti–Platelet Factor 4 Antibodies and Platelet Factor 4 Antigen after Heterologous Prime - Boost Vaccination with CoronaVac and ChAdOx1nCoV-19 in Thai.

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Background: Coronavirus disease 2019 is a serious infectious disease. Although the disease can be controlled by social distancing, immunization with vaccines is the method of choice to combat the pandemic. However, after vaccination, many patients have reported side effects, varying from minor effects such as headache and soreness at injection site to serious ones such as vaccine-induced thrombotic thrombocytopenia (VITT). VITT is a serious condition suspected to be caused by the release of the platelet factor-4 (PF4) antibody from platelets, which is, in turn, induced by vaccination, especially after AZ vaccine. Different types of vaccination may influence the unequal release of PF4.

Objectives: To compare plasma concentrations of PF4 after viral envelope vaccination among individuals who previously received different patterns of COVID-19 vaccine.

Methods: The study was a retrospective cohort that used banked plasma of vaccine acceptors at the time points before and 28 days after AstraZeneca vaccination (AZ). Subjects were divided into 3 groups according to the patterns of prior vaccination: those who had received one dose of AZ vaccine before (group AZ-AZ), those who had received one dose of Sinovac vaccination (SV) (group SV-AZ), and those who had received 2 doses of SV (group SV-SV-AZ). Plasma concentration of PF4 was quantitated by ELISA method. Statistical analysis was performed on GraphPad Prism, using Kruskal-Wallis test.

Results: A total of 60 participants were included in this study, 20 in each group. PF4 levels before and 28 days after the studied AZ vaccination did not differ in any groups. However, the study found that the SV-SV-AZ group had significantly lower baseline PF4 antibody levels when compared to the AZ-AZ group.

Discussion & Conclusion: Although AZ vaccination did not cause short-term release of PF-4 antibody, mixed vaccine type may give an advantage in reducing baseline antibody before AZ vaccination.

Keywords: platelet factor 4, immunization, Covid-19

Artificial Intelligence in Childcare: Assessing the Performance and Acceptance of ChatGPT Responses.

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Background: ChatGPT is gaining widespread acceptance for its ability to generate natural language sentences in response to various inputs. Most Japanese parents expect it as a parenting tool, but more information regarding its performance and acceptance is needed.

Objectives: This study aimed to evaluate the performance and acceptance of ChatGPT-3.5 and GPT-4 responses to Japanese childcare-related questions to assess their potential applicability and limitations in the childcare field, specifically focusing on the accuracy, usefulness, and empathy of the generated answers.

Methods: We evaluated answers in Japanese generated by GPT-3.5 and GPT-4 for two types of childcare-related questions. ① We calculated the correct answer rates for the written examination questions of Japan's childcare worker national examination for 2023's fiscal year. ② We selected one question from each of the seven categories from the child-rearing questions posted on the Japanese National Childcare Workers Association's website and had GPT-3.5 and GPT-4 generate answers. These were evaluated alongside existing childcare worker answers by human professionals. Five childcare workers then blindly selected the best answer among the three and rated them on a five-point scale for 'accuracy,' 'usefulness,' and 'empathy.'

Results: In the examination consisting of 160 written questions, both GPT-3.5 and GPT-4 produced responses to all 155 questions, excluding four questions omitted due to copyright concerns and one question deemed invalid due to inherent flaws in the question itself, with correct answer rates of 30.3% for GPT-3.5 and 47.7% for GPT-4 ($p<0.01$). For the child-rearing Q&A questions, childcare worker answers by human professionals were chosen as the best answer most frequently (45.7%), followed by GPT-3.5 (31.4%) and GPT-4 (22.9%). While GPT-3.5 received the highest average rating for accuracy (3.69 points), childcare worker answers by human professionals received the highest average ratings for usefulness and empathy (both 3.57 points).

Discussion & Conclusion: Both GPT-3.5 and GPT-4 failed to meet the passing criteria in Japan's childcare worker national examination. GPT-3.5 was rated higher in accuracy for the child-rearing questions despite lower correct answer rates. Over half of the childcare workers considered the ChatGPT-generated answers the best, yet concerns about accuracy were observed, highlighting the potential risk of incorrect information in the Japanese context.

Keywords: ChatGPT, GPT-4, GPT-3.5, artificial intelligence

Abstract : OR-CT014

Cost-Effectiveness Analysis of Full-Thickness Resection Device for Small Gastric Subepithelial Lesions.

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Background: Endoscopic full-thickness resection using a Full-Thickness Resection Device (FTRD) has emerged as a novel minimally-invasive endoscopic technique to treat small subepithelial lesions (SEL), particularly gastrointestinal stromal tumors (GIST) which are the most common gastric SEL with malignant potential. However, international guidelines remain ambiguous on the management of gastric SEL ≤ 2 cm and the cost-effectiveness of FTRD versus standard endoscopic surveillance has not been proven.

Objectives: To evaluate the cost-effectiveness of FTRD for managing small gastric SEL ≤ 2 cm compared with the standard endoscopic surveillance.

Methods: A provider's perspective cost-utility analysis was performed using a decision tree combined with the Markov model. The study population is patients with gastric SEL ≤ 2 cm. Quality-adjusted life year (QALY) and event probabilities used in the model were gathered, prioritizing the Asian population from the literature. The cost was estimated mainly from The Comptroller General's Department. Assuming the most prevalent diagnosis of gastric SEL is GIST, three therapeutic approaches were analyzed, including (i) FTRD; (ii) Endoscopic surveillance with biopsy at the time of diagnosis, and (iii) Conventional endoscopic surveillance for tumor progression. The incremental cost-effectiveness ratio (ICER) of 160,000 Baht per QALY based on Thailand's willingness-to-pay threshold was used to determine the cost-effective scenario. One-way sensitivity and threshold analyses were performed to explore the uncertainties and identify scenarios where FTRD is cost-effective.

Results: Based on Thailand's willingness-to-pay threshold, FTRD was cost-effective in females but not males (ICER: 146,431 and 167,972 Baht per QALY, respectively). For male patients, surveillance with biopsy at the diagnosis was cost-effective (ICER: 94,931 Baht per QALY). Threshold analysis showed that FTRD would be cost-effective in male patients if FTRD's R0 resection rate increases to at least 78.7% (Current efficacy: 76.0%) or the price of FTRD decreases to 63,000 Baht (Current price: 65,000 Baht).

Discussion & Conclusion: FTRD is a cost-effective strategy for managing small gastric SEL and could be practically applied to the Thai population with a small gastric SEL of unknown histology especially in females whose average life expectancy is longer than males, hence the longer duration of surveillance. The burden of not knowing definite diagnosis may outweigh the additional cost FTRD provided.

Keywords: full-thickness resection device (FTRD), cost-effectiveness, endoscopic surveillance, gastrointestinal stromal tumor (GIST), subepithelial lesion

Abstract : OR-CT015

The Efficacy of Ultrasound-guided Hydrostatic Reduction in Managing Delayed Presentation of Childhood Intussusception: A Single Center Experience.

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Background: Childhood intussusception is a common surgical emergency. The current practice for non-operative management in Sri Lanka is ultrasound-guided hydrostatic reduction (USGHR). This retrospective study aims to demonstrate the efficacy and safety of this procedure even in a setting of delayed presentation.

Objectives: To assess the outcomes and success rate of USGHR in the management of uncomplicated intussusception, in a single center.

Methods: We explored outcomes of USGHR in the management of intussusception in children presenting to a single tertiary care center in Sri Lanka, between November 2019 and March 2021. Hydrostatic reduction was performed in patients with radiologically confirmed intussusception in the absence of contraindications. In failed attempts or early recurrences, USGHR was repeated for a maximum of 2 more attempts.

Results: Our study included 135 participants. Of the patients for which data on symptom duration was available 31.5% (n=41) presented delayed (t>48hrs). Hydrostatic reduction showed an overall success rate of 86.4%. No association was seen between time since onset of symptoms and success of USGHR ($p<0.05$). In 19 patients (14.1%) operative intervention was required. The rates of operative intervention were comparable between those presenting within (12.4%) and after 48 hours (12.2%). One case (0.7%) of bowel perforation and 1 case of peritonitis (0.7%) occurred in those presenting within and after 48 hours respectively.

Discussion & Conclusion: The success rate of USGHR was high despite delays in patient presentation. Thus, hydrostatic reduction is a safe, effective procedure to be performed as the first-line management option in childhood intussusception even in a setting of delayed presentation. Overall success increases with repeat reduction.

Keywords: ultrasound-guided hydrostatic reduction, childhood intussusception

Abstract : OR-CT016

The Application of TM4SF1 CAR-NK Driven by PSA SynNotch Gene Circuit in Prostate Cancer Therapy.

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Background: Castration-resistant prostate cancer (CRPC) is a prevalent malignancy that poses substantial harm to males. Adoptive cell transfer (ACT), which involves the genetic modification of autologous T cells to express chimeric antigen receptors (CARs), offers a promising therapeutic approach for CRPC. However, effectiveness of ACT is hindered by the immunosuppressive tumor microenvironment. While the expression of superkines in ACT cells can activate transferred cells within the tumor, the risk of cytokine storm is concerning. Therefore, the utilization of a gene circuit to achieve precise delivery of superkine can enhance the efficacy of ACT while maintaining its safety.

Objectives: The Western blotting was employed to analyze expression pattern of TM4SF1 in both non-CRPC and CRPC.TM4SF1 is extensively expressed in CRPC. To enhance the safety and efficacy, a CAR structure was devised and modified using the PSA SynNotch logic gate, with the aim of regulating TM4SF1 and achieving improved therapeutic outcomes.

Methods: The CAR targeted TM4SF1 was connected to the IL2-H9T sequence by T2A peptide to form a polycistronic structure. SynNotch that recognizes PSA is formed by the PSA scFv, Notchcore and Gal4-TF. Established CAR-NK cell lines and evaluated the activation efficiency of the gene circuit. Established LNCap cell lines which secrete inhibitory cytokines IL-10 and TGF-β. Then the killing efficiency of PSA SynNotch CAR-NK cells was measured in vitro and in vivo. The safety of the transferred cells was evaluated in a humanized mouse model.

Results: TM4SF1 exhibited a high positive rate in CRPC. Leveraging this finding, we constructed the PSA SynNotch CAR-NK cell line, which exhibited inducibility by PSA at concentrations exceeding 10 ng/mL, resulting in CAR expression and H9T secretion. Co-culturing with prostate cancer cells, PSA SynNotch CAR-NK cells effectively killed PSA+TM4SF1+ LNCap cells, while displaying minimal cytotoxicity towards PSA-TM4SF1+ PC3 cells. Moreover, when PSA SynNotch CAR-NK cells were co-transplanted with PBMCs into NCG mice, no significant GvHD effects were observed. In contrast, NCG mice co-transplanted with TM4SF1 CAR-NK cells, continuously secreting H9T, experienced weight loss and intestinal damage.

Discussion & Conclusion: TM4SF1 CAR-NK cells, regulated by logic gates, demonstrate the ability to sustain cytotoxic activity within the immunosuppressive microenvironment while also exhibiting favorable safety profiles.

Keywords: TM4SF1, CAR-NK, synnotch, synthetic immunology, prostate cancer

Abstract : OR-CT018

Factors Associated with Hypertensive Patients Treated in Noncommunicable Disease Clinic, Bang Nam Priao Hospital, Chachoengsao Province, Thailand.

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Background: Hypertension is a serious medical condition and can increase the risk of heart, brain, kidney and other diseases. It is one of the leading causes of premature death worldwide.

Objectives: To study factors associated with hypertension (HT) in patients at Noncommunicable diseases (NCD) clinic, Bang Nam Priao Hospital.

Methods: A case-control study was done. Data were retrieved from the patient who attended the NCD clinic between January1, 2022 and December 31, 2022 using HOSxP system. A total of 7,301 patients were divided into 2 groups, with and without HT. The definition of HT was blood pressure(BP) $\geq$ 140/90 mmHg. Sample size calculation for comparing two independent proportions was used. Simple random samplings of 1,744 were done in both groups. Those with HT and normal BP were labeled as the case and control groups. Descriptive and inferential statistics as Pearson's Chi-squared test and multivariate logistic regression were used in the analysis utilizing SPSS version 22.

Results: Factors which significantly associated with HT in this study were elderly (OR=1.88, 95% CI = 1.64-2.16), overweight/obesity (OR=1.31, 95% CI = 1.14-1.52), chronic kidney disease (CKD) (OR=1.33, 95% CI =1.09 -1.62), diabetes mellitus (DM) (OR=0.48, 95%CI = 0.42-0.55) and dyslipidemia (DLP) (OR=0.53, 95%CI = 0.46-0.62). Gender, smoking, and alcohol drinking showed no association with HT. After adjusted by logistic regression, the adjusted OR (95% CI) of elderly was 2.03(1.75-2.35), overweight/obesity 1.82(1.55-2.13), DM 0.36(0.31-0.42) and DLP 0.44(0.37-0.52).

Discussion & Conclusion: Aging, obesity, DM and DLP were factors associated with HT**.** Atherosclerosis due to aging whereas obesity caused alterations in adipose-derived cytokines, insulin resistance, and renal changes leading to HT. Thus, recommendation for prevention of the modifiable risk factors such as weight reduction in obese patients, treatment of other related diseases could help decrease the risk of HT and the following serious morbidity and mortality.

Keywords: associated factors, hypertension, non-communicable disease clinic

Abstract : OR-CT021

The Significance of Gastrokine-1 Polymorphism rs4254535 as a Prognostic Factor and its Association with Clinical Characteristics in Chinese Lung Cancer Patients

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Background: Lung cancer is the primary cause of cancer death. The single nucleotide polymorphism (SNP) of Gastrokine-1 (GKN1) is associated with lung cancer but its relationship with prognosis of lung cancer is not clear.

Objectives: Collect clinical information of primary lung cancer patients and analyze the association between GKN1 rs4254535 polymorphism and prognosis of lung cancer patients. Research the mechanism of the relation, explore the probability of establishing the model to predict the prognosis of lung cancer patients and provide effective reference for clinical treatment.

Methods: Genomic DNA was extracted from the blood samples of 888 patients diagnosed with primary lung cancer from Chinese Han population before treatment. The association between GKN1 polymorphism rs4254535 and prognostic outcome was analyzed by Kaplan-Meier (KM) method, Log-rank test, and Cox proportional hazards model.

Results: In female and patients diagnosed with late-stage lung cancer, the mutant CC genotype (CC vs TT, adjusted odds ratio [HR] = 0.57, 95% Confidence Interval [CI]: 0.33-0.99, P = 0.045; HR= 0.66, 95% CI: 0.48-0.92, P = 0.014) and recessive CC genotype (CC vs TT + TC, HR = 0.55, 95% CI: 0.32-0.94, P = 0.028; HR= 0.64, 95% CI: 0.47-0.89, P = 0.006) of GKN1 rs4254535 conferred better prognosis, compared with the TT and TT + TC genotype. The dominate TC + CC genotype, recessive CC genotype and C allele who were lung adenocarcinoma patients had a significantly better prognosis. The recessive CC genotype of non-smoking patients has a better prognosis, compared to the TT + TC genotype. Additionally, in the dominant TT + TC genotype and C allele, no family history patients had a significantly better prognosis, compared to the TT genotype.

Discussion & Conclusion: For Chinese Han primary lung cancer patients, GKN1 polymorphism rs4254535 may be a protective genetic factor and predicts the prognosis of lung cancer patients.

Keywords: GKN1, rs4254535, lung cancer, single nucleotide polymorphism, prognosis

Abstract : OR-CT022

Regional and Subphase Gait Analysis Provides More Insight for loading Characteristics of Post-Stroke Patients.

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Background: Post-stroke patients have a gait impairment which impacts to their quality of life. The effects on gait in post-stroke patients depend on the severity of disease. The common issues found in post-stroke gait are the difficulties in foot clearance during swing and stability during stance. To improve the quality of hemiplegic gait, post-stroke gait patterns are necessary to understand and a gait training is required.

Objectives: This study determined the difference of foot loading characteristics in six-foot regions and three subphases between hemiplegic patients and healthy participants.

Methods: The plantar pressure data using the in-shoe pressure sensors, Pedar® system, were obtained from 15 hemiplegic patients and 15 healthy subjects. Foot regions were divided into 6 areas as medial forefoot, lateral forefoot, medial midfoot, lateral midfoot, medial rearfoot and lateral rearfoot. The subphases during a stance phase were classified as first double support, single support and second double support. The difference of foot loading parameters between paretic and non-paretic sides in hemiplegic patients were analyzed and compared with healthy subjects.

Results: During the first double support of hemiplegic patients, mean plantar pressure was significantly higher on non-paretic than paretic sides in a medial rearfoot, a lateral rearfoot and a medial midfoot. During the single support of a normal group, all parameters showed no significant differences between left and right sides. While non-paretic side of hemiplegic patients had significantly greater maximum plantar pressure than paretic side in a medial midfoot and a medial forefoot. Mean plantar pressure was significantly different between paretic and non-paretic sides in a lateral rearfoot and a medial forefoot. For the second double support, all parameter were significantly higher on non-paretic side than paretic side in a medial forefoot whereas mean plantar pressure and mean force had significantly lower on non-paretic compared to paretic sides in a lateral midfoot and a lateral rearfoot.

Discussion & Conclusion: The differences of plantar pressure between paretic and non-paretic sides in a hemiplegic group were greater than that in a healthy group, especially in a lateral midfoot during a second double support. These differences can be further analyzed to use as a feedback indicator for post-stroke gait training.

Keywords: post-stroke patients, hemiplegic gait, plantar pressure

Abstract : OR-CT024

The Use of AI in Screening for Left Ventricular Hypertrophy by Analyzing Paper-Based ECG.

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Background: Left ventricular hypertrophy (LVH), is a condition characterized by the thickening of the walls of the left ventricle, which is the main pumping chamber of the heart responsible for supplying oxygenated blood to the body. Current screening methods, such as the Sokolow-Lyon Index, are associated with time consuming procedures and exhibit a limited degree of sensitivity.

Objectives: The aim of this study is to apply the use of deep learning for early detection and screening of LVH using 12-lead ECGs, investigating whether deep learning can be an accurate tool for screening for LVH, in comparison to the Sokolow-Lyon Index. This study also aims to produce a tool that is adaptable for use in settings with limited resources and could be employed in environments where only conventional equipment is available.

Methods: Deep learning models such as ResNet50 on ECG files were utilized in order to develop a screening tool. The recordings from 93 patients with hypertension aged (18-80) were obtained from the KMITL University Clinic (KMCH). The physical ECG papers were then scanned and converted into jpg files. The images were processed and separated into individual leads: V1, V5, and V6. Echocardiograms were used to verify LVH in each patient. The sensitivity and specificity were calculated and compared to the Sokolow-Lyon Index.

Results: The accuracy of the deep learning model in screening LVH was 62.5% (sensitivity: 91.15%, specificity: 24.49%), which was significantly better than that of the diagnoses made with the Sokolow-Lyon Index with an accuracy of 0% (sensitivity: 0%, specificity: 100%), as the Sokolow-Lyon Index was not able to detect any of the positive LVH cases in the dataset in this study.

Discussion & Conclusion: While not definitive, this study provides preliminary evidence supporting that a deep learning model could be a viable tool in screening for LVH, in comparison to the Sokolow-Lyon Index. Further datasets are required to improve upon our model.

Keywords: ECG, LVH, deep learning, AI, screening, paper-based ECG

Abstract : OR-CT025

Comparison of Psychosocial Distress between Adult and Adolescent and Young Adult (AYA) Cancer Patients.

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Background: Adolescent and young adult (AYA) patients are defined as those aged between 15 and 39 years. During cancer treatment, they face unique challenges due to developmental milestones, social pressures, and potential long-term side effects of treatment. Research on AYA psychosocial needs is limited, especially in the Asian context.

Objectives: This study aims to address this gap by comparing psychosocial distress in AYA against adult cancer patients in Singapore. It also seeks to provide insights for tailored support during treatment based on the distinctive needs of AYA patients in different life stages.

Methods: This is a prospective, longitudinal study. We used the Accessible Cancer Care to Enable Support for Cancer Survivors (ACCESS) model to recruit breast and gynecological cancer patients aged 21 years old and above. They completed the National Comprehensive Care Network (NCCN) Distress Thermometer and Problem List, which assesses distress scores out of 10 and a list of psychosocial problem domains (Physical, Emotional, Practical, Family/Relationship, Spiritual/Religious). Data was analyzed using STATA 17.

Results: A total of 2325 patients were recruited, including 2238 non-AYA (i.e. aged 40 and above) and 87 AYA. The median distress score was 0 among the non-AYA while it was 1 among the AYA, out of a total score of 10. The most significant domains with reported problems are, for non-AYA and AYA respectively: physical (71.1%, 74.7%), followed by emotional (36.5%, 49.4%), practical (28.1%, 36.8%), family/relationship (6.8%, 17.2%), then spiritual/religious (5.5%, 6.9%). The differences for family/relationship and emotional domains are significant ($p<0.001$ and $p = 0.014$ respectively). Out of the 87 AYA survivors, 55 of them reported low distress thermometer scores while 32 reported high distress thermometer scores (i.e. score of 6/10 or more). Of note, the median time since the latest cancer diagnosis was 1 year (IQR: 0-3 years) for the low-distress group as compared to 0.5 years (0-3.5 years) for the high-distress group.

Discussion & Conclusion: Our study sheds light on the emotional burden different age groups of cancer patients experience, and delves into detail about the specific problems they encounter. This guides intervention efforts to address the psychosocial needs of those with cancer.

Keywords: adolescent and young adults, cancer, psychosocial distress

National Outcomes of Acute Myocardial Infarction-Cardiac Arrest in Patients with End-Stage Renal Disease: A Retrospective Study in the United State 2005-2014.

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Background: Acute myocardial infarction-cardiac arrest (AMI-CA) is a life-threatening condition among patients with end-stage renal disease (ESRD). The associated factors, data trends, and hospital admission resource utilization for AMI-CA remain limited.

Objectives: To assess the temporal trend, the associated factors, and utilization for AMI-CA among patients with ESRD in the United States.

Methods: We used the National Inpatient Sample database to identify a sample of 53,970 acute myocardial infarction (AMI) among patients with ESRD from 2005 to 2014. The primary outcomes were temporal trends as well as the associated factors for AMI-CA. We analysis trends test by using Cochran-Armitage and linear exact test for trend. We estimated odds ratios from multi-level mixed effect logistic regression clustering effects at the hospital's census region or division, ownership/control, location/teaching, and bed size levels to identify factors associated with AMI-CA adjusted with comorbidity confounding scores from 29 Elixhauser Comorbidity variables.

Results: Overall, AMI-CA was 3,412 (6.3%) of AMI-CA in ESRD. AMI-CA increased from 4.6% in 2005 to 6.8% in 2014 (P for trend < 0.001). In AMI-CA was an increase trend in in-hospital mortality (P for trend < 0.001), coronary angiogram (P for trend < 0.001), percutaneous coronary intervention (P for trend < 0.001), mechanical ventilator use (P for trend < 0.001), mechanical circulatory support (P for trend 0.002), length of hospital stays (P for trend 0.017), and hospitalization cost (P for trend < 0.001). On multivariable analysis, comorbidity confounding scores (OR 1.19, 95%CI 1.06-1.33), pulmonary vascular thromboembolism (OR 1.60, 95%CI 1.09-2.35), metabolic acidosis (OR 1.18, 95%CI 1.05-1.33), organ failure included respiratory (OR 9.53, 95%CI 8.29-10.57), neurologic (OR 3.60, 95%CI 3.19-4.06), and hepatic failure (OR 1.79, 95%CI 1.48-2.17) associated with AMI-CA, whereas older age was inverse associated with AMI-CA in ESRD patients (OR 0.99, 95%CI 0.98-0.99).

Discussion & Conclusion: There was a significant increase in resource utilizations, hospital mortality among subgroup AMI-CA in ESRD patients. Several associated factors for AMI-CA were identified.

Keywords: acute myocardial infarction-cardiac arrest, end-stage renal disease, elixhauser comorbidity, nationwide, hospital outcomes

Abstract : OR-CT028

Bioinformatic Transcriptome Analysis Revealed Potential Mechanisms and Candidate Molecular Biomarkers in Breast Cancer.

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Background: Breast cancer proposes as one of the clinical challenges, as the current clinical understanding on transformation of normal breast development to malignancy remains unclear. Therefore, by studying the biological alterations and important pathways, it could provide more information on mechanisms and molecular biomarkers in breast cancer. Since peripheral blood mononuclear cells (PBMCs) can enter the peripheral tissues including the tumor site, receive paracrine interaction, and potentially undergo cancer promotion and aggressiveness; but the study about biomarkers have not fully been understood and discovered.

Objectives: The purpose of this study is to investigate the biological alterations and important pathways in breast cancer and to explore screening molecular biomarkers from PBMCs in breast cancer patients.

Methods: Gene expression microarray data were gathered from GEO datasets and analyzed by using GEO2R. Each dataset used statistical cut-off at p-value < 0.05. Differentially Expressed Genes (DEGs) were applied for biological functions and enrichment pathway analysis by using DAVID and KEGG databases. Protein-protein interaction (PPI) network was constructed and hub-genes were selected by using NetworkAnalyst. Furthermore, hub-genes were implied to GEPIA2 database for biomarker verification in breast cancer patients.

Results: From our analysis, the DEGs were used for GO and KEGG pathway analysis. Cellular metabolism, chemical carcinogenesis, cellular signaling were enriched in GO analysis. Splicing pathway was the most significant pathway, which might have a key role in breast cancer. For PPI and Hub-gene identification, SH3GL3 was selected to be the hub-gene, which has a high centrality betweenness score and showed down-regulation status in the cancer group. The patient's PBMCs and breast cancer intersection revealed five genes: *ALDH1L1, ELAVL1, ARHGEF15, CFL1* and *PGK1*.

Discussion & Conclusion: Breast cancer might involve altered metabolic pathways, which potentially interfere with the therapeutic outcomes. Genetic splicing could serve as a therapeutic target in the future. SH3GL3 shows down regulation in breast tissue samples with the evidence of tumor suppression in other cancer types. Additional validation is required. The identified 5 PBMCs genes had significant differences in expression among normal and breast cancer samples. These could serve as screening markers, but could not infer cancer stage and prognosis.

Keywords: bioinformatic analysis, gene expression analysis, breast cancer, peripheral blood mononuclear cells (PBMCs), molecular biomarker

A Study of Perforation Pattern to Enhance The Adhesion of Bone Cement in Total Knee Arthroplasty Using Finite Element Analysis.

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Background: Total knee replacement is a highly effective treatment option for osteoarthritis. This treatment involves the use of bone cement to strengthen binding between knee arthroplasty components and the proximal tibia. The effectiveness of this adhesive attachment is primarily affected by the surface properties of the tibial bone. Notably, subchondral sclerosis frequently results in a dense and smooth tibial bone surface, which reduces the quality of adhesion between the bone cement and tibial surface. To improve adhesive performance, perforations are made on the tibial surface to enhance both surface roughness and the contact area, contributing to the enhancement of adhesive quality.

Objectives: The primary goal of this study is to investigate the effects of various drilling configurations, including hole placement, diameter, depth, and quantity, and then optimize the drilling configuration using finite element analysis.

Methods: Three-dimensional models of total knee replacement for osteoarthritis treatment were generated to investigate the effects of various hole configurations, including seven distinct hole placements, hole diameters varying from 2 to 4.5 mm, and hole depths varying from 3 to 5 mm. The findings of this study were quantified in terms of von-Mises stress and relative contact surface motion.

Results: The results illustrated that various configurations did not produce detectable changes in von-Mises stress, but they notably influenced the motion observed at the contact surface. The minimum of tangential relative motion was observed at hole diameter of 2 mm, a hole depth of 5 mm, and the hole position 3.4 mm away from the optimal point predicted by multivariable regression. All these configurations resulted in relative motion at the contact surface of 4-5 micrometers.

Discussion & Conclusion: Regarding hole diameter and depth, a decrease in relative motion at the contact surface is observed when using smaller diameters and deeper holes. In terms of hole position, the reduction in motion is determined by the hole's proximity to the predicted optimal point. In summary, the most effective hole configuration is one that is close to the predicted optimal point and has a diameter of 2 mm and a depth of 5 mm. Further research will be conducted to determine the appropriate number of holes.

Keywords: total knee arthroplasty, osteoarthritis, bone cement, finite element analysis

Factors Associated with Tocolysis Failure Among Pregnant Women with Preterm Labor in Phayao Hospital: A Retrospective Cohort Study.

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Background: Preterm labor is a major cause for complications in infants. The use of Tocolytic drugs is therefore a goal of delaying preterm birth, but it can only partially delay preterm birth. Therefore, there will be some factors that affect the unsuccessful inhibit of labor.

Objectives: To assessing factors associated with the Tocolytic failure among pregnant women diagnosed with preterm labor and to assessing the incidence of failed inhibit of labor in Phayao Hospital.

Methods: A retrospective cohort study was conducted and collected data from medical records during January 2018 to December 2022. The sample were all pregnant women who were diagnosed preterm labor and receiving Tocolytic drugs, divided into the group of 63 women were unsuccessful inhibition and 418 women were successful inhibition. General data were analyzed by descriptive statistics, namely number, percentage, mean and standard deviation. Univariable and multivariable logistic regression analysis were interpreted with Adjusted odds ratio; 95% confidence interval (CI), p-value < 0.05.

Results: The findings indicated that factors associated with unsuccessful inhibition were found in pregnant women of age above 35 years old (AOR 2.02, 95%CI:1.04-3.94), history of preterm labor (AOR 2.90, 95%CI:1.14-7.38, history of caesarean section (AOR 2.13, 95%CI:1.09-4.16), multiple pregnancy (AOR 3.73, 95%CI:1.25-11.06), cervical dilatation≥ 3 cm (AOR 5.56, 95%CI:1.88-16.37), cervix effacement≥ 80% (AOR 14.42, 95%CI:4.85-42.81) and incidence of unsuccessful inhibit of labor was 13.10%.

Discussion & Conclusion: The significant associated factors relating to unsuccessful inhibition were pregnant women of age above 35 years old, history of preterm labor, history of caesarean section, multiple pregnancy, cervical dilatation≥3 cm, cervical effacement≥ 80% and incidence of unsuccessful inhibition was 13.10%. These are developed as screening guidelines and give advice to continue the pregnancy until the end of term.

Keywords: tocolysis failure, preterm labor, cohort study

Abstract : OR-CT031

Barriers and Enablers to Diabetic Retinopathy Screening in Diabetic Patients: A Mixed Methods Study in a Thai Community Hospital, Thalaung District, Lopburi Province, Thailand.

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Background: Diabetic retinopathy is a common complication among diabetes patients, leading to visual impairment and even blindness if left untreated. Annual screening for diabetic retinopathy is essential to detect and manage the condition effectively. However, a significant number of diabetes patients still do not undergo regular screening.

Objectives: This study aimed to investigate the prevalence and factors associated with the lack of diabetic retinopathy screening in a community hospital in ThaLuang District, Lopburi Province, Thailand.

Methods: This mixed-method study used data from a community hospital in Tha Luang District, Lopburi Province, between October 1, 2022, and May 1, 2023. It collected data on diabetes duration, comorbidities, retinopathy screening history, and relevant factors. Additionally, 15 interviews were conducted with non-participating patients to identify reasons for their lack of retinopathy screening.

Results: Among the 1,981 patients studied, 51.64% had undergone retinopathy screening, while 48.36% had not. Of these, 17% were found to have diabetes retinopathy. Various factors, including gender, residential area, duration of living with DM, and body mass index, were found to be associated with the lack of screening. Interviews revealed reasons such as having other important commitments, the screening system's accessibility, and the absence of DM retinopathy literacy. Interestingly, patients demonstrated a good understanding of the importance of living with DM but retinopathy screening.

Discussion & Conclusion: Providing proactive screening for diabetic retinopathy through diabetic eye screening in community hospital mobile units has improved the efficiency of retinopathy screening in patients with DM. However, there are interconnected individuals, family members, and local health systems factors that have an effect on participating patients in the Non-DR screening campaigns. It is crucial to train and educate medical providers about diabetes and its complications to empower diabetic patients for better self-care and a higher quality of life. Additionally, there should be enhanced coverage in notifying and scheduling appointments for diabetic eye screening. Customized diabetic retinopathy screening campaigns, facilitated by community health volunteers and local hospital support, can enhance patient knowledge and awareness. Implementing economically and gender-sensitive methods may boost screening service uptake in this area.

Keywords: diabetic retinopathy, DR literacy, residential area

Abstract : OR-CT032

Discriminative Ability of Using C-reactive Protein and Serum Lactate for Predicting Early Onset Neonatal Sepsis at 72 Hours.

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Background: Neonatal Sepsis is one of the most important causes of neonatal mortality. In Thailand, early onset neonatal sepsis (EONS) affects 1.2% of newborns. Previous research highlights C-reactive protein (CRP) and serum lactate (SL) as potential prognostic laboratory markers, but their integration with routine clinical signs/symptomps remains debated. The present study aims to clarify their role, improving EONS detection and clinical practice.

Objectives: To assess the discriminative ability of using CRP and SL in addition to clinical signs/symptoms to predicting EONS at 72 hours of life in suspected newborns of sepsis.

Methods: A prognostic added-value research with retrospective cohort observation design of data collection was carried out in 284 newborns at in Neonatal Intensive Care Unit(NICU), Phare hospital, Thailand, between 2022 to 2023. Clinical signs/symptoms of mothers and neonates according to our guideline were collected such as gestational age, mode of deliveries, chest retraction. The definition of EONS (yes/no) were determined by pedriatricians with with the aid of hemoculture results. We used multivariable logistic regression analysis to explore the effect of all prognostic factors. The discriminative ability was assessed by area under ROC (AuROC) at 95% confidence interval (CI). AuROC from two models (Model 1: routine clinical sings/symptoms, and Model 2: routine clinical sings/symptoms plus CRP and SL) were compared. R Studio was used for all statistical analyses.

Results: Prevalence of EONS in the study was 40.4%. Potential clinical signs/symptoms were fever in neonates (OR=1.22; 95%CI: 0.68-2.18), chest retraction (OR=2.13; 95%CI: 1.32-3.47), gestational age <35 weeks (OR=1.74; 95%CI: 0.56-5.55), high respiratory rate (OR=1.17; 95%CI: 0.71-1.94), high heart rate (OR=1.09; 95%CI: 0.21-5.03), and high white cell counts (OR=1.61; 95%CI: 0.91-2.88). The AuROC of these diagnostic determinants in combination (model 1) was 67.3% (95% CI 60.5-73.7). After including CRP and SL in the analysis (model 2), the AuROC was 71.5% (95% CI 63.30-79.1). There was a weak negative correlation between CRP and SL (r=0.26; 95%CI: -0.63 to 0.21).

Discussion & Conclusion: Incorporating serum C-reactive protein and serum lactate alongside clinical signs and symptoms lacks conclusive evidence in enhancing neonatal sepsis prediction.

Keywords: early onset neonatal sepsis, C-reactive protein, serum lactate, prognostic research

Abstract : OR-CT033

Web Application Using Machine Learning Technique for Failure Treatment Outcome Prediction of Pulmonary Tuberculosis.

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Background: World Health Organization (WHO) have reported that Tuberculosis (TB) was the second worldwide leading infectious killer after COVID-19 in 2021. Recently, TB in Thailand continues to be a significant health challenge with a 12% reduction rate, farther from 20% milestone rate of 2020, particularly Pulmonary tuberculosis (PTB) is concerned as a continuing surge. Even though curative therapy is readily accessible, PTB failure treatment outcome remains as a main problem. It is necessary to have advanced tools and innovative technologies for early prediction of PTB outcomes.

Objectives: This study developed a novel web application designed for the prediction of PTB failure treatment outcome using a machine learning approach.

Methods: Data were acquired through the pulmonary tuberculosis cases in Bangkok under the National Tuberculosis Information Program (NTIP) database from 2018 to 2022. Our study investigates individual risk factors to predict the failure treatment outcome of PTB. We adopt three predictive machine learning models. Gradient Boosting Classifier (GBC), Logistic Regression (LR), and Random Forest Classifier (RF) were tested and evaluated by computing their area under the curve (AUC), F1 score, and accuracy.

Results: Gradient Boosting Classifier is the best-performing predictive model (AUC: 0.832, F1 score: 0.751, accuracy: 0.750). In comparison with GBC, LR model provides AUC: 0.827, F1 score: 0.748, and accuracy: 0.751 while RF model provides AUC: 0.814, F1 score: 0.743, and accuracy: 0.744. In addition, five factors; AFB, age, HIV, weight, and hospital level, are identified as the best predictors in predicting the failure treatment outcome. As a consequence, a web application using machine learning techniques to classify patient treatment outcomes based on user-inputted patient properties is built and is accessible from the internet.

Discussion & Conclusion: Our study findings indicate that machine learning algorithms can identify opportunities of failure outcome with high AUC, F1 score and accuracy. PTB management should therefore concern about implementing the web application as a determined tool to screen individual failure treatment results, serving as a valuable way to raise awareness for healthcare practitioners, and increase the quality of offered healthcare service. This involves preparing for the enhancement of specialties' competence for TB patient caring and promoting a further TB guideline.

Keywords: pulmonary tuberculosis (PTB), web application, machine learning, gradient boosting classifier (GBC), prediction model, screening

Abstract : OR-CT034

ACE ID vs ACE DD Genotypes : An Experimental Study Comparing the Results of Endurance Training for 6 Weeks in Non-Athlete Student.

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Background: The Angiotensin-converting Enzyme (ACE) gene is a gene that plays a role in regulating blood circulation, homeostasis, and cell growth so the ACE gene can influence a person's physical activity and sports performance. However, the ACE gene has polymorphisms, namely insertions (allele I) or deletions (allele D). In the ACE gene associated with allele I, there is a decrease in ACE activity and an increase in the half-life of bradykinin, which increases the contractile ability of heart muscle and skeletal muscle, thus providing benefits in endurance training. Meanwhile, for the ACE gene associated with the D allele, an increase in angiotensin II activity was found, which helps increase muscle mass because it increases cell growth, thus providing benefits in strength-oriented training.

Objectives: This study compares six-week endurance training results in subjects with different ACE ID and ACE DD genotypes.

Methods: The research subjects were 17 non-athlete students aged 20-22 divided into two groups, namely the ACE ID genotype group of 10 people and the ACE DD genotype group of 7 people. Genotypic variants were identified using PCR from buccal cell samples. Initial data was taken in the form of the number of repetitions of push-ups and sit-ups for 3 minutes and plank by recording the time obtained by the subject. Next, they were given endurance training intervention for six weeks, then final data was taken, and changes in numbers were observed.

Results: It was found that all subjects experienced improvement. A total of 4 subjects experienced an increase in the number of push-ups above 20 repetitions (3 subjects with the ACE ID gene and one subject with the ACE DD gene), two subjects experienced an increase in the number of sit-ups above 35 repetitions (both ACE ID genes), and two subjects experienced an increase in the number of plank time above 1 minute (both ACE ID genes).

Discussion & Conclusion: The ACE ID genotype has more significant potential to increase endurance than ACE DD. Genetic data can be used to determine training orientation preferences.

Keywords: ACE gene, ACE ID genotype, ACE DD genotype, endurance training

Medical Education Research

Student-led Online Peer Support Programme in a Thai Medical. school.

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Background: The COVID-19 pandemic has led to social isolation and stigmatisation, which has increased psychological distress among medical students, making it difficult for them to seek face-to-face support. Online platforms have been vital in providing support, but creating an effective mental support system for medical students during the pandemic is challenging. Peer Support programmes involve people with similar experiences and backgrounds offering emotional and practical support to one another.

Objectives: This study looks into the implementation of the online Peer Support programme in a Thai medical school and its impact on medical students during the pandemic.

Methods: The Ramathibodi Peer Support Programme (Rama PSP) consists of two-hour weekly training for ten weeks, followed by one year of monthly supervision sessions. The programme provided online training to 12 peer supporters in the inaugural batch and 37 new peer supporters in the second batch. The training in the second batch was conducted by a group of alumni and evaluated using both quantitative and qualitative questionnaires, including PHQ-9 and GAD-7, and interviews throughout the programme. Student's t-test and Pearson's correlation coefficient were used to compare the results throughout the training.

Results: The Rama PSP score, which reflects the aptitude of peer supporters, increased from Week 1 to Week 10. The Rama PSP had limited impact on the peer supporters' underlying mental health. Rama PSP online training improved peer supporters' skills and knowledge. Peer supporters effectively applied the skills they learned among their peers and themselves. Alumni conducting peer teaching gave favourable responses, implying programme sustainability in the medical school. Three-month post-training interviews showed active listening and self-care are the two most common skills used in supporting others.

Discussion & Conclusion: Our study examined the outcomes of the first online Peer Support training in Thailand for medical students, filling a gap in the lack of evidence regarding the effectiveness of this approach. Our findings demonstrated that the Rama PSP successfully addresses the challenges of providing mental health support during the COVID-19 pandemic and highlights the potential for the programme's sustainability.

Keywords: peer support, peer teaching, mental health

Patients' Trust in External Characteristics of Physicians with Gender Diversity at Mae Fah Luang University Medical Center Hospital.

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Background: Thailand has witnessed an increase in the number of individuals with diverse sexual identities. However, this acceptance is not yet fully accepted and remains limited. This can be observed in the workplace and in professions such as medicine.

Objectives: This study aims to investigate patients' trust in physicians of diverse backgrounds and explore the connection between patients' general characteristics and their trust in physicians with varied genders.

Methods: In October 2022, a cross-sectional study was carried out at the Mae Fah Luang University Medical Center Hospital. The study participants comprised out-patients seeking medical treatment at the hospital. Information about their demographics and their trust levels in physicians with diverse genders was collected through questionnaires. To assess patients' confidence in gender diversity, questionnaire scores were utilized and categorized into two groups based on median values: the high-trust group and the low-trust group. The relationship between participants' characteristics and their trust levels was analyzed using multivariable logistic regression.

Results: The study enlisted 206 out-patients. It was revealed that a significant majority of the participants exhibited a trust level below the threshold towards physicians of diverse genders, with 113 individuals (54.85%) falling into this category. The statistical examination highlighted noteworthy associations, particularly in relation to age. Individuals aged between 20 and 25 years, belonging to Generation Z, demonstrated a heightened propensity for trusting physicians with diverse genders in comparison to other generational cohorts. Moreover, patients who had prior experiences of being treated by physicians with gender diversity exhibited higher trust levels in contrast to those without such encounters.

Discussion & Conclusion: The specific age groups defined by generational cohorts, along with prior encounters involving medical care provided by physicians of diverse genders, collectively exerted a positive impact on the level of trust extended towards such medical practitioners. This underscores the role of these variables in shaping trust dynamics within the healthcare realm, particularly in the context of gender diversity.

Keywords: gender diversity, trust levels, healthcare realm,

The Impact of Buddhism on Affective Religiosity and Its Role in Humanizing Medical Professionalism's Empathy.

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Background: Buddhism has played a vital role in shaping religion, spirituality, and empathy. Its teachings are relevant to humanized medicine, specifically in fostering empathy. Interestingly, there has been reported that doctors with more patient accessing time often show reduced empathy, which may affect doctor-patient relationships and better health outcomes. Thus, safeguarding a doctor's empathy is crucial. Some research suggests individuals with deeper religious experience tend to display higher levels of empathy. However, how Buddhism impacts medical professionalism's empathy haven't been extensively mentioned.

Objectives: We aim to study how Buddhism impacts medical professionalism's empathy.

Methods: The study employed various tools including Thanissaro Scale of Attitude towards Buddhism (TSAB), Duke University Religion Index (DUKE) for Buddhism embracement, and The Toronto Empathy Questionnaire for assessing empathy (EMP). Spiritual beliefs were gauged through SBRAME (Spiritual and Brazilian Medical Education). Data normality was confirmed using the Shapiro-Wilk test. Comparative analyses included t-tests to compare Medical students (MS) vs. Medical doctors (MD) and Buddhism practitioners (BP) vs. non-Buddhism practitioners (non-BP) in EMP, TSAB, spiritual beliefs, and patient accessing time (PAT). Multiple Linear Regression explored correlations among EMP, TSAB, AGE, SBRAME, DUKE, Religious practicing time and PAT.

Results: From 232 respondents, MD had significantly higher TSAB compared to MS ($p<0.05$), but no significant difference in EMP between MD and MS. BP scored significantly higher in both TSAB ($p<0.001$) and EMP ($p<0.01$) compared to non-BP. The overall regression significantly predicted empathy ($p<0.01$). It was found that TSAB significantly predicted ($p<0.001$), while PIT ($p<0.05$) and AGE ($p<0.05$) negatively related to empathy. The equation can be summarized as follows.

$$EMP = 36.699 + (0.370)TSAB - (0.131)PIT - (0.148)AGE$$

Discussion & Conclusion: Medical doctors may lean towards Buddhism, possibly influenced by their patient interactions. Conversely, Buddhism practitioners often exhibit more empathy due to their deep engagement in Buddhist practices. Our research reveals a positive connection between empathy and Buddhism, while patient interaction time and age negatively affect it. Doctor workloads lead to exhaustion, and as doctors age, they manage more patients, raising the risk of apathy. Therefore, we suggest incorporating Buddhism-related activities into hospitals and medical schools to elevate empathy levels, humanizing healthcare professionals in the process.

Keywords: buddhism, empathy, medical professionalism, humanized medicine, patient interaction time

Enhancing Equity in Collaborative Learning: Student Co-design Strategies for Introvert Inclusivity.

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Background: Collaborative approaches have played a critical role in improving positive learning outcomes, yet several studies have revealed the challenges and experiences of introverts during collaborative learning (CL).

Objectives: The study aims to identify the obstacles of introversion to CL and how others perceive them while promoting inclusivity and collaboration in medical education: co-design methodologies empowered by student engagement and professor validation to address the challenges.

Methods: Exploratory sequential mixed methods approach was used focusing upon (1) Purposive sampling of semi-structured interviews with second- and third-year students to reveal introverts' obstacles(N=11), (2) Quantitative data based on a questionnaire of perceived introverts' obstacles to CL developed from the interviews, (3) Introverts identified using the Maudsley Personal Inventory. Qualitative data were analyzed using inductive thematic analysis. The differences in means were calculated using ANOVA, and post-hoc analysis was done.

Results: Based on preliminary data, seven themes were developed: fear of responsibility and discomfort with leadership; shyness to express opinions; lower communication due to low intimacy; low self-esteem obstructs opinion expression; the need for stimuli before expressing an opinion; others' dominant roles diminishing the introverts' roles; and high energy needed in participation. A total of 86 students answered the quantitative questionnaire. Of these, 55.81% are males, and 43.02% are introverts. Introverts (4.08±0.32) exhibited higher mean scores than extroverts (3.76±0.39) that expressing an opinion within the group is related to the intimacy between members (p=0.035). Mean scores of “Like to interact between group members” were 2.78±0.45, 3.08±0.43, and 3.40±0.42 for introverts, ambiverts, and extroverts, respectively (F=8.956,p-value=0.011). Also, “Introverts would take less action if other members already expressed their opinions” had a higher mean score in introverts (4.46±0.27) than extroverts (3.72±0.33) (p=0.003).

Discussion & Conclusion: Although CL is classified as a higher order in the learning pyramid, introverts may struggle with this learning strategy without extrovert concerns. Extroverts' enthusiasm may dominate an introvert's presence. Intimacy between members encourages introverts to voice their opinions. According to the results, we proposed to arrange a subgroup of two- to three students following their preference in large group work to enhance the learning environment and lessen the dilemma.

Keywords: Interprofessional & Team Learning, equity, personality, perceptions, problem-based-learning

Abstract : OR-ME015

Evaluating the Impact of Palliative Care Education on Health Systems Performance in South-East Asian Nations: A Comparative Analysis.

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Background: As Thailand confronts rapid population aging, palliative care should be prioritized. Even with level 3a classification in palliative care, evidence consistently indicates that many medical practitioners often possess inadequate knowledge, which results in diminished confidence in their service delivery.

Objectives: This study seeks to investigate the intricate relationships between palliative care education and its delivery in Southeast Asian nations. It also aims to methodically identify educational strategies and pedagogic elements that can potentially enhance the effectiveness of palliative care service, laying the groundwork for future empirical investigations.

Methods: From 2022 to early 2023, a systematized narrative review was conducted. This review used terms on "palliative care education and service" across all 11 Southeast Asian countries in Medline, Embase, and Google Scholar. From this comprehensive search, 85 relevant articles were identified, offering comparative data and interdisciplinary perspectives on palliative care education and its subsequent delivery in the region.

Results: Despite the cultural and societal ties among Southeast Asian countries, distinct disparities in palliative care systems are observed. Countries including Singapore and Malaysia, with advanced level 4a palliative care classifications, serve as models of effective palliative care education. They have seamlessly integrated palliative care into their standard medical curricula, granting it the status of a vital subspecialty. Their education encompasses varied techniques, from structured lectures to practical sessions, leading to comprehensive evaluations. This emphasis on education not only caters to healthcare professionals but also emphasizes the broader societal importance of palliative care.

Discussion & Conclusion: Contemporary literature supports this perspective, underscoring the interconnected relationship between healthcare education, system efficiency, and public policy in shaping effective palliative care systems. It becomes evident that possessing clinical skills alone is inadequate when addressing the multifaceted challenges of an aging society. Therefore, a pressing need exists to increase societal awareness and cultivate a comprehensive understanding of the significance of palliative care.

Keywords: palliative care, palliative care education, palliative care service, south-east asian nations

Abstract : OR-ME016

Co-Created Introduction to Health Systems Course: A Transformative Approach for Empowering Medical Student Engagement through Early Exposure to Community Hospitals initiated by Medical Students and Faculty Staffs.

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Background: In response to the expressed interest of first and second medical students in a more comprehensive understanding of healthcare, the Faculty of Medicine Ramathibodi Hospital introduced a co-created course. Developed by medical students and supported by faculty staffs and directors from four community hospitals, the course sought to provide students with valuable insights from rural healthcare context.

Objectives: The course aimed to provide more than an introduction to health system science. It was designed to deepen student engagement in medicine, emphasize the value of experiential learning and provide a holistic view of the medical field. This encompassed an emphasis on social accountability and the development of skills essential for professional identity formation and sustained academic motivation.

Methods: A mixed-methods research approach was utilized to evaluate the course's impact. This incorporated pre- and post-test evaluations, reflective writings, and a 360-degree feedback mechanism, which included self-assessments, feedback from hospital directors, and inputs from multidisciplinary teams. The evaluation sought to determine the course's effect on students' understanding of social determinants of health, health service structures, and leadership within local healthcare environments.

Results: Quantitative assessments indicated a significant improvement in students' understanding of health systems ($Z = 3.1$, $p = .002$; effect size $r = 0.54$). Qualitative analyses of reflective essays and open-ended questions revealed an increased awareness of social accountability, insightful perspectives on the roles of physicians, an understanding of systems thinking, insights into leadership concepts, and an emerging interest in health systems research.

Discussion & Conclusion: This pioneering co-created course exemplifies the potential of the "student-staff partnership" in curriculum development. It provides a blueprint for future curriculum enhancements in medical education. By emphasizing social accountability and professional identity within a co-creative framework, the course demonstrates its potential to cultivate comprehensive healthcare professionals. The integration of the experiential learning cycle further underscores the course's transformative value for medical education.

Keywords: social accountability, health systems, early exposure, student engagement, student-staff partnership

Abstract : OR-ME017

The Relationship between Gender, Students' Adaptation and Its Coping Mechanism in First-year Medical Student.

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Background: First-year study especially in medicine is a challenge for students that leads to stress. To overcome this situation, students apply coping mechanisms which may be one of the defining factors of university life adaptation. The university should obtain information on students' adaptation and coping mechanisms to take further action in handling this problem.

Objectives: This study aimed to investigate the relationships between gender, adaptation and coping mechanisms using SACQ and Brief COPE to make recommendations to the university in guiding medical students through their transition period smoothly.

Methods: This study design is a cross-sectional study. Respondents are first-year International Class students of the Faculty of Medicine, Universitas Indonesia (batch 2022-2023). Informed consent and ethical clearance were obtained. Questionnaires used were validated SACQ and Brief COPE. Data was then analyzed using SPSS version 26.0.

Results: Thirty-six respondents participated in this study (20 (55.6%) female, 12 (33.3%) male and 4 (11.11%) prefer not to say). Gender does not have a significant impact on how individuals cope with stress, as measured by the BriefCOPE as well as adaptation, as measured by SACQ. Seven components between SACQ and Brief COPE yielded statistically significant results with a p-value of less than 0.05. A strong negative correlation was observed between Personal-Emotional Adjustment and Self-blame ($r = -0.593$, $p = 0$), Personal-Emotional Adjustment and Venting ($r = -0.417$, $p = 0.011$), Academic Adjustment and Behavioral disengagement ($r = -0.543$, $p = 0.001$), Personal-Emotional Adjustment and Behavioral disengagement ($r = -0.509$, $p = 0.002$), Academic Adjustment and Denial ($r = -0.334$, $p = 0.046$). Lastly, a significant positive correlation was observed between Institutional Adjustment and Religion ($r = 0.336$, $p = 0.045$), also Personal-Emotional Adjustment and the Use of Emotional Support ($r = 0.436$, $p = 0.008$).

Discussion & Conclusion: In summary, this study underscores the need for support in personal and academic adjustment for first-year medical students. By addressing these challenges, we can improve their overall well-being and learning experiences, ultimately enhancing their success during this crucial phase of education.

Keywords: first year, coping mechanism, adaptation

Zoom Fatigue Related to Online Learning Among Medical Students during the COVID-19 Pandemic: Prevalence, Predictors, and Association with Depression.

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Background: During the COVID-19 pandemic, the learning pattern of medical students was changed from onsite to online (video) learning. Some lecturers and students prefer the online class, given its flexibility. However, overuse of online learning may contribute to what has been called "Zoom fatigue" among learners.

Objectives: This study aimed to evaluate the prevalence of zoom fatigue related to online learning and determined predictors of zoom fatigue and its association with depression among medical students during the COVID-19 pandemic.

Methods: This cross-sectional study was conducted among Thai medical students from a large public university in Thailand. The online survey was administered among 1st to 6th-year medical students. Collected data included demographics, health behaviors, and data from the validated Thai version of the Zoom Exhaustion & Fatigue Scale (ZEF-T) and the Patient Health Questionnaire-9 (PHQ-9). Zoom fatigue and depression were defined as having ZEF-T >1 standard deviation and PHQ-9 >9, respectively.

Results: Of the 386 participating students, 221 (57%) were female, the mean age was 20.6 years, and the average number of zoom sessions was 2 times/day, with 83.7% of the students spending more than 1 hour/session. The prevalence of zoom fatigue was 14.3% (N = 55). By multivariable regression analysis, lower academic year ($p < 0.001$), and higher number of Zoom sessions ($p < 0.001$) were significant predictors for Zoom fatigue, while regular exercise ($p < 0.001$) and enough sleep ($p = 0.05$) were protective factors. The prevalence of depression was 69.7% which was significantly associated with Zoom fatigue ($p < 0.001$).

Discussion & Conclusion: During the COVID-19 pandemic with mandatory online learning, the prevalence of Zoom fatigue in medical students was substantial and was associated with depression. Reducing the online learning session, regular exercise, and enough sleep may help reduce zoom fatigue from online learning. The students in lower academic years should be closely monitored for zoom fatigue. Given the association with depression, the students with Zoom fatigue should be further evaluated for depression and provided with appropriate management.

Keywords: zoom fatigue, medical students, depression, online learning

Evaluation of Symptomatic Correlations of Burnout, Depression, Anxiety Disorders in Thai Medical Students.

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Background: Psychological distress is highly prevalent among medical students. Conventionally, psychological distress was conceptualized as a combination of symptoms stemming from a common underlying cause. However, recent studies reveal unique etiologies and neurological pathophysiology for each symptom, which often overlap across various mental disorders. In a novel approach, network analysis addresses these complexities by envisioning mental disorders as a network of interacting symptoms. Each symptom is represented by a node, with connections signifying how a symptom correlates with others. These correlations remain primarily unexplored in medical school settings. Understanding the root causes and triggers of mental disorders is crucial for enhancing interventions in medical education.

Objectives: This study aims to explore symptomatic correlations between burnout, depression, and anxiety disorders in Ramathibodi Medical School.

Methods: This cross-sectional descriptive study utilizes secondary data collected by faculty in May 2021 through an online survey involving 701 medical students studying at Ramathibodi Medical School. Survey items included the PHQ-9, Maslach Burnout Inventory, and GAD-7 to assess nine symptoms of depression, three aspects of burnout (*exhaustion*, *cynicism*, *reduced professional efficacy*), and seven symptoms of generalized anxiety disorder, respectively. Network analysis was applied to visualize and analyze symptomatic correlations using *strength* and *expected influence* centralities. This parameter identifies which symptoms are most likely to affect others, serving as a potential leverage point for targeted interventions.

Results: The network analysis revealed significant correlations between depression, burnout, and generalized anxiety disorder. Over half of the possible connections were significantly correlated (94/171: 54.97%). *Exhaustion* had the highest *expected influence* centrality (1.36). *Suicidal ideation* (PHQ9) was found to have the strongest correlation with *feelings of failure* (PHQ6) ($r=0.40$, $p<0.05$).

Discussion & Conclusion: Although burnout, depression, and anxiety are three distinct entities, they are closely related. Interventions targeting *exhaustion* could be a potential leverage point in reducing psychological distress. In particular, mitigating *feelings of failure* may reduce the risk of suicidal ideation. For example, interventions should focus on building student resilience and implementing systematic changes such as providing academic support or redesigning assessment methods. The network approach may deepen our understanding of mental disorders at the symptomatic level, aiding in designing more effective interventions for tackling psychological distress.

Keywords: mental health, network analysis, depression, burnout, anxiety

Abstract : OR-ME021

Utilizing Entrustable Professional Activities Concepts in Preclinical Years: Present Perspectives and Expectation for Future of Medical Students; A Mixed-method study.

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Background: Entrustable Professional Activities (EPA) concepts are decided to assess for entrusting learners with clinical responsibilities. Using EPA concepts covering 30 procedural skills required for general practitioners (2nd edition; 2020) during preclinical years might be a milestone to enhance students' procedural competencies.

Objectives: This study aims to explore students' evaluation of EPA concepts during preclinical years in the present and their expected level of competencies within 5 years.

Methods: A cross-sectional study was conducted on the 300 fourth-to-sixth-year medical students at Phramongkutklao College of Medicine by a five-level questionnaire covering 30 EPAs that students could judge their level after the preclinical years and their expectation in the next 5 years. Then 6 students were sampled to interview in each aspect thoroughly.

Results: The results from 204 students show that there was a significant difference in the evaluation of the present and the 5-year expectation. From the interview, students expected the cooperation between clinical and preclinical instructors especially from Medicine and Surgery departments to provide them with proper concepts and techniques of daily used basic procedural skills such as capillary puncture, venipuncture, and wound dressing which can enhance their confidence and competency in their clinical years.

Discussion & Conclusion: Taking the EPA as a milestone could help prepare the student for their clinical-year procedural competencies also, enhance their confidence and expertise. However, the preclinical course should include the EPA concept in just some basic procedures which are commonly used, uncomplicated, and not harmful. Also, the supervisor, simulation, and cooperation between clinical and preclinical instructors are important to improve their competency.

Keywords: entrustable professional activities (EPA), evaluation, preclinical years

Educational Environment Disruption during COVID-19 Era: Student Perception and Learning Support Adaptation.

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Background: Since 2019, the COVID-19 pandemic has disrupted the world, numerous courses have been halted. Adapting to the pandemic poses many opportunities and challenges in the medical education system. To alleviate the impact on medical students, many remarkable innovations have been developed.

Objectives: The goal of this study was to evaluate the impact of the COVID-19 pandemic on the educational environment (EE) of medical students at Phramongkutklao College of Medicine (PCM) in order to improve student perception and learning support adaptation.

Methods: A cross-sectional study was conducted on 208 recruits with an online five-point Likert scale questionnaire developed from DREEM-50. The 18 questions were divided into 5 factors: perception of learning (POL), perception of course organization (POT), academic self-perception (ASP), perception of atmosphere (POA), and social self-perception (SSP). The participants were asked for EE perception in 3 periods: before, during, and after the COVID-19 pandemic. Then, descriptive statistics and one-way ANOVA were used for data analysis at the 0.05 level of significance.

Results: Medical students consisted of 3 groups: premedical, preclinical, and clinical students (n = 78, 83, 47). In the study, the perception of EE in all students during the pandemic was significantly worse compared to before and after the pandemic (Mb = 70.77±9.80, Md = 65.88±10.95, Ma = 69.91±10.47, p = 0.001). The pandemic affected the premedical and preclinical courses; however, it did not affect the clinical year (p = 0.001, 0.028, 0.100). Also, the study found that POA, POL, and SSP were affected by the pandemic in all students (F = 35.596, 12.560, 5.302, p = 0.001, 0.001, 0.005).

Discussion & Conclusion: Although the learners perceived that EE during the pandemic was good, there was a significant impact from the transition to online classrooms. Especially in premedical and preclinical years, they had many case-based learning activities requiring more communication. Due to the quarantine, students lacked opportunities to develop interpersonal skills and were less able to concentrate on their studies than usual. As a result, their learning atmosphere was the most affected followed by their learning and social perception.

Keywords: Educational environment, Medical students, COVID-19 pandemic

Abstract : OR-ME023

Navigating Extracurricular Realms: Insights from Medical Students and Educators.

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Background: Incorporating extracurricular activities (EAs) into the educational landscape include a wide spectrum, ranging from academic-related and sports to arts and social volunteering. Engaging in EAs plays a pivotal role in fostering holistic learning experiences and nurturing a various of skills. This approach aligns seamlessly with the objectives of the National Education Plan, designed to empower students with 21st-century learning competencies.

Objectives: This study aims to comprehensively evaluate the perceptions of extracurricular activities among both medical students and educators.

Methods: A cross-sectional study was conducted with 224 participants, including 15 teachers and 209 students. An online, self-administered, five-point Likert-scale questionnaire with 18 questions was used to collect data. perceptions were categorized into 3 groups: interpersonal and managing skills (I), self-development skills (S), and barriers (B). The data was then analyzed using descriptive statistics, a T-test, and a one-way ANOVA at the 0.05 significance level (α). Finally, group interviews were conducted to broaden students' perspectives on B.

Results: Most students participate in sports and arts related activities (33.01%) and become class representatives (26.32%). Teachers perceived an advantageous view of EAs than studentsdid, in I (M_T = 4.63±0.39, M_c = 4.12±0.90, p = 0.031), S (M_T = 4.18±0.37, M_c = 3.55±0.99, p= 0.016), and B (M_T = 2.46±0.64, M_c =3.31±0.99, p = 0.001). Improving teamwork had the greatest impact on I (λ = 0.905). For S, improving learning skills had the greatest influence (λ = 0.765). And EAs were ranked first as life's burden in B (λ = 0.856). According to the interview (n = 25), the students raised that there were insufficient amenities and time, a lack of opportunity, an unsupportive curriculum, and that this also affected their academic performance.

Discussion & Conclusion: Both teachers and medical students had positive viewpoints about EAs. Participating in EAs provided students with an opportunity to develop personal growth, interpersonal management skills, and insight into their career path. However, the institution should accommodate conceivable motivations and remove related impediments to promote student engagement in EAs.

Keywords: extracurricular activity, medical student, curriculum

Abstract : OR-ME025

Conference Organization : The Perceived Transferable Skill Development and Leadership Competency among Medical Students in Phramongkutklao College of Medicine.

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Background: Leadership competency and transferrable skills are substantially imperative, especially in healthcare and interprofessional collaborations. Conducting medical student organization can improve students' leadership and skill development. Thus, to identify perceived leadership competency and transferable skills among committees of students-made conference is necessary to clarify.

Objectives: This study aim to identify perceived leadership competency and transferable skills among committees of students-made conference is necessary to clarify.

Methods: A cross-sectional study was conducted in 2023 after conference organization. A five-point Likert scale questionnaire was used to collect data. There were two main parts including leadership perspectives and perceived transferrable skills. For leadership, three parts of perspectives including leadership aspect in practice (LAP),leadership attitude (LA),and perceived leadership competency (PLC) were categorized by using exploratory factor analysis (EFA). Regarding perceived transferrable skills, there were six parts including data management, data analysis and calculation, technology, management skill, self-learning skill, and presentation skill. For analysis, independent t-test was calculated mean comparison.

Results: For leadership perspectives, mean scores among three parts including LAP, LA, and PLC were 3.70 ± 0.78,4.32 ± 0.62,4.05 ± 0.69, respectively. Perceived leadership competency (λ=0.801), perceived capability (λ=0.790), and leadership competency in hospital (λ=0.786) ranked first in PLC group. Skill (λ=0.787) and capability development (λ=0.765) were two first required for LAP group Conference affecting leadership comprehension had the highest impact on LA group. Regarding transferrable skills, there were significant total mean score differences in each year group (F= 4.129,p=0.021). Pre-medical students (4.26±0.38) had a significantly higher score than pre-clinicalstudents(3.89±0.75,p=0.044). Moreover, scores of self-learning and presentation skills among pre-medical students (4.45 ±0.40,4.39±0.59) was significantly higher than the score among pre-clinical students (3.94±0.75,p = 0.008,3.84±0.82, p=0.030). Despite the score among clinical students, they had the highest score in both self-learning and presentation skills (4.75±0.31,4.50±0.70).

Discussion & Conclusion: For leadership, there were optimistic opinions in all three categories including LAP, LA, and PLC. Regarding perceived transferrable skills, pre-medical students could more develop their skills than pre-clinical students since these skills were mentioned in pre-medical curriculum. However, the highest score was in clinical students due to their organization positions.

Keywords: leadership competency, perceived transferable skill development, leadership perspectives

Abstract : OR-ME026

Improving Learning Experience by Empowering Preclinical Year Medical Students to Cocreate Learning Tools and Implement Them in Class Learning Activities.

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Background: Well-designed teaching and learning strategies are essential for student success. In academic year 2022, the hematology and lymphoreticular systems course of the Doctor of Medicine Program 2021 revision at our institution was moved to Year 2 instead of Year 3 of the previous curriculum. Our challenge was to create an optimal learning strategy for Year 2 students to ensure a good learning experience during this transition.

Objectives: Our aim was to create an optimal learning strategy for Year 2 students by empowering medical students to cocreate their own learning activities in order to ensure a good learning experience on the revised curriculum.

Methods: Herein, we invited 5 representative, Year 2 students to codesign the learning strategies, develop learning tools and implement them in class learning activities. Gamifying the flipped classroom using game-based learning was chosen and piloted in 4 classes. Student satisfaction and self-confidence in subjects learned using rating scales (0-10) were assessed before and after the class. Formative MCQ assessments before and after the class were evaluated among Year 2 students and compared with the scores from the same questions obtained from Year 3 students of the previous curriculum attending inclass didactic teaching. Reflection from the learning experience and feedback were performed at the end of the class.

Results: A high level of satisfaction (87.5±15.7%) and significant improvements in student self-confidence in subjects learned between before (46.4±20.8%) and after (82.7±16.9%) the class were noted among 96 Year 2 students with *P*-value of <0.001. Interestingly, Year 2 students achieved significantly higher MCQ scores after the class (85.6±19.0%) compared with the scores from Year 3 students of the previous curriculum (77.3±23.6%) with *P*-value of <0.001. Good learning experience was reflected from Year 2 students and positive attitudes towards learning were observed from the 5 representative students during reflection and feedback.

Discussion & Conclusion: Creating the "sense of belonging" in the classroom by empowering preclinical medical students to cocreate learning tools and implement them in class learning activities could positively affect their learning experience and attitude towards learning.

Keywords: empower, engagement, pre-clinical students, game-based learning, student-centered learning

Systematic Review and Meta-Analysis Research

Abstract : OR-SM001

Associations between Psoriasis and Mental Disorders.

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Background: Psoriasis is a complex, chronic relapsing and inflammatory skin disorder. Numerous studies have found associations between psoriasis and various comorbidities, including mental disorders. Psoriasis affects the personal, social, and sexual lives of the patients and decreases their quality of life. The negative influence of psoriasis on a patient's physical and mental well-being, in combination with overlapping pathophysiology, increase the risk for mental disorders.

Objectives: To review and evaluate the relationship between psoriasis and mental disorders.

Methods: Articles used for this review were selected from PubMed database and the studies included were only concerning mental disorders related to Psoriasis of the last 7 years, using the keywords "Psoriasis", "Mental Disorders" and "Comorbidity".

Results: The PubMed search returned 205 papers. After duplicate removal, titles and abstracts were screened for eligibility. The total of 7 papers were included in this review. The studies showed that patients with psoriasis are at increased risk for the development of depression, anxiety and suicidality. In the UK there are over 10,400 diagnoses of depression, 7,100 diagnoses of anxiety, and 350 diagnoses of suicidality attributable to psoriasis each year. Evidence is emerging that, like psoriasis, depression is associated with systemic low-grade inflammation, and the systemic inflammatory profile of the 2 conditions show similar traits, e.g. with elevated plasma concentrations of IL-2, IL-6, IL-12 and TNF-α. Various studies showed that patients with psoriasis were approximately 1.5 times more likely to exhibit signs of depression compared with healthy controls, and that 25% of patients with psoriasis have symptoms of depression. Psoriasis patients are 1.5 times more likely to show depressive symptoms and experience a higher prevalence of anxiety symptoms (20–50%) than individuals without psoriasis. Pro-inflammatory markers, which play an important role in the pathophysiology of psoriasis, have been shown to be elevated in patients with depression and anxiety; this suggests shared inflammatory pathways may be involved.

Discussion & Conclusion: There is an increased risk of psychiatric comorbidity in psoriasis patients potentially due to an underlying inflammatory mechanism. Understanding the relationship between psoriasis and mental disorder would help in better management of the disease by the clinicians and supporting psychological wellbeing and clinical outcomes for psoriasis patients.

Keywords: psoriasis, mental disorder, comorbidity

Abstract : OR-SM002

The Complex Phenomenon of Repetitive Suicidal Behaviour in Schizophrenia.

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Background: Suicide stands out as one of the leading causes of premature mortality on a global scale, resulting in over a million deaths annually. In schizophrenia, suicide is primary factor contributing to premature mortality. The key for this phenomenon is the inclination towards self-inflicted harm, which is considered the most severe symptom of schizophrenia which constantly encourages suicidal behaviour between schizophrenia patients.

Objectives: To review findings on repetitive suicidal behaviour characteristics in schizophrenia patients.

Methods: The articles used for this review were selected from PubMed database and the studies included were only those which researched suicidal behaviour between patients with schizophrenia of the last 10 years, using the keywords “Schizophrenia”, “Suicide”, “Suicidal ideation”, “Suicidal behaviour”.

Results: The PubMed search returned 300 papers. After duplicate removal, titles and abstracts were screened for eligibility. A total of 10 papers were included in this review. About 20 and 42% patients of schizophrenia attempts suicide and 10 – 15% completes it. One paper has pooled that prevalence of suicidal ideation globally among people living with schizophrenia is about 34.5 % while 6.4 – 13% have concrete plans for suicide. Schizophrenia patients experience suicide ideation, which can be triggered by social factors (young age, male sex, low education, alcohol consumption) and severity of psychiatric symptoms (hallucinations, disorganised thinking, delusions, previous depressive disorders) these factors contribute to recurrent suicidal behaviour. This behaviour can appear in various ways, most common are: verbal threats about suicide, self harm by psychotropic medication misuse, drugs, alcohol and aggressive behaviour towards other people. Results have shown that hospitalization and the post – discharge period merge as critical periods for aggressive behaviour and suicidal intentions among schizophrenia patients due to isolation, exacerbated symptoms and traumatic experiences.

Discussion & Conclusion: The etiology of suicidal behaviour in schizophrenia is multifactorial. By understanding the multifaceted dynamics underlying this phenomenon, mental health professionals can better address the complexities of suicidal behaviour within the context of schizophrenia, ultimately enhancing patient outcomes and reducing the prevalence of such behavior.

Keywords: schizophrenia, suicide, suicidal ideation, suicidal behaviour

Abstract : OR-SM003

Infliximab in Neurosarcoidosis: A Systematic Review and Meta-Analysis.

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Background: Neurosarcoidosis has diverse clinical manifestations and is complex to manage. Treatment usually requires multi-modalities of medications due to incomplete remission. Infliximab is one of the promising therapies for refractory neurosarcoidosis.

Objectives: To conduct a systematic review and meta-analysis of the clinical outcomes and relapse rate of neurosarcoidosis patients who received the TNF-alpha antagonist, infliximab.

Methods: Systematic review was performed using MEDLINE, EMBASE, SCOPUS, and Cochrane Library to obtain eligible studies involving neurosarcoidosis and infliximab. Clinical outcomes of treatment must be provided. A random-effectsmodel was used to analyze the proportional rate of treatment outcomes.

Results: Seven studies included 237 patients with neurosarcoidosis, of whom 184 (77.6%) were treated with infliximab. The pooled proportion of patients treated with infliximab who had clinical improvement was 0.74 (95% CI, 0.64-0.84; $I2$=49.73%). The relapse rate conducted from four studies was 0.38 (95% CI, 0.22-0.55; $I2$ = 56.92%). Tapering or cessation of corticosteroid dosage was also achieved in patients who received infliximab in most studies. Adverse effects occurred in 52 (29.4%) patients. Thirty-nine out of 54 events (72.2%) were infection-related incidences.

Discussion & Conclusion: Infliximab demonstrated potential improvement in clinical outcomes in patients with refractory neurosarcoidosis and could reduce the dosage of concurrent corticosteroids. Some degree of relapse rate was also noticed, and infection was the primary concern for adverse events.

Keywords: neurosarcoidosis, sarcoidosis, infliximab, TNF-alpha inhibitor

Abstract : OR-SM004

Effects of Music Therapy for Depressed Patients: A Systematic Review and Meta-Analysis of Randomized Controlled Trials.

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Background: Depression is a common medical condition described by sadness, low mood, and inability to enjoy life. There were evidences indicated that music therapy had been used in treatment of psychiatric disorders, including depression.

Objectives: This systematic review and meta-analysis aimed to examine the efficacy and acceptability of music therapy in reducing depression symptoms.

Methods: The included trials were randomized controlled trials comparing the efficacy or dropout rates between music therapy and no intervention or a placebo-like intervention. We searched Pubmed, Embase, and Cochrane Central Register of Controlled Trials from inception to March 2023. We synthesized the data using a random-effects model of a frequentist meta-analysis.

Results: This study included 49 trials, which had 58 comparisons between music therapy (n = 1,637) and control interventions (n = 1,621). The control interventions included no intervention, waitlist, rest and reading, audio stimuli, nature sound, group counseling, gymnastic activities, and noise muffling. We found that music therapy reduced depressive symptoms to a greater extent than control interventions (n = 46, SMD = -0.50, 95% CI = -0.64 to -0.36, I2 = 63%). Music therapy was significantly effective in all three subgroups receiving receptive music therapy (n = 26, n = SMD -0.59, 95% CI = -0.81 to -0.37, I2 = 77%), active music therapy (n = 14, SMD -0.35, 95% CI = -0.49 to -0.22, I2 = 6%), and mixed active and receptive music therapy (n = 6, SMD -0.40, 95% CI = -0.72 to -0.09, I2 = 72%). The efficacy of music therapy was not moderated by adjunctive antidepressant therapy, duration of the study, sex, and age. Dropout rates were not significantly different between groups. Limited evidence suggested that music therapy is effective and well accepted for treating depression

Discussion & Conclusion: In conclusion, music therapy can reduce depression in depressed clients. All 3 forms of music therapy are effective in reducing depressive symptoms.

Keywords: music therapy, depression, meta-analysis

Abstract : OR-SM006

Gender Dysphoria Comorbidity with Schizophrenia.

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Background: Gender dysphoria is a rare condition characterized by an incongruity between gender identity and biological sex. Although gender dysphoria in patients with schizophrenia is a rare phenomenon, it is observed more often than in the general population. Clinical evidence suggests that both gender dysphoria and schizophrenia may share common causal mechanisms and risk factors.

Objectives: To review and evaluate the relationship between gender dysphoria and schizophrenia.

Methods: The articles used for this review were selected from PubMed database and the studies included were only the studies with schizophrenia related to gender dysphoria of the last 10 years, using the keywords “Schizophrenia”, “Gender Dysphoria” and “Transsexualism”.

Results: The PubMed search returned 196 papers. After duplicate removal, titles and abstracts were screened for eligibility. The total of 7 papers were included in this review. Hospital and clinic-based studies showed that schizophrenia occurs in patients with gender dysphoria at rates higher than in the general population. Clinical evidence suggests that patients with gender dysphoria may have schizophrenia-like personality traits. Conversely, patients with schizophrenia may experience alterations in gender identity and gender role perception. There are distinguished 4 mechanisms which have an impact on gender identification problems caused by schizophrenia: (1) identity problems as a stressor which can cause schizophrenia symptoms to appear; (2) identity problems as a consequence of schizophrenia; (3) the common neurobiological background of schizophrenia and gender dysphoria; (4) the influence of schizophrenia-specific deficits of mental functions on gender identity. Gender dysphoria in individuals with schizophrenia may result from the delusionally changed gender identity or appear regardless of psychotic process. Clinical evidence suggests shows that different delusional beliefs regarding belonging to another gender, anatomy or changes within the genitals affect about one-fourth of patients with schizophrenia Neurobiological research, including brain imaging and studies of finger length ratio and handedness, suggests that both these disorders are associated with altered cerebral sexual dimorphism and changes in cerebral lateralization.

Discussion & Conclusion: The presence of symptoms of gender dysphoria in schizophrenic patients generates many serious diagnostic and therapeutic problems. It is imperative for clinicians to approach each diagnosis with a holistic lens, given the overlapping symptoms and potential for misdiagnosis.

Keywords:s Schizophrenia, gender dysphoria, transsexualism

Abstract : OR-SM007

Postpartum Depression: Review on Mechanisms and Treatment.

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Background: Postpartum depression is a mood disorder characterized by persistent feelings of sadness, anxiety, and exhaustion following childbirth. This disorder affects approximately 10-15% of women. A comprehensive understanding of the mechanisms and treatment modalities for postpartum depression is crucial for optimal maternal-child health.

Objectives: To review the mechanisms and treatments associated with postpartum depression.

Methods: Articles for this review were sourced from the PubMed database, specifically targeting studies from the past 10 years that focused on the mechanisms and/or treatment of postpartum depression. Keywords used in the search included "Postpartum Depression," "Postnatal Depression," "Mechanisms," and "Treatment."

Results: The PubMed search yielded 266 papers. After removing duplicates, titles and abstracts were screened for relevance. A total of 15 papers were included in this review. These studies indicated that the postpartum period undergoes significant alterations in endocrine homeostasis, with pronounced fluctuations in several hormonal axes. A significant decline in estrogen and progesterone levels post-childbirth has been correlated with mood alterations and the onset of postpartum depression. Recent studies highlight the potential involvement of the immune system in postpartum depression, with elevated levels of pro-inflammatory markers such as C-reactive protein and specific cytokines being observed. Neuroimaging research has pinpointed altered brain activities in women with postpartum depression, especially within the amygdala and prefrontal cortex—areas essential for mood regulation and emotional processing. Furthermore, psychosocial factors, like life stressors and lack of societal support, increase the risk of postpartum depression. Cognitive Behavioral Therapy and Interpersonal Therapy are recognized as the leading psychological interventions for treating postpartum depression. From a pharmacological perspective, SSRIs are the primary recommended treatments, though concerns about breastfeeding and potential neonatal impacts must be considered. Emerging therapeutic options, including omega-3 fatty acid supplementation and phototherapy, have shown initial promise in clinical trials.

Discussion & Conclusion: Postpartum depression results from a combination of hormonal fluctuations, inflammatory responses, neural activity changes, and psychosocial influences. Psychological therapies, coupled with pharmacological solutions, are the cornerstone of treatment. Early detection and holistic treatment approaches are essential for ensuring the well-being of both the mother and the child.

Keywords: postpartum depression, postnatal depression, mechanism, treatment

Abstract : OR-SM009

Curcumin Supplementation and Lipid Profile Modulation in Type 2 Diabetes Mellitus: A Systematic Review and Meta-Analysis of Randomized Controlled Trials.

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Background: Numerous studies suggest the potential of curcumin, a bioactive compound derived from turmeric, in lowering lipid levels. However, the existing evidence on the effects of curcumin supplementation on lipid profiles in individuals with Type 2 Diabetes Mellitus (T2D) has shown inconsistencies, prompting this systematic review and meta-analysis.

Objectives: This study aims to comprehensively assess the impact of curcumin supplementation on lipid profile parameters in individuals with T2D, providing a synthesis of the available evidence on this subject.

Methods: We conducted a systematic search of randomized controlled trials (RCTs) up to the year 2023 across online databases including PubMed, Scopus, Cochrane, and Medline. Inclusion criteria consisted of studies involving participants diagnosed with T2D, aged 18 years or older, receiving oral curcumin supplementation, and reporting results in English. The search utilized MeSH terms and Boolean operators. Risk of bias assessment was carried out using the Cochrane Risk of Bias Tool, and the systematic review, data extraction, and quality assessment were performed by a team of three reviewers.

Results: Our systematic review included a total of eight studies, with five of them deemed suitable for meta-analysis, encompassing a cohort of 2004 eligible T2D participants who received curcumin supplementation. The meta-analysis was conducted at a 95% confidence interval, revealing results for High-Density Lipoprotein (HDL), Low-Density Lipoprotein (LDL), Total Cholesterol (TC), and Triglycerides (TG). Notably, the meta-analysis demonstrated no statistically significant differences ($P > 0.05$) in lipid profile outcomes: HDL (MD = 0.43, I^2 = 81%, P = 0.17), LDL (MD = 0.18, I^2 = 96%, P = 0.93), TC (MD = 1.68, I^2 = 92%, P = 0.42), TG (MD = -2.85, I^2 = 90%, P = 0.43).

Discussion & Conclusion: This comprehensive analysis suggests that curcumin supplementation does not yield statistically significant reductions in lipid profile parameters in individuals with T2D ($P > 0.05$). Therefore, our findings indicate that oral curcumin supplementation may not be necessary for lipid profile management in T2D. Previous studies highlighted the challenge of curcumin's limited bioavailability as a potential factor contributing to these findings. To enhance its efficacy in lipid modulation for this population, we advocate for further exploration of alternative curcumin delivery methods.

Keywords: curcumin, supplementation, lipid profile, Type 2 diabetes mellitus, systematic review, meta-analysis, randomized controlled trials

Abstract : OR-SM011

Current Updates on Intermittent Theta Burst Stimulation in Bipolar Disorder: A Systematic Review.

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Background: In 2019, there were approximately 46 million bipolar cases worldwide, and up to 60% of bipolar patients attempted to commit suicide at least once in their life. Bipolar disorder (BD) is a mood disorder known as manic depression, in which patients often experience intense emotional shifts. Despite several treatments provided, one-quarter of BD patients were found treatment-resistant (TRBD). One new non-invasive alternative approved by the FDA in 2018 is intermittent theta burst stimulation (iTBS), which is a quicker form of repetitive transcranial magnetic stimulation that can help reduce depressive symptoms. However, studies of iTBS efficacy on BD symptoms have not been adequately examined.

Objectives: This systematic review aims to assess the current state of research on the application of iTBS as a therapeutic intervention for individuals with bipolar disorder, especially TRBD. Also, other additional findings from the research will be explored for further studies in neuropsychiatric fields.

Methods: A systematic search was performed on Scopus, Sciencedirect, and ELSEVIER to identify relevant English-language studies published from 2018 to 2023. Other databases were only used for background information. Data extraction, quality assessment, and synthesis of findings were conducted following established systematic review methodologies.

Results: A total of 10 full-text studies, including randomized controlled trials, case series, and meta-analyses were reviewed. The majority of studies prescribed the iTBS on their subjects for 1 to 4 weeks along with regular medication, and most assessments used comprise the Young Mania Rating Scale (YMRS) and Montgomery-Åsberg Depression Rating Scale (MADRS). Four studies indicated high remission rates and concluded that iTBS is a well-tolerated and efficacious method to treat BD. However, the other five studies found no significant change in BD symptom scores, and one study reported worsening outcomes after iTBS sessions. Additionally, one paper revealed an increase in left hippocampus volumes from the trials, which is positively associated with nonverbal memory.

Discussion & Conclusion: The potency of using iTBS in the treatment of BD is still inconclusive. Yet, an additional result shows the potential enhancement of remembrance. Since the existing literature is still limited, further investigations are required to examine the efficacy and long-term consequences of iTBS in these populations.

Keywords: bipolar disorder, intermittent theta burst stimulation, treatment-resistant

Incidence, Mortality and Predictors of Acute Respiratory Failure in Acute Pancreatitis: A Systematic Review and Meta-Analysis.

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Background: Acute pancreatitis (AP) is a clinical disease characterized by inflammation of the pancreas, which can vary in severity and progression. It triggers a systemic inflammatory response in the body, leading to respiratory complications due to increased alveolar-capillary permeability, diffuse alveolar damage, lung capillary endothelial injury, diffuse pulmonary oedema and impaired gaseous exchange. Acute respiratory failure (ARF) is the predominant organ failure in AP, manifesting as acute lung injury or acute respiratory distress. ARF carries a high in-hospital mortality rate and poor prognosis in patients with AP, underscoring the importance of identifying the predictive factors of ARDS in patients with AP for early clinical detection and treatment.

Objectives: This study aims to investigate the overall incidence, mortality rate, ventilation rate and predictive factors of ARF in patients with AP.

Methods: A systematic literature search was conducted using PubMed and EMBASE to retrieve studies reporting the incidence, mortality rate, ventilation rate and predictors of acute respiratory failure (ARF) in patients with acute pancreatitis (AP). The pooled incidence, mortality rate and ventilation rate were calculated using the random-effects generic inverse variance method in Cochrane Review Manager. Predictive factors of ARF were calculated using a random effect meta-regression model with log odds ratio transformation in R programming.

Results: 11 studies involving 755636 patients with AP were included in this meta-analysis. The overall incidence of ARF in patients with AP was 14% (95%CI, 11-18). 6% (95% CI, 2-10) of AP patients with ARF required ventilator support. Predictors of ARF in AP were pre-existing lung condition (OR=1.520), white blood cell count (WBC) (OR=1.174) and serum creatinine (OR=1.007).The overall mortality rate of ARF in patients with AP was 3% (95%CI, 1-5).

Discussion & Conclusion: The incidence of ARF in patients with AP is significant with a relatively low mortality rate. AP patients with pre-existing lung condition have the highest risk of developing ARF. Therefore, it is important to identify predictive factors of ARF in AP patients to prevent further complications and improve prognosis.

Keywords: acute pancreatitis, acute respiratory failure, mortality, ventilation support

Abstract : OR-SM016

Incidence and Predictors of Renal Dysfunction in Patients Receiving Atypical Antipsychotics Treatment: A Systematic Review and Meta-Analysis.

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Background: Antipsychotics are the mainstay treatment in schizophrenia, acute bipolar mania and depression with insufficient response to antidepressants. Atypical antipsychotics are associated with several adverse effects including metabolic syndrome, weight gain, QTc interval prolongation and extrapyramidal effects. Additionally, some studies show that there is a positive correlation between atypical antipsychotics and acute kidney injury (AKI) as well as chronic kidney disease (CKD). Patients with psychiatric conditions often require life-long medications, emphasising the importance of recognising and maintaining medication tolerability and adherence.

Objectives: This study aims to investigate the relative risk of renal dysfunction in patients receiving atypical antipsychotics and the predictors of renal dysfunction.

Methods: A systematic literature search was conducted via PubMed and EMBASE to retrieve studies reporting the incidence of AKI and/or CKD in patients receiving atypical antipsychotics treatment. The pooled relative risk of renal dysfunction was calculated using the random-effects generic inverse variance method in Cochrane Review Manager. Predictors of renal dysfunction were calculated using a random-effects meta-regression model with log odds ratio transformation in R programming.

Results: A total of 8 studies involving 971,320 patients (355,539 patients on atypical antipsychotics and 615,781 controls) were included in this meta-analysis. Patients on atypical antipsychotics exhibited an increased risk of renal dysfunction, with a pooled relative risk of 1.19 (95%CI, 1.08-1.30). Notably, quetiapine had the highest relative risk of renal dysfunction at 1.38 (95%CI, 1.27-1.50) followed by clozapine at 1.15 (95%CI 1.02-1.30). Subgroup analysis demonstrated that atypical antipsychotic use was associated with an increased risk of AKI (RR 1.35, 95%CI, 1.23-1.50) but not CKD (RR 1.07, 95%CI 0.94-1.21). Quetiapine exhibited the highest relative risk for AKI at 1.48 (95%CI 1.28-1.71), followed by olanzapine at 1.44 (95%CI 1.19-1.75) and risperidone 1.29 (95%CI 1.03-1.62). Furthermore, it was observed that quetiapine also exhibited the highest relative risk of CKD at 1.34 (95%CI,1.21-1.48), followed by clozapine at 1.15 (95%CI 1.02-1.30). The predictive factors of renal dysfunction were high dose medication (OR:1.62) and hypertension (OR:1.27).

Discussion & Conclusion: Patients receiving atypical antipsychotics have an increased risk of renal dysfunction particularly AKI. Quetiapine carries the highest risk of renal dysfunction encompassing both AKI and CKD.

Keywords: atypical antipsychotics, renal dysfunction, acute kidney injury, chronic kidney disease

Abstract : OR-SM019

Associations between Breast Implants and Anaplastic Large Cell Lymphoma.

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Background: Anaplastic Large Cell Lymphoma (ALCL) is a rare type of non-Hodgkin's lymphoma that has been associated with breast implants. This association has gained increasing attention in recent years, prompting comprehensive research and medical investigations. ALCL related to breast implants is a specific subtype known as Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL). The relationship between breast implants, particularly textured surface implants, and the development of BIA-ALCL has led to ongoing studies and discussions within the medical community to better understand this rare yet significant health concern.

Objectives: To review and evaluate the influence of breast implants and the development of Breast Implant – Associated Anaplastic Large Lymphoma (BIA-ALCL).

Methods: The articles used for this review were selected from PubMed database and the studies included were only the studies with ALCL related to breast implants of the last 5 years.

Results: We identified 447 articles in a PubMed search, of which 6 were included after removing duplicates and screening titles/abstracts. BIA-ALCL's true pathogenesis remains elusive, with textured implants implicated in most cases, though exact risk remains uncertain. The condition primarily affects implant-adjacent tissue, typically manifesting as late-onset seromas or breast lumps. Proposed hypotheses abound, but the mechanisms underlying BIA-ALCL's etiology and pathogenesis remain unclear. It's unlikely that implant composition alone explains it. Contributing factors such as bacterial biofilm, immune response, and patient genetics have been explored. Notably, textured implants tend to develop higher bacterial biofilm loads compared to smooth implants.

Discussion & Conclusion: In summary, our analysis aimed to understand the link between various implant types and BIA-ALCL, especially textured implants. However, our findings are limited by the constraints of the primary literature. To gain a more comprehensive understanding, international cooperation is necessary, with consistent and accurate reporting of patient and implant data. Nevertheless, given the widespread use of textured breast implants for both aesthetic and reconstruction purposes (at least in Europe) in the last decades, it would be advisable to implement follow-up programs for all women with breast implants.

Keywords: breast implants, anaplastic large cell lymphoma, lymphoma.

Abstract : OR-SM024

Efficacy and Safety of FDA-Approved Anti-amyloid-β Immunotherapies in Early Alzheimer's Disease: A Systematic Review and Meta-analysis of Phase III Clinical Trials.

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Background: Anti-amyloid-β (Aβ) Immunotherapies have emerged as a promising therapeutic approach to target the underlying pathology of Alzheimer's disease (AD). Nevertheless, evaluating the efficacy and safety of anti-amyloid immunotherapies remains a subject of ongoing debate, with particular emphasis on their risk-benefit profile. Significantly, the findings derived from the phase III trials of Lecanemab, a recently FDA-approved drug in 2023, and Donanemab, anticipated to be approved by the end of 2023, have not been integrated into research studies.

Objectives: Consequently, this systematic review and meta-analysis were conducted to investigate the efficacy and safety of Aducanumab, Lecanemab, and Donanemab.

Methods: A systematic search of PubMed, Scopus, and ClinicalTrials.gov was conducted to identify pertinent phase III clinical trials, spanning from initial records to September 2023. Screening, data extraction, and risk bias assessment were independently executed by two reviewers. The Fix effect or random-effect model meta-analysis was used depending on data heterogeneity. The primary outcomes were cognitive: Clinical Dementia Rating Scale-sum of Boxes (CDR-SB), AD Assessment Scale-Cognitive Subscale (ADAS-Cog). Secondary outcomes include Mini-Mental State Examination (MMSE), AD Cooperative Study – Activities of Daily Living for Mild Cognitive Impairment (ADCS-MCI-ADL), and adverse events specifically Amyloid-related imaging abnormalities (ARIA).

Results: The meta-analysis included 6,827 patients in 4 Clinical Trials. Anti-amyloid monoclonal antibodies improved the clinical cognitive outcomes CDR-SB {MD= -0.33 [95% CI (-0.54, -0.13), P=0.001, I2=70%]}, ADAS-Cog {MD= -1.07 [95% CI (-1.45, -0.69), P<0.00001, I2=0%]}, MMSE {MD=0.26 [95% CI (0.03, 0.49), P = 0.02, I2=23%]}, ADCS-MCI-ADL {MD=1.26 [95% CI (0.83, 1.68), P<0.00001, I2=48%]}. However, the result from subgroup analysis by individual drug, Aducanumab has no improvement on MMSE {MD=0.15 [95% CI (-0.13, 0.44), P=0.29, I2=16%]}. Moreover, anti-amyloid immunotherapy also significantly increased the risk of any AIAR {RR=2.92 [95% CI (2.28, 3.75), P<0.00001, I2=84%]}and ARIA-E {RR=9.79 [95% CI (6.32, 15.16), P<0.00001, I2=48%]}. In the subgroup analysis of AIAR-E by APOE-ε4 carriers significantly increased risk of ARIA-E {RR=12.37 [95% CI (8.08, 18.94), P<0.00001, I2=63%]}

Discussion & Conclusion: Following the meta-analysis of phase III trials, anti-amyloid immunotherapies significantly enhance cognitive outcomes. However, in subgroup analysis, Aducanumab does not demonstrate improvement in MMSE. Additionally, anti-amyloid immunotherapies also notably induce AIAR, especially in APOE-ε4 carriers.

Keywords: alzheimer, amyloid, immunotherapy, aducanumab, lecanemab, donanemab, meta-analysis

Abstract : OR-SM026

Delving into the Effects of Digital Meditation: Nurturing Adolescent Mental Health via Mindfulness App and Website Interventions: A Systematic Review and Meta-Analysis.

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Background: Over 50% of adolescents undergo depression, stress, and anxiety. This is associated with some factor, including, age, separation from parents and friends, academic and organizational demands, and financial issues. Neglecting these concerns can lead to further physical and psychological problems. Mindfulness meditation refers to various types of mindfulness-based physicotherapy, effective treatments for reducing stress and depression. Unfortunately, this solution may be costly and time-consuming. Therefore, mindfulness meditation which are accessible through apps and websites, providing affordability, adaptability, and enhanced privacy.

Objectives: To evaluate the effect of mindfulness app and website interventions on adolescent mental health.

Methods: This study followed the Preferred Reporting Item for Systematic Review and Meta-analysis (PRISMA). We systematically searched through PubMed, Scopus, Cochrane, Wiley, and ProQuest until August 22, 2023. Critical appraisal of included studies was performed with Cochrane Risk of Bias 2.0. Pooled mean, SD, and p-value were analyzed using a random-effects model.

Results: Thirty-seven randomized studies yielding 5667 participants are included. Mindfulness app and website interventions showed a beneficial effect on depression (SMD: -0.71[0.93,-0.49], $p<0.001$), anxiety (SMD: -3.29 [-4.15, -2.43], $p<0.001$), stress (SMD: -0.72 [-0.98, -0.45], $p<0.001$), mindfulness (SMD: 1.20 [0.84, 1.56], $p<0.001$), and self-compassion (SMD: 0.98 [0.61, 1.34], $p<0.001$). We further assess a subgroup analysis to find the best duration of intervention and effect differences of intervention before and after COVID-19.

Discussion & Conclusion: Despite COVID-19 pandemic challenges, our meta-analysis indicates that digital mental health interventions for adolescents significantly reduce depression, anxiety, and stress while boosting mindfulness and self-compassion. Optimized intervention durations and best mindfulness practices should be implemented in today's 2 million mental health apps.

Keywords: application, website, mental health, mindfulness., mobile application

Abstract : OR-SM031

Risk of Dementia in Patients with Adulthood Atopic dermatitis: A Systematic Review and Meta-analysis of Cohort Studies with 15,096,737 participants.

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Background: Emerging yet contrasting evidence has reported the association between adulthood AD and the risk of developing dementia.

Objectives: To the best of our knowledge, this is the first systematic review and meta-analysis to determine the association between adulthood AD and the risk of incident dementia.

Methods: A systematic search of MEDLINE, Scopus, EMBASE, Cochrane Library, and medRxiv was performed through September 2023 to identify eligible cohort studies examining the risk of dementia among adults (age ≥18 years) with AD versus non-AD controls. Two reviewers independently extracted study characteristics and outcomes. If consensus is required, a third reviewer will be consulted. Quality assessments were performed according to the Newcastle-Ottawa Scale (NOS). The PRISMA and Meta-analysis of Observational Studies in Epidemiology (MOOSE) reporting guidelines were followed. The reported adjusted hazard ratio (aHR) from the model maximally adjusted for potential confounders were pooled using the random-effects meta-analysis. Subgroup analyses were conducted according to the dementia types and AD severity. Publication bias was evaluated by funnel plot.

Results: Of 3,906 identified studies, 5 studies with 7 cohorts (n = 15,096,737) were eligible for inclusion and were pooled in the meta-analysis. A significant association was found between AD and risk of incident all-cause dementia (pooled aHR, 1.13; 95% CI, 1.06-1.21; I^2=81%). Subgroup analysis of dementia types illustrated a significantly increased risk of Alzheimer (pooled aHR, 1.13; 95% CI, 1.04-1.24; I^2=80%) and vascular dementia (pooled aHR, 1.17; 95% CI, 1.11-1.24; I^2 =11%). Interestingly, subgroup analysis of AD severity revealed that severe AD was associated with significantly increased risk for incident all-cause dementia (pooled aHR, 1.36; 95% CI, 1.21-1.54, I^2=0%), but not in mild AD (pooled aHR, 1.52; 95% CI, 0.76-3.05, I^2=85%). No evidence of publication bias was observed. Quality assessments of the included studies were high.

Discussion & Conclusion: The high heterogeneity is partly due to the inconsistent statistical adjustment for confounders and varied study design implemented among studies. In conclusion, patients with adulthood AD have a significant increase risk of dementia. These findings may provide a reference for the clinical management of AD patients with baseline dementia risk. Research exploring underlying mechanisms for the association of AD and dementia is warranted.

Keywords: atopic dermatitis dementia, alzheimer's disease, vascular dementia, systematic review, meta-analysis

Abstract : OR-SM033

Efficacy of Fecal Microbiota Transplantation as Therapeutic Approach on Diabetic Nephropathy via Enterorenal Crosstalks: A Comprehensive Systematic Review and Meta-Analysis.

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Background: The gut microbiota significantly influences the interaction between the gastrointestinal and renal systems. Among methods to introduce beneficial bacteria, fecal microbiota transplantation (FMT) is noteworthy. It can potentially impact the progression of diabetic kidney disease (DKD) by directly targeting the gut microbiota. However, FMT's overall effectiveness hasn't been thoroughly studied. This pioneering meta-analysis provides valuable insights for recommendations and improvement in this field.

Objectives: This review aims to explore the efficacy of FMT in dealing with DKD.

Methods: A research question was formulated using the PICO framework. According to PRISMA guidelines, systematic searches were conducted on electronic databases, Pubmed and Embase. Six animal studies published from 2020 to 2022 were included in the systematic review after quality assessment using SYRCLE. A fixed-effects meta-analysis within the Review Manager 5.4. was used to estimate standardized mean differences (SMD).

Results: Six studies were examined in a meta-analysis to assess the impact of altered microbiota in reducing gut damage in mice with streptozotocin-induced DKD. The results demonstrated that FMT significantly reduced proteinuria in the UACR test (SMD = -1.66, p-value < 0.00001), lowered metabolic products, including serum acetate (SMD = -1.58, p-value = 0.0005), decreased in the expression of interleukin-6 (SMD = -1.27, p-value = 0.001) and tumor necrosis factor-alpha. However, these treatments did not result in any notable reductions in blood glucose levels (SMD = -0.05, p-value = 0.88). In DKD individuals, uremia has been linked to mortality; fortunately, these investigations also found that uremic toxins such as lipopolysaccharides and trimethylamine N-oxide were attenuated following FMT administration. Additionally, FMT has been shown to increase the diversity of microbial groups that produce acetate, specifically *Lactobacillaceae*, resulting in the restoration of cholesterol homeostasis.

Discussion & Conclusion: FMT holds promising therapeutic potential for DKD treatment by improving proteinuria, uremia, and systemic inflammation, but has little effect on glycemia. However, due to the scarcity of studies, several measurements couldn't be included in meta-analysis. Further study needs to design clinical research with comprehensive parameters and an extended follow-up to investigate this therapy's adverse effects and duration.

Keywords: fecal microbiota transplant , diabetic kidney disease, gut-kidney axis

ABSTRACT : E-POSTER PRESENTATION

Basic Science in Medical Research

Public Health and Epidemiology Research

Clinical and Translational Research

Medical education Research

Systematic review and meta-analysis Research

Basic Science in Medical Research

Abstract : PT-BS001

The Future of Outer Membrane Vesicle (OMV) Vaccines.

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Background: Outer membrane vesicles (OMVs) are nano-spherical particles that are naturally released from Gram-negative bacteria by membrane blebbing. OMVs are attractive delivery systems as they are non-replicating and thus safe and can be engineered to present antigens in a native manner. Furthermore, the in-built adjuvancy of OMVs makes them potent enabling low doses to be effective and often without the need for an adjuvant.

Objectives: Firstly, to explore the physical characteristics and immunological properties of OMVs. Secondly, to review OMV vaccines in three categories: licensed OMV vaccines, OMV vaccines in clinical trials and OMV vaccines in the pre-clinical stage. Lastly, to identify concerns, research gaps, and future prospects of OMVs as a vaccine platform.

Methods: The extended literature review was conducted by selecting relevant research papers from online databases such as PubMed and Google Scholar by using keywords e.g., "OMVs", "extracellular vesicles", "vaccines", and "infectious diseases".

Results: Up to now, there have been several licensed OMV vaccines developed against *Neisseria meningitidis* serogroup B (MenB) for enhanced vaccine efficacy and for broadening protection against MenB circulating strains. Recently, with more in-depth knowledge and advancement in engineering technologies, genetic manipulation has played a significant role in OMV optimisation. Genetic manipulation now plays a major role in fine-tuning immunogenicity, increasing OMV yields as well as providing more diverse protection against different infectious agents.

Discussion & Conclusion: With advancement in tools for genetic manipulation of OMVs, the potential for applications beyond creating vaccines against infectious disease are being explored such as their use as drug delivery systems and as cancer vaccines. However, more studies are required including comparative investigations of the properties of OMVs isolated from different bacterial species, and more rigorous standardisation of OMV production. To summarise, genetic engineering together with further exploration of OMVs will pave the way for this versatile platform to be exploited for multiple purposes from vaccine development to drug delivery.

Keywords: outer membrane vesicles (OMV), vaccines, infectious diseases

Abstract : PT-BS002

Antimicrobial Activity of *Lactobacillus* spp. Isolated from Thai Healthy Population Faeces Against *Fusobacterium nucleatum*.

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Background: Colorectal cancer (CRC) ranks as the third most prevalent global cancer, contributing significantly to mortality. *Fusobacterium nucleatum*, a pathogenic bacterium mainly found in CRC patients, is proved to be associated with CRC tumorigenesis in mouse models. This study investigates *Lactobacillus* spp. strains from healthy Thai individuals' feces for their potential to counter F. nucleatum. Identifying effective probiotic strains may offer promising therapeutic avenues for CRC, potentially enhancing clinical outcomes and reducing mortality.

Objectives: To identify the strains of *Lactobacillus* spp. that were isolated from the healthy Thai population and exhibited an antagonistic effect against *Fusobacterium nucleatum*, a key member of colorectal cancer-associated bacteria.

Methods: Twenty isolates of *Lactobacillus* spp. obtained from fecal specimens of healthy Thai population were cultured in De Man, Rogosa and Sharpe (MRS) broth. Cell-free culture supernatants (CFCS) were obtained by centrifugation and 0.22-um membrane filtration. To ensure the use of bacteria in the log phase, *F. nucleatum* growth curve was established. The *Lactobacillus* CFCS was serially diluted to 50%, 25%, and 12.5% and was adjusted to pH 7 with 1 M NaOH. The CFCS was used to treat *F. nucleatum* in 96-well plates. Plates were incubated anaerobically for 24 hours, and the OD 600 was measured for each well. The experiments were performed in duplicates using triplicate samples for each experiment.

Results: The long phase of *F. nucleatum* AN 2031 was obtained from 12-27 hour culture. At 50% concentration, the CFCS derived from nearly all *Lactobacillus* isolates, except N30M3, exhibited a significant inhibitory effect on *F. nucleatum*growth. Moreover, the 25% CFCS from seven *Lactobacillus* isolates; N39C3, 018F2, N16M3, N30M6, N43C3, 001F2 and 078F1, demonstrated significant growth inhibition. Notably, 12.5% CFCS of only 4 *Lactobacillus* isolates; N30M6, N43C3, 001F2 and 078F1, effectively exhibited antimicrobial activity against *F. nucleatum*.

Discussion & Conclusion: This study highlights the potential antimicrobial impact of Lactobacillus isolated derived from fecal specimens of healthy Thai population against *F. nucleatum*. Further investigation is warranted to characterize these isolates and explore additional beneficial features including anti-inflammatory effects. These findings establish the foundation for advancing probiotic research in CRC alleviation. Effective probiotics offer a promising approach for CRC prevention and management.

Keywords: *Lactobacillus* spp., *Fusobacterium nucleatum,* colorectal cancer

Abstract : PT-BS003

Broadened Receptor Binding Domain of SARS-CoV-2 Omicron XE Spike Protein Increases Transmissibility and Immune Evasion: A Genomic and Proteomic In Silico Exploration.

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Background: The SARS-CoV-2 Omicron variant has garnered global attention as a significant public health concern brought by its pronounced transmissibility and infectivity stemming from over 50 mutations as compared to the original Wuhan strain. These mutations have been proposed to grant the virus genetic advantages, leading to increased transmissibility despite its decreasing pathogenicity compared to earlier strains. Countries worldwide have started to ease their policy restrictions on COVID-19 as the World Health Organization declares the end to the virus as a global health emergency. Among the previous variants of concern was Omicron XE, a recombinant subvariant that has emerged to be a combination of Omicron BA.1 and BA.2. To date, information on the genome, spike (S) protein structure, and binding mechanisms of Omicron XE against the ACE2 receptor and existing antibodies remain scarce.

Objectives: This study aimed to elucidate the genome and protein structure of Omicron XE and assessed its binding affinity to the ACE2 receptor and existing antibodies.

Methods: We obtained nucleotide sequences of variants BA.1, BA.2, and XE from NCBI's viral database. Mutations were examined using the Wuhan-Hu-1/2019 strain (MN908947) as a reference, and the most common XE sequence (ON388961) was employed in the SWISS-MODEL Workspace/GMQE to predict the S protein structure. The predicted model was then subjected to docking analysis with the ACE2 receptor (PDB 7P19) and selected antibodies (PDB 7BZ5, 7S0B, 7FJO, 7WED, 7E7Y) using ClusPro, followed by visualization of the binding sites through PyMol and calculation of binding affinity with PRODIGY.

Results: Genomic analysis revealed a closer similarity between XE and BA.2 than with BA.1. Amino acid mutations led to decreased stability of the S protein brought by increased number of rotamers and torsional strain, compared to the Wuhan strain.

Discussion & Conclusion: Notably, the inactivated vaccine CoronaVac exhibited the highest affinity for the virus (ΔG= -47.7 kcal mol-1) indicating continuous conferred protection of existing vaccines against mutational strains despite the small S protein-antibody binding site. However, the broadened receptor binding domain suggests a compensatory mechanism of the virus to heighten its transmissibility and immune evasion in host infection.

Keywords: SARS-CoV-2 omicron variant, mutations, genomic analysis, inactivated vaccine

Prevalence and Antimicrobial Susceptibility Profiles of Colistin-Resistant Enterobacterales in Intensive Care Units of a Tertiary Care Setting.

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Background: The increasing of multidrug-resistant (MDR) Enterobacterales in healthcare settings necessitates thorough investigations due to limited treatment options. The emergence of MDR in intensive care units (ICUs) significantly impacts vulnerable patients. Colistin has been considered as a last-line antibiotic for managing the infections by highly antibiotic-resistant bacteria. However, the recommended laboratory testing for colistin susceptibility in Enterobacterales is labour-intensive. Consequently, the occurrence of colistin-resistant Enterobacterales may be underestimated.

Objectives: To identify colistin-resistant Enterobacterales (CORE) prevalence in ICUs and other units and study antimicrobial susceptibility profiles.

Methods: MDR Enterobacterales isolates were collected from Pranangklao Hospital between November 2022 and March 2023. Bacteria; isolates from all specimen types were collected from ICUs, while isolates from blood and sputum were collected from other units. Colistin resistance was detected if the growth shown on Mueller Hinton Agar (MHA) supplemented with colistin 3 µg/ml. Antimicrobial susceptibility was performed using disk diffusion followed CLSI guideline.

Results: Ninety-eight MDR Enterobacterales isolates, consisting of 61 *Klebsiella pneumoniae* (KP), and 37 *Escherichia coli* (EC) were obtained. Among these, 40 isolates were from ICUs. Colistin resistance was found in 8 isolates, with 6 being KP and 2 being EC. The prevalence of colistin-resistant Enterobacterales (CORE) among MDR isolates in ICUs was 3/40 (7.5%). Among non-ICU isolates, two EC isolates were recovered from blood culture samples. Overall, our CORE isolates show reduced susceptibility to third generation cephalosporins, amoxicillin/clavulanate, amikacin, ciprofloxacin, and trimethoprim/sulfamethoxazole. All colistin-resistant KP also demonstrated carbapenem resistance, while colistin-resistant EC remained susceptible. Surprisingly, 49/98 MDR isolates (50%) were carbapenem-resistant Enterobacterales (CRE).

Discussion & Conclusion: CORE isolates were detected in both ICUs and blood samples. This finding indicated the serious infection by CORE. Colistin-resistant KP and EC are resistant to multiple drugs including carbapenems. Interestingly, colistin-resistant KP and EC showed different susceptibility to carbapenems which may represent different resistance mechanisms. This study highlights the need of monitoring susceptibility profiles of MDR Enterobacterales, particularly in units with vulnerable patients.

Keywords: colistin resistance enterobacterales, carbapenem resistance enterobacterales, MDR, antimicrobial susceptibility profiles, ICU

Abstract : PT-BS005

Enhancing Wound Healing with Apple Plant Stem Cell-Loaded PAA/Alginate Nano-Hydrogel.

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Background: Incorporating apple stem cells into the PAA/Al scaffold was found to enhance its regenerative properties and improve wound healing efficiency. The hydrogel was subjected to various morphological, physical, and cellular assessment tests.

Objectives: This study aimed to investigate the cultivation and extraction of apple plant stem cells and their potential application in wound healing using a Polyacrylic acid (PAA)/Alginate (Al) nano-hydrogel.

Methods: The nano-hydrogel, with a porous structure and a size of 65 nanometers, closely resembles the extracellular matrix. The composite scaffold of PAA-alginate/apple stem cells offers numerous advantages for tissue engineering applications. The study also investigated the impact of the hydrogel on skin fibroblast cells and observed that the presence of flavonoid and polyphenol groups in the hydrogel had positive effects on antioxidant, anti-inflammatory, and regenerative properties. The uniform structure of the hydrogel, its increased transparency, and its hydrophilic nature create an optimal environment for wound healing. These characteristics facilitate the diffusion of oxygen and nutrients to the wound site while maintaining a moist environment, promoting effective wound healing. Additionally, the nano-hydrogel demonstrated efficient absorption of the apple stem cell extract, enabling the delivery of beneficial properties such as antioxidants and anti-inflammatory effects to the wound site.

Results: These properties contribute to tissue regeneration and reduce inflammation, both crucial for successful wound healing. The addition of apple stem cell extract increased the surface tension of the hydrogel, making it relatively hydrophilic. Importantly, the study confirmed the non-toxicity and good biocompatibility of the hydrogel, making it a promising candidate for wound healing applications. Furthermore, the study highlighted the potential of apple plant stem cells in promoting cell regeneration and repair, thereby improving the overall wound-healing process.

Discussion & Conclusion: In conclusion, the findings of this study suggest that the PAA/Al nano-hydrogel containing apple plant stem cells has the potential to be an effective and safe treatment for wound healing. Further research and development in this field could lead to the practical application of this hydrogel in clinical settings.

Keywords: wound healing, apple plant stem cell, nano-hydrogel

Abstract : PT-BS006

Towards Alternative Treatment for Type 2 Diabetes: An In Silico Analysis of Sponge-Derived Marine Bioactive Compounds on PTP1B and DPP-4.

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Background: Type 2 Diabetes is a medical condition involving pathophysiological manifestations of atypical blood glucose levels due to impaired insulin receptor sensitivity. As the number of Type 2 Diabetes cases increases each year, there is a proportional necessity to design and develop drugs that are competent with respect to the existing market. Marine-derived compounds, specifically that of sponge origin hold great potential due to their biological and chemical diversity. In this study, 50 were examined for their bioactivity towards Type 2 Diabetes targets, Dipeptidyl Peptidase-4 (DPP-4) and Protein Tyrosine Phosphatase 1B (PTP1B) through computational means.

Objectives:

1. To assess binding free energy scores of the 50 compounds against PTP1B and DPP-4
2. To subject the top 10 compounds for each protein to ADMET profiling and key interaction analysis to determine their drug-likeness and characterize the binding pockets.
3. To identify a potential multi-target inhibitor for DPP-4 and PTP1B and confirm its validity through molecular dynamics simulations.

Methods: This study used the following computational techniques: AutoDock, ADMET analysis, Key interaction analysis, and molecular dynamics simulation.

Results: Docking results displayed spontaneous binding for the majority of the compounds, with plakinamine K and papuamine having the most ideal binding free energy scores for DPP-4 and PTP1B respectively. Observed ligand-receptor interactions for the top 10 compounds for each protein were noted to be similar to those experienced by the original bound inhibitors in the selected co-crystal structures. ADMET profiling reported drug-like behavior of the aforementioned top compounds with 1,5-diazocyclohenicosane and 5-bromoindole-3-acetic acid displaying the most suitable properties for DPP-4 and PTP1B respectively. Among these, (S)-6'-debromohamacanthin B (SDB) was determined to be a lead compound given its notable performance with the two proteins. The final analysis validated all previous results and concluded favorable PTP1B-SDB and DPP-4-SDB complex formations.

Discussion & Conclusion: The role of computational methods in drug design and development has grown in importance due to its capacity to fast-track identification and optimization of lead compounds. In this study the competency of sponge-derived compounds as alternative drugs were measured in which (S)-6'-debromohamcanthin B was determined to have multi-target capacity towards Type 2 Diabetes proteins PTP1B and DPP-4.

Keywords: computational, marine-derived, bioactive compounds, type 2 diabetes, alternative

Abstract : PT-BS007

Gut Microbiota and Pharmacokinetics of *Polygonum cuspidatum* in the Treatment of Hyperuricemia.

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Background: *Polygonum cuspidatum* is a traditional Chinese medicine widely used in the treatment of gout and hyperuricemia. Contrary to most urate-lowering medicines in clinical practice, it exhibits little toxicity for the liver and kidney. Meanwhile, its amelioration of gut microbiota dysbiosis has been proved in various other diseases. Hyperuricemia damages liver and kidney and is strongly associated with intestinal dysbacteriosis, which may change the pharmacokinetics of *P.cuspidatum* in vivo.

Objectives: The aim of this research was to investigate the effects of hyperuricemia on the pharmacokinetics of *P.cuspidatum* and identify the main urate-lowering monomers. The alteration by hyperuricemia and improvement by *P.cuspidatum* in gut microbiota were explored to determine whether gut microbiota can be a potential biomarker for hyperuricemia. These studies will provide a basis for personalized and precise treatment of hyperuricemia in terms of pharmacokinetics and gut microbiota.

Methods: *P.cuspidatum* extracts were administered to hyperuricemic rat models established by adenine and potassium oxonate. The levels of uric acid (UA), blood urea nitrogen (BUN) and creatinine (CREA) and renal pathology were detected. Optimized high-performance liquid chromatography coupled with tandem mass spectrometer (HPLC-MS/MS) was applied to test 7 monomers of *P.cuspidatum* in blood samples taken in blank and model administration groups. The drug concentration-time curves of 7 monomers were constructed and the pharmacokinetic parameters were calculated. The 16S rRNA of gut microbiota was sequenced.

Results: *P.cuspidatum* extracts significantly alleviated increases in UA, BUN and CREA, and structural damage of kidney. Moreover, pharmacokinetic study demonstrated an elevated bioavailability of glucosides such as polydatin and emodin-1-O-glucoside and a lowered bioavailability of aglycons such as resveratrol and emodin in model groups. Additionally, hyperuricemia decreased the abundance of beneficial gut microbiota such as *Bacteroidetes*, *Bacillus* and *Acidobacteria*, while *P.cuspidatum* restored these alterations.

Discussion & Conclusion: Our findings determined the main urate-lowering monomers of *P.cuspidatum* and their therapeutic effects on gut microbiota dysbiosis, and elaborated that hyperuricemia can change the pharmacokinetics of 7 monomers of *P.cuspidatum*. Furthermore, gut microbiota and β-glucosidases secreted by *Bifidobacteriaceae* and *Bacillus* might be the potential biomarkers for personalized and precise treatment of hyperuricemia and a potential mechanism modulating the bioavailability of different monomers of *P.cuspidatum*.

Keywords: polygonum cuspidatum, hyperuricemia, pharmacokinetics, gut microbiota

Abstract : PT-BS008

Role, Diversity and Distribution of Quorum Sensing System Systems in Pathogenic Clostridia.

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Background: *Clostridium perfringens* causes various diseases in humans and animals. Quorum sensing (QS) is a form of cell-to cell communication which is important in bacterial toxin regulation. QS in *C. perfringens* consists of an agr-like system and a two-component system, mainly the VirS/VirR system. The agr-like system consists of AgrD, the peptide precursor for autoinducing peptide (AIP), and transmembrane protein AgrB.

Objectives: Use bioinformatic analyses of AgrD to establish diversity and distribution of AgrBD systems encoded in the available *C. perfringens* genomes.

Methods: Blastp search was performed on two original AgrD sequences to obtain more AgrD systems. Then, regarding all unique AgrD systems, a search was conducted to find all strains of *C. perfringens* containing each system and to find one AgrB sequence adjacent to each system. Afterwards, Clustal Omega was used to perform multiple sequence alignment and NGPhylogeny was used to conduct a phylogenetic analysis. Lastly, establishment of *C. perfringens* strain toxinotype was conducted using the *C. perfringens* NCBI taxonomy browser and by finding previous studies that include specific strains.

Results: The results showed 13 unique AgrD sequences present in *C. perfringens*, where the number of strains that each AgrD system can be found in vary vastly. Some AgrD sequences are present in more than one strain. Clustal Omega alignment showed that some sequences are very similar to each other whilst some are very different. Phylogenetic analysis using NGPhylogeny showed that most AgrD systems are very closely related to each other, but some can be distant. Establishing *C. perfringens* toxinotype revealed that some AgrD systems are only found in type A strains, but some AgrD systems are located on all toxinotypes.

Discussion & Conclusion: Phylogenetic analysis was performed on the AgrD systems revealing a significant genetic diversity. Additionally, there was no association between the AgrD systems and *C. perfringens* toxinotypes.

Keywords: pathogenic clostridia, quorum sensing, cell-to-cell communication, clostridium perfringens

Abstract : PT-BS009

Prevention of Nipah Virus Pandemic in Indonesia : In-silico Design of Primers for Isothermal PCR for Field Surveillance.

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Background: Just recently, on September 25th, 2023 Indonesia Ministry of Health released an announcement for the alert on Nipah disease. For a long period, Indonesia has relied on conventional PCR or real-time PCR to detect Nipah virus (NiV) such as reported in 2014 by the Indonesian Research Institute for Veterinary Science, Indonesia Ministry of Agriculture. After the COVID-19 Pandemic, the Indonesia Ministry of Defense has joined forces with the Indonesia Ministry of Health in active surveillance to protect the Nation from the potential next Pandemic.

Objectives: To support this effort, here we design sets of primers for isothermal PCR for field surveillance which can be performed by front-line soldiers in outposts, and remote areas.

Methods: Sixteen sequences from two strains (NiV-M and NiV-B) were downloaded from GenBank and aligned to find target sequences. N (nucleocapsid) genes in two strains (accession numbers: JN808864 and AY029767.1) were selected and primers were designed *in-silico* using the NEB LAMP Primer Design application. Primer specificity was tested through BLASTN. *In-vitro* test of the primers was performed using synthetic genes as template. The results were compared with previously used primers for conventional PCR.

Results: The N gene of the Bangladesh and Malaysia strains was used for *in-silico* primer design which resulted in primer sets specific only to the Nipah virus. The N gene is shown to be the most conserved gene out of all six genes of the Nipah virus (N, P, M, F, G, and L), therefore it was chosen as the core of our design. All the designed sets of primers show 100% specificity to the Bangladesh and Malaysia strains. These primers vary in length, GC%, and location on the strain. *In-vitro* test showed high specificity and sensitivity against the target.

Discussion & Conclusion: Original primers have been designed in-silico and tested in-vitro for detecting the Nipah virus using isothermal PCR. The technique can be used in field surveillance by limited facilities and un-trained personnel thus widening the effectiveness of prevention of the Nipah outbreak in Indonesia.

Keywords: isothermal PCR, nipah virus, primer design, in-silico, in-vitro

Oxymyoglobin Proximal and Distal Residues Mutational Substitution.

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Background: Gas exchange, particularly the transfer of oxygen (O_2) and carbon dioxide (CO_2), is fundamental for sustaining life. Muscles, with their high energy demands for ATP production, rely on efficient O_2 transport and storage. Myoglobin, a globular hemoprotein, plays a crucial role in this process. Understanding how mutational substitutions of polar amino acids impact the binding affinity of O_2 to oxymyoglobin is of great interest

Objectives: Aims to investigate how mutagenesis of an increasing range of polar amino acid residues, at the distal His-64 (E7) and proximal His-93 (F8) ligand-complex, affect the enzyme-substrate binding affinity of O_2 to Fe^{2+} ion in the aromatic porphyrin ring in oxymyoglobin?

Methods:

1. In a PyMOL command bar: fetch “1mbo
2. Pymol command bar: “hide nonbonded
3. Pymol command bar: “hide cartoon”
4. Select oxymyoglobin heme ligand and its oxygen, and rename the structure as “heme”
5. Copy the code to Pymol command bar: “show sticks, byres all within 5 of heme”
6. Select all amino acids residues that appear within 5 Angstrom, except “distal His-64 (E7) and proximal His-93 (F8)” and hide/ or delete it
7. Select a Wizard tool ⟶ Mutagenesis ⟶ Protein, then select distal His-64 (E7), then select proximal His-93 (F8), and select any residues. The following measurement of the length of polar contact should appear for further interpretation
8. Repeat the trials again with different residues

Results: Highly hydrophobic residues, including Phenylalanine, Isoleucine, Tryptophan, and Leucine, exhibited constant polar contact lengths, indicative of low solubility in water. Slightly less hydrophobic residues like Valine and Methionine displayed decreased polar contact lengths and increased binding affinity.

Neutral residues, such as Tyrosine, Cysteine, and Alanine, showed diverse responses. Alanine, moderately hydrophobic, exhibited reduced polar contact lengths and increased binding affinity. Tyrosine, despite being hydrophobic, exhibited successful mutational substitution

Hydrophilic residues, like Arginine, Lysine, Asparagine, Glutamate, Proline, and Aspartate, displayed varying effects on polar contact lengths and binding affinity. These complexities arise from polar forces within these residues.

Discussion & Conclusion: Sheds light on how mutagenesis of polar amino acids influences O_2 binding affinity in oxymyoglobin.In conclusion, mutational substitutions of polar amino acids in oxymyoglobin affect O_2 binding affinity, impacting the protein's function in oxygen storage and transport.

Keywords: oxymyoglobin , proximal , distal , residues , mutagenesis

Abstract : PT-BS011

How to Create New Virus Strain : Reduce Pathogenicity and Neuroinvasiveness of Rabies lyssavirus (RABV).

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Background: Rabies is the deadliest zoonotic disease in the world with a Case Fatality Rate (CFR) of up to 100% when it causes symptoms. The rabies virus belongs to the Lyssavirus genus of the Rhabdoviridae family which has negative sense ssRNA genetic material with a genome size of about 12 Kb. This genome encodes five viral structural proteins, namely: Nucleoprotein (N), Phosphoprotein (P), Matrix Protein (M), Glycoprotein (G), and RNA Polymerase (L). Protein G is the only protein that is on the surface of the virion and has a receptor that will bind to target cells and induce the humoral immune system, such as the production of virus-neutralizing antibodies (VNA). The G protein has a very important role in the pathogenicity and neuroinvasiveness of RABV, differences or mutations in the glycoprotein strains can provide differences in RABV virulence.

Objectives: *In-silico* research to describe the evolutionary pathway of glycoprotein proteins from several pathogenic and non-pathogenic strains of RABV, then identified conserved amino acid mutations that influence RABV pathogenicity and neuroinvasiveness.

Methods: The strains used in this study include several Glycoprotein sequences taken from the National Center for Biotechnology Information (NCBI). Flury–HEP Glycoprotein sequences with accession numbers: ADD84790.1, Glycoprotein GD-SH-01: AFP36386.1, Glycoprotein JX08-48: ACN71185.1, Glycoprotein GX4: ABI53874.1, Glycoprotein HN10: ACF42344.1, Glycoprotein F04: ACN65049.1, CVS-11 Glycoprotein: ADJ29911.1, and CVS-B2C Glycoprotein: AAB97691.1. Next, the sequence will be aligned using ClustalW Multiple Alignment, structure prediction with Swiss Model and Visualization with PyMol.

Results: More than one amino acid is required to analyze the complex reactions that establish pathogenicity and neuroinvasiveness in RABV. Amino Acid Mutation Analysis of RABV pathogenic-nonpathogenic strains was found selectively in G19(Ile⟶Leu), G96(Ser⟶Ala), G132(Phe⟶Leu), G194(Asn⟶His), G243(Ile⟶Met), G333(Arg⟶Gln), and G349(Gly⟶Glu). The Arg⟶Gln G333 mutation in the strain was found to significantly reduce the pathogenicity of the RABV virus. The Gly⟶Glu G349 mutation causes the induction of higher titers of virus-neutralizing antibodies (VNA) to prevent neuroinvasiveness.

Discussion & Conclusion: In conclusion, potential amino acid mutations that could reduce the pathogenicity and neuroinvasiveness of RABV were discovered. Creation of new RABV glycoprotein coding strain gives hope of reducing the CFR rate of this virus.

Keywords: rabies, glycoprotein, mutation, amino acid

Abstract : PT-BS012

Examining the 30-minute Rule and the Relationship between Volume and Surface Temperature of Red Blood Cell Units.

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Background: Storage temperature of red blood cell (RBC) units is important for maintaining RBC viability. To ensure safe RBC transfusion, the 30-minute rule suggests that RBC units exposed to uncontrolled temperature storage (1-6℃) for >30 minutes should not be returned to storage for reissue. The guideline, however, does not include the effects of RBC volume on the temperature of RBC units.

Objectives: We aim to find the correlation between RBC volume and surface temperature of RBC units, and examine the efficacy of the 30-minute rule within normal temperature range in hospital settings.

Methods: Nineteen leukocyte poor packed red blood cells (LPRC) and leukodepleted red blood cells (LDPRC) were categorized into two groups: 8 RBC units with volume <200 cc (RBCV<200), and 11 RBC units with volume 200 cc (RBCV≥200). All RBC units were exposed to surrounding temperature between 20-25°C for 30 minutes. RBC surface temperature is measured every 30 seconds after discharge from storage by the infrared thermometer.

Results: Of 19 RBC units, the mean initial temperature was 6.6℃ ± 0.8: 6.3℃ ± 0.5 for RBCV<200, and 6.9℃ ± 0.8 for RBCV≥200. The mean time taken to reach 10°C in all RBC units was 10 minutes and 54 seconds. RBCV<200 and RBCV≥200 took 10 minutes and 30 seconds, and 11 minutes and 11 seconds, respectively. RBCV<200 reached mean surface temperature of 9.4℃ at 10 minutes, 11.5℃ at 20 minutes, and 13.3℃ at 30 minutes. RBCV≥200 reached mean surface temperature of 9.6℃ at 10 minutes, 11.4℃ at 20 minutes, and 13.0℃ at 30 minutes.

Discussion & Conclusion: Our study shows that there is no statistical significance in mean time to reach 10℃ between these two groups (p= 0.577). Other possible factors such as initial surface temperature of RBC or ambient temperature could have an impact. Additionally, our study found that all RBC units in both groups left at room temperature exceed 10℃ between 10 and 11 minutes. Therefore, the 30-minute rule should be revised, with specific RBC characteristics as an important element.

Keywords: blood volume, red blood cell, 30-minute rule, surface temperature

Abstract : PT-BS013

Genomic Mining for Novel Bacteriocins that may be Active Against Clostridiodies Difficile.

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Background: *Clostridiodies difficile* infection (CDI) is recognised as a leading healthcare problem worldwide and with the present reliance on antibiotics treatment, resistance may arise and propose a risk to future infections. Bacteriocins are ribosomally synthesized peptides that undergo post-translational modification and have shown potential antimicrobial activity against *C. difficile* such as bacteriocin thuricin CD.

Objectives: This investigation aims to identify bacteriocins that may show antimicrobial activity against *C. difficile* using bioinformatics tools.

Methods: The study is conducted by using gastrointestinal microbiota genomes that share homology with *C. difficile* to undergo the Bagel 4 genome mining program and identify the area of interest where potential bacteriocins are. Further analyses are assisted by using reference genome database searches such as Blast protein search and Pfam motif search for the identification of gene cluster functions. Alignment programs such as Clustal omega and emboss needle are used to identify any residue conservations to the original bacteriocin where similarity and identity can be identified.

Results: Forty-seven AOIs are discovered from a total of 77 selected bacterial species including 11 class I bacteriocins, 18 class II bacteriocins, 3 Class III bacteriocins and 15 unclassified peptides.

Discussion & Conclusion: Five bacteriocins belonging to the 3 classes of bacteriocins are selected for analysis. Gallidermin identified from *B. megaterium* as class I bacteriocin and acidocin J1132 found from *L. acidophilus* as class IIb bacteriocin are found with the most promising results where gene clusters required for biosynthesis, high similarity alignments and literature evidence were demonstrated. In conclusion, further wet lab investigations should be performed on gallidermin and acidocin J1132 bacteriocins to characterize and identify potential activity against *C. difficile*.

Keywords: "Clostridiodies difficile infection" "Bacteriocins"

Public Health and Epidemiology Research

Abstract : PT-PE001

The Relationship between Food Consumption Behavior and Nutritional Status of Pre-school Children (age 3 - 5 year old) in Watkhaenork school in Bang Kraso Sub-District, Mueang Nonthaburi District, Nonthaburi.

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Background: Proper and adequate dietary intake of essential nutrients not only helps children to have good health, intelligence and develop to their full potential, but also reduces the risk of contracting non-communicable diseases significantly, which in turn enables them to develop necessary life skills required to be good, quality and smart citizens.

Objectives: In This survey research was to examine the relationship between eating behaviors and nutritional status of preschool children aged 3-5 years at of WatKhaenork School, Bang Kraso, Mueang Nonthaburi, Nonthaburi and to investigate eating behaviors and nutritional status of preschool children aged 3-5 years in general.

Methods: It was a cross-sectional descriptive and retrospective descriptive study. This research which used descriptive surveys to collect data from 100 preschool children aged 3-5 years of at Watkhaenork School, Bang Kraso, Mueang Nonthaburi, Nonthaburi. The descriptive statistics including frequencies, percentages, means, medians, standard deviations, minimums, maximums and chi-square values were then presented in tables.Including frequencies, percentages,means, medians, standard deviations, minimums, maximums, and chi-square values.

Results: The findings of our study showed revealed that the nutritional status of there were 78% of preschool children whose nutritional status was considered average, while 12% out of all the participants 12% were of below-average nutritional status. The rest of them 10% were of above- average nutritional status. Based on the results of the assessment of their health and dietary behaviors, the majority of the children (83%) had good health and dietary behaviors, while those of 9% had moderate and the rest 8% of preschool children maintained them were considered moderate and excellent health and dietary behaviors. Respectively, In terms of the relationship between their nutritional status and eating behaviors, most of them (80.8%) were average nutritional status, with the highest level of excellence in their health behaviors.

Discussion & Conclusion: The nutritional status of majority most of preschool children (80.8%) was considered average, along with the highest level of excellence in their health behaviors. To examine the relationship between their nutritional status and eating behaviors, a chi-square test was conducted. However, the test yielded There was no statistical significance with as the a p-value being was of 0.363 ($p > 0.05$).

Keywords: food consumption behavior, nutritional status, pre-school children

Abstract : PT-PE003

Pre-exposure and Complete Post-exposure Rabies Vaccination in Phatthana Nikhom Hospital, Lopburi.

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Background: Rabies spreads to humans by mammals' saliva and leads to mortality nearly 100 percents. Post exposure rabies vaccination is essential. Prevalence of incomplete post-exposure rabies vaccination was more than 20 percents. Moreover, there was evidence of the association between adequate knowledge about rabies vaccination and incompleted vaccination. In this project, we aimed to study whether the history of having pre-exposure rabies vaccination and other factors will associate with complete post-exposure rabies vaccination or not. The results could lead to suitable solutions to accomplish complete post-exposure rabies vaccination in Pattananikom district.

Objectives:

1. Study the general conditions of epidemic and characteristics of the Rabies exposures patients. The accession of rabies vaccine in Pattananikom district community and process according to outbreak measure.

2. Study the number of people who completed Rabie vaccination in each criteria.

3. Seeking for the reasons that may affect the succession of completed vaccination.

Methods: We had done a retrospective cohort study from secondary data of Pattananikom hospital database The inclusion criteria is patients who have visited Phatthana Nikhom hospital due to mammal bite and have received post-exposure rabies vaccination.

Results: The incidence of complete post-exposure rabies vaccination was 69 percents. Having pre-exposure rabies vaccination was associated with complete post-exposure rabies vaccination. male (aOR 0.81, 95%CI 0.67 - 0.97), 15-59 years old (aOR 0.76, 95%CI 0.60-0.95), universal coverage scheme (aOR 0.55, 95%CI 0.37-0.82), social security scheme (aOR 0.43, 95%CI 0.13-0.58), payment(aOR 0.28, 95%CI 0.13-0.58), third month quarters(aOR 0.78, 95%CI 0.61-1), and Huaykhunram sub-district(aOR 1.65, 95%CI 1.02-2.69), associated with complete post-exposure vaccination.

The incidence of completed post-exposure rabies vaccination was lower in this setting. Age, gender and health scheme were associated with completed rabies vaccination.

Discussion & Conclusion: For further studies, the system supporting follow-up targeted patients should be established in the community hospital setting. Moreover, the sustainable interventions on this issue by participatory learning development of the community is needed.

Keywords: rabies, complete post-exposure rabies vaccination, pre-exposure rabies vaccination

Abstract : PT-PE004

A Follow-up Study of Infection Dynamics of Liver Fluke Infections in Non-endemic Area of Rural Community in Central Thailand, Phase 2.

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Background: *Opisthorchis viverrini* (*Ov*) infection is one of the public health problems in Thailand. Chronic *OV* infection is associated with cholangiocarcinoma. Our recent cross-sectional study conducted in a non-endemic area of rural community in central Thailand revealed the prevalence of *Ov* infection in 2022 was 2.11%, which was higher than the regional average. This study aimed to follow up on infection dynamics, including incidence risk factors, from quantitative and qualitative approaches.

Objectives: This study aimed to follow up on infection dynamics, including incidence risk factors, from quantitative and qualitative approaches.

Methods: A retrospective cohort study was conducted to evaluate the incidence and risk factors of *Ov* infection. Stool examination methods, including Kato-Katz and PBS ethyl acetate concentration techniques, were performed to detect *Ov* eggs. A standardized questionnaire was used to assess risk behaviors. Participants with positive *Ov* results were enrolled in In-depth interviews for qualitative study.

Results: The incidence of *Ov* infection was 2.61%. Poisson regression analysis showed consumption of Koi-pla, a traditional raw fish menu, (RR = 8.25, 95% CI = 1.01-67.1) and age 60 years and older (RR = 4.98, 95% CI = 1.02-24.7) were independently associated with *Ov* infection. Findings from the In-depth interviews indicated that inadequate knowledge, misbeliefs, and social and cultural mores were important factors leading to the maintenance of risky behaviors.

Discussion & Conclusion: Study results are consistent with our previous study, indicating the persistent infection dynamics, including the burden of infection and contributions from risk factors in this non-endemic rural community.

Keywords: Opisthorchis viverrini infection, Ov, cholangiocarcinoma, koi Pla

Abstract : PT-PE005

Potential Hazard and Work Risk Control on Sidomakmur Farmers Group in Bandar Lampung City.

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Background: Indonesia is one of the agricultural countries that produces numerous paddy in each year. In 2021, the production of rice in Indonesia reached 54,42 million tons. Besides, the health and well-being of the farmers are often neglected. Only a few of the farmers care about their health and well-being. Meanwhile, working as a farmer poses various risks that can affect their health and well-being.

Objectives: This study aimed to identify potential hazards at the workplace and control the work risk.

Methods: This study identifies potential hazards through observation and uses the Job Safety Analysis (JSA) instrument. We evaluate the potential hazards that may happen and put the result on the Risk Assessment Matrix (RAM) and the Urgency, Seriousness, and Growth (USG) analysis, then continue to control the work risk through an intervention.

Results: Sidomakmur farmers group established on 2008 with total 40 farmers. The rice production begins with planting, spraying with pesticides, and harvesting. We identified all potential hazards using Job Safety Analysis (JSA) and classified them by categories such us biological, chemical, ergonomic, physical, and psychosocial. We analyzed the result with Risk Assessment Matrix (RAM) and classified it as low, medium, and high risk. We found 16 potential hazards with 9 low and 7 medium risks. We continue to analyze medium risks with Urgency, Seriousness, and Growth (USG) analysis. The USG analysis found that spraying paddy with pesticides without using appropriate Personal Protective Equipment (PPE) is the major work risk on Sidomakmur farmers group with total USG score 15. We continue to give an intervention to control the hazards and risks with administrative controls such as making a manual guide for pesticide use regarding the regulation of the Ministry of Agriculture and engaging them to use appropriate PPE.

Discussion & Conclusion: We observed the production process at the farmer's rice fields. The environment was sweltering, slick soil, and dusty. We found that the farmers didn't use appropriate Personal Protective Equipment (PPE). We help them to do administrative control and engage farmers to use appropriate PPE by doing an intervention. However, the consciousness of the farmers is essential to make it happen.

Keywords: farmers, potential hazard, work risk

Abstract : PT-PE006

Running Musculoskeletal Injuries and Associated Factors of Musculoskeletal Injuries Among Half–Marathon Runners: A Study from BS21 Half–Marathon 2022.

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Background: Half marathon events have reported a concerning musculoskeletal injury rate of up to 23.9%, profoundly affecting runners' performance and race completion. Despite rigorous pre–event training, a substantial number of musculoskeletal injuries persist. Knowledge of additional factors contributing to musculoskeletal injuries in half marathon events can be used to empower future runners to assess their injury risk in advance and make necessary preparations. Additionally, it can offer insights for the medical team of Bangsaen21 to improve their healthcare services.

Objectives: This study aimed to evaluate the incidence of musculoskeletal injuries and investigate the risk factors of musculoskeletal injuries occurring in runners in Bangsaen21 half–marathon 2022.

Methods: This retrospective cross-sectional study collected health data of 3,165 runners from health survey questionnaires before the race. We also collected runners' injury data from 12 medical services stations who came in to receive treatment voluntarily. We reported the association between risk factors and musculoskeletal injuries using logistic regression analysis.

Results: The study revealed an incidence rate of musculoskeletal injury was 6.0%. The three most frequently occurring musculoskeletal injuries were leg strain (1.1%), ankle strain (1.0%), and muscle cramp (0.9%). Notably, several risk factors were associated with these injuries, including individuals aged 50 years or older (OR 2.73; 95% CI 2.03-3.67), female (OR 1.57; 95% CI 1.17-2.12), and previous marathon runners with over 20 participations (OR 1.37; 95% CI 1.02-1.84).

Discussion & Conclusion: Our study revealed a noteworthy association between musculoskeletal injuries and three key factors: runners aged over 50, female runners, and those with more than 20 marathon participations. However, prior running injuries or being underweight or overweight were not significantly associated to musculoskeletal injuries. Repetitive trauma and advanced age seem to influence musculoskeletal injuries of runners in our study. We also recommend that runners with these risk factors proactively develop tailored training programs, consider nutritional adjustments, and utilize protective gear to mitigate the risk of injuries effectively.

Keywords: musculoskeletal injury, risk factors, half marathon

Abstract : PT-PE007

The Challenges to Global Surgery in Asia Pacific – A Literature review.

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Background: Surgery is a crucial aspect of healthcare, but five billion people worldwide lack access to safe, timely, and affordable surgery. The Asia Pacific region faces unique challenges in providing surgical care, and there is a need for further research to understand the contextual challenges to global surgical care provision in low-resource settings in this region.

Objectives:

- To identify the common challenges to global surgery in the Asia Pacific region
- To analyze the contextual differences in the provision of surgical care
- To provide recommendations for policymakers and stakeholders
- To contribute to the global effort to advance and expand access to safe, timely, and affordable surgical care, particularly in low-resource settings.

Methods: A systematic literature search was conducted using electronic databases such as PubMed, Scopus, Google Scholar, and Elicit. Relevant articles published in English between 2010 and 2023 were included. The selected articles were analyzed using a thematic analysis approach.

Results: The literature review identified limited access to surgical care, financial constraints, inadequate surgical capacity, health system challenges, cultural and social factors, and policy and governance issues as common challenges to global surgery in the Asia Pacific region. The review also highlighted the contextual differences in the provision of surgical care in low-resource settings in the region. The effectiveness of existing interventions and policies aimed at improving access to surgical care was evaluated, and recommendations were made for policymakers and stakeholders to address the identified challenges. The recommendations for policymakers and stakeholders include investing in infrastructure and resources, increasing funding for surgical care, and developing sustainable interventions that are tailored to the local context.

Discussion & Conclusion: This literature review highlights the urgent need for action to address the challenges to global surgery in the Asia Pacific region. Addressing these challenges requires a comprehensive and sustainable approach that considers the local context and tailors interventions to the specific needs of each community. This literature review contributes to the global effort to advance and expand access to safe, timely, and affordable surgical care, particularly in low-resource settings.

Keywords: global surgery, asia-pacific, challenges, literature review

Abstract : PT-PE008

Knowledge and Attitude of High School Students in Thailand Towards Organ Donation and Transplantation.

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Background: Organ transplantation is a life-saving procedure whose key obstacle is a lack of donated organs. To help solve this, countries with higher registered donor rates have targeted and found success through adolescents, who are more willing to change their beliefs and encourage others to register. They surveyed high school students' knowledge and attitude regarding organ donation and transplantation (ODT) and used the findings to design ODT promotions, which studies confirmed to be effective in improving youths' knowledge, willingness to register, and initiation of family discussion on donation.

Objectives: This study aims to gauge the baseline knowledge and attitude of high school students in Thailand towards ODT, which has not been previously done, seeking to improve Thai organ donation campaigns.

Methods: An online survey was disseminated to high school students in Thailand via social media. The survey examines the students' knowledge by checking their awareness of five basic facts one should know before registering. It examines attitude by asking for registration status (registered, want to register, unsure, do not want to), motivations behind each status, and the sources students receive and want to receive information about ODT.

Results: The survey yielded 127 responses. 51.97% want to register, but only 7.89% are registered donors. 7.09% do not want to register, while 33.07% of participants are unsure. Factors such as having knowledge about ODT, a pro-organ donation environment, and altruistic desires correlate with registering. Concerns about body mutilation and anti-organ donation beliefs hinder it. On average, participants were aware of 3.13 out of 5 facts, which suggests they still lack knowledge. The sources from which participants received information differ from what they would prefer to a statistically significant extent, highlighting that student desires and current promotions are mismatched.

Discussion & Conclusion: ODT promotion should instead be done as a high school outreach program that brings to schools health workers to increase students' knowledge of ODT, organ recipients or donors as guest speakers to increase students' "personal experience" and "altruistic desire to help." Lastly, it should cover students' concerns about body mutilation and anti-organ donation beliefs, and tell students how to register as organ donors.

Keywords: high school, knowledge and attitude, organ donation promotion, organ donation, organ donor

Abstract : PT-PE009

Dehydration Status in The Supply Worker of Songkhlanagarind Hospital.

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Background: Prolonged exposure to heat during work can lead to dehydration and heat-related illnesses. The lack of awareness of workers hence to the severity complications such as coronary heart disease, cerebrovascular, respiratory disease, kidney disease, or death. Therefore, it's important to prevent these health conditions by using the early biomarker. The different of urine specific gravity is one of biomarker to determine the dehydration status. In particularly, there were limited studies on the dehydration of indoors worker, especially in health care facilities.

Objectives: To study the differences of specific urine gravity during pre- and post-shift in the supply worker of Songkhlanagarind hospital

Methods: This cross-sectional study was performed in Songkhlanagarind hospital included department of medical instrument supply, nutrition, and laundry center during December 2022 – April 2023. General characteristics of participants were collected by using questionnaire. Heat stress levels in working areas were measured by WBGT monitor. The urine collection was performed to determine the urine specific gravity (USG) for 3 continuous shifts. All data were analyzed by using one-way ANOVA with a significantly p-value at < 0.05.

Results: There were totally 46 voluntary participated workers (Male 69.6%, Female 30.4%). The mean age was 37 ± 8.2 years with the working experience 7.58±7.69 years. The average of WBGT heat stress index was highest at dry clothing task of the laundry center (30.78±0.42 oC WBGT) The significantly different of USG of all workers were found in the 3rd shifts while the nutrition supply and laundry center workers were found at the 2nd and 3rd shift, respectively. In addition, the different of USG were significantly increasing at the 2nd (0.0005 ± 0.0082) and the 3rd (0.0017 ± 0.0065) shift when compared with the 1st shift (0.0001 ± 0.0072).

Discussion & Conclusion: The hospital supply workers who work near by the indoor heat source in their workplace trend to have the dehydration status.

Keywords: dehydration, urine specific gravity, indoor worker, hospital

Abstract : PT-PE010

Prevalence and Factors Associated with Falling Among Elderly in Rural Area, Thailand.

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Background: Falls in the elderly is a significant health concern due to the burden of current aging society. Falls can lead to severe injuries and long-term consequences, including hip fractures, head injuries, and disability.. The factors that contribute to falls in the elderly can be external, such as inadequate light and obstacles in movement, or internal, such as age-related changes in the body and medication use. Effective preventions to reduce the burden of falls in elderly are essential. The project aims to study the prevalence and factors related to falls among the elderly in Sa Kaeo province, Thailand.

Objectives: To find the prevalence of falling among the elderly and factors associated with falling and events of falling among the elderly in Phra Phloeng district, Sa Kaeo province, Thailand.

Methods: A cross sectional study were conducted using structured questionnaire to screen falling conditions. The questionnaire was applied to collect information on demographic characteristics, medical history, physical activity, home environment, and falls-related information such as frequency, cause, and frequency of falls.

Results: The study included 199 elderly with a mean age of 70.39±7.14 years. Among the participants, 131 (65.83%) were female. A majority of the subjects were either retired (57.83%) or engaged in agricultural occupations (36.14%). The prevalence of falls among the elderly was 50.25%. Factors associated with falling in elderly included female (OR=2.10, 95%CI [0.72,3.89]) , skipping breakfast (OR=2.67, 95%CI [0.71,6.27]), fear of falling (OR=1.09, 95%CI [1.3,6.13]), and cattle owning (OR=3.55, 95%CI [1.13,25.35]).

Discussion & Conclusion: This study showed a high prevalence rate of falls among the elderly in Sa Kaeo province, Thailand. Along with factors associated, with older aging, skipping breakfast, and fear of falling, Cattle owning, had been found and identified. Further studies should explore the mechanism of the associated factors of fall.

Keywords: falling, prevalence, associated factors, elderly, Thailand

Abstract : PT-PE011

The Survey of Demand of Wellness Center in Government Hospital.

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Background: Entering an aging society in many countries where fewer births than deaths, late marriages and few children were born. Healthy is a trend which taking care of their physical health and avoided from disease and illness. Chronic non-communicable diseases (NCDs) increasing and kills the most Thai people (more than 70%).

Objectives: Hence, This study aims to characteristics and interest of health promotion activities of wellness care between government hospital and currently wellness care. Moreover also provide a new wellness care in rural community and prevention in the healthy people before the NCDs be developed.

Methods: In this study has conducted mix methods by using quantitative analysis to describe demographic data in frequency, percentage. And qualitative analysis take Opened-question about knowledge of wellness and NCDs , Closed-end question about health promotion activities. As well about the demand of wellness care.

Results: The results from the questionnaire are Knowledge of Wellness and NCDs the results have show trend of participants answered(% from Descending order):Holistic care , Good long term , Knowledge, Change behavior , Prevention and promotion .Also health promotion activities results have show of participants answered(% from Descending order):Health check for prevention,Diet and control weight program, cancer screening , Psychotherapy and strength clinic.In summary the interested of establishing the wellness center : Interested

Discussion & Conclusion: Differences in each aspect between wellness care and traditional medicine. First of all, wellness care is sustainable in long term also Wellness Activities that have a high number of participant interested consist of Health check for prevention , Dietary and weight control program. As well to Prevention and promotion .In conclusion the questionnaire about Demand of wellness care result is interested in this project.

Keywords: wellness , NCDs, wellness center , wellness traveler, well activity

Abstract : PT-PE012

Assessment of HPV (Human Papillomavirus) Vaccine Literacy of Secondary School Teachers in an Urban Setting in India.

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Background: Cervical cancer is the third most common cancer in India, accounting for the second highest number of cancer deaths. In 2018, there were 96,922 new cases and 60,078 deaths from cervical cancer in India, contributing one-fifth of the global burden of cases and mortality. HPV is a well-established causative factor for about 99% of cervical cancer cases around the world.

Objectives: The study was aimed at assessing the HPV vaccine literacy of Indian secondary school teachers in an urban setting. The objectives were to assess their awareness about cervical cancer and HPV vaccination, and their attitude towards discussing cervical cancer and promoting HPV vaccination among their students and parents.

Methods: A descriptive cross sectional study was conducted. The study group consisted of 287 secondary school teachers, selected using cluster sampling, from BMC schools in Mumbai, who were willing to give informed consent. Responses to a pre-designed questionnaire were recorded through an appropriate Google form given to the participants.

Results: It was found that only 23% of the participants knew that HPV infection could lead to cervical cancer. 18% teachers knew that the infection was sexually transmitted, and a mere 13% knew the age group in which cervical cancer has the highest incidence. Only 28% of the participants knew there exists a vaccine to prevent cervical cancer, and that it is available in India.

Among the 96 participants who knew that the HPV vaccine prevented cervical cancer, 86% had a “good” attitude towards discussing and promoting the HPV vaccine. However, among 191 participants who did not know it, 70% had a similar “good” attitude.

Discussion & Conclusion: With the recent launch of an indigenous HPV vaccine, the Government of India has planned to provide HPV vaccination to girls aged 9 to 14 years through schools. The success of this scheme is dependent on the level of awareness about cervical cancer and the HPV vaccine.
As teachers are knowledgeable citizens, they play a significant role in spreading awareness in the community. Thus, they can serve as ambassadors of schemes related to the welfare of students. Increasing awareness among teachers is the key to generating awareness in the society.

Keywords: cervical cancer, HPV, human papillomavirus, HPV vaccine, vaccine literacy

Clinical and Translational Research

Reverse Sural Artery Based Cross Leg Flap for Limb Aalvage: A Clinical Case with Literature Review.

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Background: Soft tissue defect in the lower limb has always been known to present as a difficult reconstructive challenge. Cross-leg flap was routinely used in the past for the salvage of the lower limb but it is seldom used nowadays due to advances in microsurgical procedures. However, in certain situations where microsurgical procedures are unfeasible, it still exists as a crucial option.

Objectives: To report the successful use and emphasize the importance of reverse sural artery cross leg flap for limb salvage in low resource setting.

Methods: The patient was followed regularly since his admission at our center and details of his history, physical examination, investigations, and management were recorded. Simultaneously, a literature review was done to carry out an evaluation.

Results: An 18-year-old male presented with a complex soft tissue defect of 25x10 cm on the anterolateral aspect of the right leg after a motor vehicle accident. The defect was unsuitable for local flaps or free tissue transfer as no suitable recipient vessels were available for microvascular anastomosis in the vicinity and adjacent tissues were severed.

The patient was planned for a distal cross-leg fasciocutaneous sural artery flap from the left leg to cover the defect. After serial debridement with sustained control of infection, the cross-leg flap was raised over the posterior aspect of the left leg. After 2 weeks, an inset was done over the defect with an intact pedicle. External fixators were applied to fix the legs in a cross-leg position. The donor site was covered with a skin graft from the anterolateral aspect of the left thigh. Finally, the pedicle of the flap was detached after 3 weeks.

Discussion & Conclusion: Reverse sural artery-based cross-leg flap has a clear role in reconstructive trauma surgery because of its simplicity, dependability, lack of functional deficit, good-quality coverage, and minimal cosmetic disadvantage. Therefore, we advise its application in settings lacking microvascular competence or resource-limited settings, or the injury is not suitable for local tissue transfer.

Keywords: cross leg flap, limb salvage, low resource setting, clinical case

Abstract : PT-CT002

Evaluation of Large Language Models in Recommending Treatment Initiation for Ocular Tuberculosis.

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Background: The diagnosis of ocular tuberculosis (OTB) poses clinical intricacies, emphasizing the need for improved decision-making tools. With the recent surge in large language model (LLM) capabilities, particularly ChatGPT versions, there is a growing interest in their potential in healthcare applications.

Objectives: To explore the viability of LLMs in helping clinicians with treatment decisions for OTB, and their adaptability in recommending treatment based on the TB prevalence in the patient's country of origin.

Methods: In our retrospective analytical study, we evaluated the potential of five LLMs including ChatGPT-3.5 and ChatGPT-4 in assisting clinical decisions on initiating antitubercular therapy (ATT) for 633 presumed OTB patients from 25 international centers. tIn this study, these LLMs were compared with the established Collaborative Ocular Tuberculosis Study (COTS) calculator that has been validated for clinical decision support of ATT initiation developed from consensus data obtained via a two-step Delphi method performed by 81 global OTB experts.

Results: Our results indicated a moderate inter-tool agreement but minimal concordance with clinician judgments. Crucially, while all tools demonstrated some discriminatory power, their decision- making was inconsistent with specialized clinician judgments.

Discussion & Conclusion: All five AI models exhibit potential utility in aiding clinical decision-making. Nevertheless, the observed low concordance between the models and clinician decision suggests that there remains a significant gap for these models to be reliably used to inform treatment choices. Interestingly, the stronger agreement with the COTS calculator echoes findings that while LLMs can answer straightforward medical queries with precision, they do not equate to clinician expertise.25 Encouragingly, ChatGPT-4.0 consistently outperforms ChatGPT-3.5 in accuracy, signalling swift advancements in model capabilities. This study highlights the dynamic evolution of AI in the medical landscape and reaffirms the indispensable role of human expertise and experience in clinical decision-making.

Keywords: Ocular Tuberculosis, large language models, ChatGPT, COTS calculator, Clinical Decision Support

Abstract : PT-CT003

Chest Wall Liposarcoma Mimicking Its benign Counterpart.

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Background: An elderly male patient presented with swelling under the left shoulder blade since 3-4 months, which gradually increased in size. It was painless and not associated with any other complaints. Patient had a strong smoking history of 20 pack years.

Swelling was localized under the left scapula, smooth surface, overlying skin normal, no scars and sinuses, moves with respiration, non-pulsatile, no dilated veins seen, soft in consistency, non-fluctuant, painless.

Objectives:

1. To portray the importance of clinical examination and surgical decision making.

2. To emphasize that the investigations and histopathological examinations assist in confirming and deciding the line of management, not replacing surgical judgment.

Methods: Radiological imaging was done following examination. MRI of the left scapular area revealed a large encapsulated hetero-intense formation of size 18cm x 8cm x 15cm. The surrounding chest wall, left lung and the mediastinum did not show any pathological changes on imaging, so it was suspected to be a benign mesenchymal tumor. Surgical excision was done.

Results: Initial clinical examination and radiological imaging pointed it towards a benign tumor. During surgical excision, the consistency and feel of the tumor was suggestive of it being liposarcoma, the malignant counterpart; which was later confirmed by histopathological examination and accordingly further management was done.

Discussion & Conclusion: Liposarcoma, although being a very common soft tissue sarcoma, is seen rarely in the chest wall. Well differentiated liposarcoma is the most common type of liposarcoma, usually seen in the sixth and seventh decades of life. It does not show any gender predisposition. Studies suggest complete surgical resection as the preferred first-line treatment, because neither lipoma, nor liposarcoma are responsive to chemotherapy or radiotherapy.

It has a high tendency of being misdiagnosed as a benign formation, owing to the absence of its invasion to the adjacent structures. In this report we have emphasized the role of surgical decision making from adequate diagnosis to the management based on it.

Keywords: liposarcoma, chest wall, lipoma, well differentiated

Abstract : PT-CT006

Head Injury-Associated Motorcycle Accident in Lerdsin Hospital.

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Background: This study aimed to analyze the head and neck injury-associated motorcycle accident in Lerdsin hospital by comparing type of head injury in helmet and non-helmet. We collected data from all motorcycle accident patients who visited Lerdsin hospital for head injury from January to December 2021.

Objectives: The objective of this study was to evaluate the incidence of head and neck injuries resulting from motorcycle accidents at Lerdsin General Hospital, as well as to examine the factors influencing the occurrence of such injuries and the utilization of helmets.

Methods: This retrospective study was based on The Injury Surveillance data collection at Lerdsin General Hospital between January 1, 2021 and December 31, 2021. We conducted a comparative study for patients who presented with maxillofacial fractures with Helmet and Non-Helmet during 2021 with demographics data, etiology , pattern of injuries and Type of helmets.

Results: Data from 1,702 motorcycle trauma cases was studied. Of the participants, 71% were male and the average age was 31.95 ±12.58 years (mean±SD). Eighty-seven patients rode. The accident involved 41% helmeted drivers and 12% intoxicated drivers.

Age, gender, rider type, and alcohol consumption differed statistically significantly between helmeted and unhelmeted patients. Adults (62%), and seniors (59%), used helmets most. Men wore helmets more than women. Unhelmeted patients were higher in pillion and alcohol drinking.

Every form of head and neck injury was significantly different between helmeted and unhelmeted individuals except facial fractures and cervical spine injuries (P = 0.08). Unhelmeted patients had 55% more facial fractures. Surprisingly, all cervical spine injury patients wore helmets. A statistically significant difference was also detected in head wounded patients, but not cervical spine damaged patients, between no-alcohol and alcohol consumption groups.

Multivariable logistic regression analysis showed that both factors—alcohol drinking and non-helmet wearing—were associated with the outcome of head injury, facial fracture, and intracranial hemorrhage, respectively.

Discussion & Conclusion: Both alcohol usage while driving as well as not wearing a helmet increase the likelihood of head injuries. Alcohol-using drivers are twice as likely to encounter head injuries. Wearing helmets reduces head injuries by 55% for drivers and passengers, compared to 45% for non-wearers.

Keywords: helmet, helmet use, Maxillo-facial injury, head injury, MCA, motorcycle accidents, alcohol drinking

Abstract : PT-CT007

Pregnancy Outcomes Among Women with Uterine Fibroids at Single Tertiary Centre.

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Background: Uterine fibroids, benign growths of the uterine muscle, have been associated with a number of obstetric complications, such as higher risks of preterm labor or abnormal positioning of the fetus.

Objectives: To assess the course and outcomes of pregnancy in women with uterine fibroids during pregnancy.

Methods: A retrospective analysis of delivery histories of women with uterine fibroids at Lithuanian University of Health Sciences Hospital, Kaunas clinics from 2020 to 2022 was performed using „IBM SPSS Statistics 29“. Statistical significance was set at $p<0.05$.

Results: Study participants (n=162) had a mean age of 33.87 ± 4.96 years. Most had a single fibroid (69.1%, n=112), while others had two or more. Fibroids ≥ 5 cm were present in 43.2% (n=70), mainly intramural (66.7%, n=108) in the anterior uterine wall (53.7%, n=87). Fibroid growth occurred in 38.0% (n=46) of cases. During pregnancy, 8.6% (n=14) experienced bleeding, 16.7% (n=27) had fibroid-related pain, and 36.4% (n=59) required hospitalization, more common with multiple fibroids (p=0.016). Hospitalizations primarily resulted from threatened preterm delivery (27.1%). Women with multiple fibroids had higher rates of threatened preterm labor (p=0.021), breech presentation (p=0.036), and significant blood loss (>1000 ml) during delivery (p=0.023). In the group with fibroids ≥ 5 cm, fetal growth restriction was more common (p=0.026). In 77 cases (47.5%), women delivered vaginally, while 12.9% (n=21) underwent spontaneous or induced deliveries but ended in cesarean section. In all study group, 51.9% (n=84) had cesarean section deliveries, with 53.6% (n=45) being emergencies. Common indications for cesarean section were fetal distress (20.2%) and abnormal fetal position or uterine scar after a previous cesarean section (16.7% each). Mean birth weight was 3055.47 ± 891.18 grams as Apgar scores averaged 8.64 ± 1.53 at 1 minute and 9.38 ± 1.07 at 5 minutes.

Discussion & Conclusion: Our study shows that the number of uterine fibroids could be associated with adverse pregnancy outcomes as preterm delivery, breech delivery, blood loss during delivery and cesarean delivery. Moreover, fibroid size was associated with fetal growth restriction.

Keywords: pregnancy, labor, leiomyoma

Abstract : PT-CT008

The Impact of Myeloma on Cardiovascular System: Thromboembolism.

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Background: Myeloma is a growing area of research where new treatments are constantly evolving and improving, however, with the emergence of immunomodulatory drugs that drastically improve the survival rate of multiple myeloma (MM) patients, cardiotoxicity, especially thromboembolism, became a more prominent complication.

Objectives: The overview of cardiovascular problems and thromboembolism in MM was explored in this literature review, along with potential reasons for these complications and thromboembolism. The causes of these events, their mechanisms, the clinical trials that attempted to solve them, and the clinical practices implemented were studied.

Methods: PubMed and Google Scholar were the main databases used to gather sources. Examples of key words that were used are Myeloma, Cardiovascular Complication, Thromboembolism, Deep Vein Thrombosis, Multiple Myeloma, Multiple Myeloma Treatment etc. Relevant data are gathered and analysed with consideration of sample size and publication date.

Results: Cardiovascular disease can be caused by a range of factors. There are three categories that it falls under: patient, illness, and treatment-based risk factors. The same is also true with thromboembolism. Cardiotoxicity in MM frequently results from its treatment; however, it is important to consider chronic disease risk factors and illness-specific risk factors such as frequent infection, immobility, hypercalcemia, and renal failure. Immunomodulatory drugs in combination with chemotherapy and corticosteroids have the highest thrombosis risk of all MM treatments.

Discussion & Conclusion: Although additional study is required to completely comprehend the mechanism underlying the incidence, thromboembolisms in MM patients are controllable. However, immediate action must be taken to develop guidelines for the type and therapeutic range of thromboprophylaxis medications as well as the risk assessment of thromboembolism in MM patients to ensure the proper use of anticoagulants in these patients.

Keywords: myeloma, multiple myeloma, cardiovascular complication, multiple myeloma treatment, chemotherapy, thromboembolism, deep vein thrombosis

Abstract : PT-CT009

Genetic and Phenotypic Differences between Pathogenic Neisseria Species that Influence Human Colonisation.

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Background: While most Neisseria species are commensals, *Neisseria meningitidis* (meningococcus) and *Neisseria gonorrhoeae* (gonococcus) are two pathogenic species responsible for ongoing global health issues: meningitis and gonorrhoea, respectively. Meningococcus and gonococcus are two distinct species with different characteristics, including different colonisation sites and clinical syndromes. Nonetheless, multiple studies using whole-genome sequencing (WGS) and phylogenetic analyses have suggested that both species are closely related and share a significant amount of similarity. Therefore, this paper will address the genetic and phenotypic differences, the characteristics they share, and how these have been helpful and detrimental to the diagnosis and treatment of both species. The lack of gonococcal vaccines in the context of rising resistance to antibiotics (the only effective intervention against gonorrhoea) is another concerning issue. This explains why gonococcal vaccine development is urgently needed.

Objectives: This review aims to highlight the importance of gaining a better understanding of the two closely related pathogenic *Neisseria* spp. in order to come up with solutions for existing problems, including the misdiagnosis of gonococcal symptoms caused by *N. meningitidis,* the rising antimicrobial resistance crisis against *N. gonorrhoeae*, and the lack of gonococcal vaccines despite rising prevalence.

Methods: This research is carried out as a literature review. There is no method for this research.

Results: It has been reported that the MenB vaccine, Bexsero, has been shown to give cross-protection against gonococcus, suggesting that the development of an effective gonococcal vaccine is feasible. This highlights the importance of learning the similarities and differences between meningococcus and gonococcus, as this might benefit future research in improving diagnostic techniques, prevention, and treatment options.

Discussion & Conclusion: This review has discussed the genetic and phenotypic differences and the characteristics shared between *N. meningitidis* and *N. gonorrhoeae*, the two globally significant pathogenic Neisseria species that are the causative agents of meningitis and gonorrhoea, respectively. With the discovery of MenB vaccines having the potential to provide protection against *N. gonorrhoeae*, this brings hope to the development of the gonococcal vaccine.

Keywords: *N. gonorrhoeae, N. meningitidis*, Meningococcal urethritis, Bexsero

Abstract : PT-CT010

Increased Intervals between Paediatric Tracheostomy tube Changes: Is It a Safe Technique?

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Background: The number of paediatric tracheostomies being performed continues to increase over the years. With improved care amongst premature infants and those in the neonatal intensive care unit, more infants become eligible for tracheostomy. Yet, there is no clear guideline on the optimal time to perform a tracheostomy in children with prolonged ventilatory support, and there is still limited information available on the rate of complications associated with paediatric tracheostomy in relation to timing of tracheostomy tube change. Typically, tracheostomy tube changes can be accomplished monthly at the patient's bedside without sedation by properly trained family members. However, due to economical barriers and cultural constraints, tracheostomy tube changes may be prolonged in developing countries such as Thailand where most families are not able to change tubes themselves at home.

Objectives: To evaluate the safety of changing tracheostomy tubes every three months in paediatric patients and determine the occurrence of tube-related complications.

Methods: Retrospective observational chart review was completed from 2018 to 2021 at a tertiary medical centre in Thailand. Tube associated complications were assessed with regards to interval length between tracheostomy tube changes. The rate of complication was compared with a past study.

Results: Out of a total of 108 visits, the average interval between each tube change was 87 days. Of all encounters, 6.48% resulted in a tube-related complication. Of these 7 visits, 2 had an admission for a respiratory infection within 30 days, 3 experienced accidental decannulation and 2 resulted in excess granulation tissue formation. A p-value of 0.8 was obtained from a chi-squared test.

Discussion & Conclusion: An interval of 90-days between paediatric tracheostomy tube changes does not increase the rate of tracheostomy tube related complications. This interval may be practical for those in resource limited settings.

Keywords: pediatric, tracheostomy, prolonged, developing country

Abstract : PT-CT011

Development and Validation of The Nomogram for Predicting Intracranial Hematoma in Elderly Traumatic Brain Injury.

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Background: Traumatic brain injury (TBI) is a major health problems of public health. TBI is a leading cause of mortality and disability among the elderly population. Consequently, cranial computed tomography (cCT) has gained widespread use for diagnosing traumatic intracerebral hematoma (tICH), leading to an increased cCT rate. However, only 21.6% of all investigations found tICH that indicated cCT has been overused.

Objectives: Thus, the objective of this study was to develop and test a Nomogram for predicting intracranial hematoma in the elderly patients with traumatic brain injury.

Methods: The study was a retrospective cohort study, and the study population was TBI patients who were admitted from 2015 to 2022 in the Songklanagarind hospital.

Results: Total data was divided into the development dataset (2015-2019, N=2,052) to develop the Nomogram and the validation dataset (2020-2022, N=310) to test the predictability as temporal validation. The development of the Nomogram was constructed through binary logistic regression. The predictability of the Nomogram was tested by the validation dataset. The results demonstrated sensitivity, specificity, and an area under the ROC curve of 0.90, 0.77, and 0.89, respectively. From the temporal validation, the present Nomogram had the outstanding performance of tICH prediction in the elderly.

Discussion & Conclusion: However, that should be further studied in the real-world situation and clinical practice for supporting physician's decision making and improving the effective investigation of cCT in the elderly.

Keywords: nomogram, cranial computed tomography, clinical prediction tool, elderly, traumatic intracerebral hematoma

Abstract : PT-CT012

The Risk of Developing Severity within 3 Months in Patients Diagnosed with Confirmed Tuberculosis and a Positive AFB Sputum.

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Background: Tuberculosis (TB) is a contagious disease caused by Mycobacterium tuberculosis. Thailand had 12,000 deaths from TB in 2020. The initial diagnosis of TB is Acid-fast bacilli (AFB) by Acid-fast staining. AFB can screen patients who are positive or show TB infection when patients who have a high number of bacterium.

Objectives: To study the risk of TB severity resulting from acid-fast staining in patients with a confirmed diagnosis of TB.

Methods: Study of patients diagnosed with TB for the first time using GeneXpert MTB/RIF assay and Acid-Fast staining at Uttaradit Hospital from April 15th, 2020 to April 15th, 2023. The patients were divided into two groups: Group 1 consisted of 110 patients with positive results, and Group 2 consisted of 95 patients with negative results. All data were analyzed by descriptive and analytic statistics.

Results: A positive test result was increased risk of severity with a 1.23 times compared to negative test result from the acid-fast stain, but it is not significant (95% CI 0.98 - 1.54, p-value 0.072) and when controlled the influence of gender, age, body mass index, and comorbidities the risk increases to 1.28 times when compared with a negative acid-fast staining result, but it is still not significant (95% CI 0.89 - 1.86, p-value 0.186).

Discussion & Conclusion: The positive AFB can assess the risk of severity by being more than 1.28 times at risk, but it is not different. This can help predict the risk in patients with positive AFB, even at the initial diagnosis stage and in the absence of symptoms. It is recommended that the examining physicians closely monitor and observe the condition of TB patients regularly during the first 3 months of diagnosis and consider conducting Chest X-ray examinations to monitor changes in lung conditions throughout the treatment. This will help reduce mortality rates from TB.

Keywords: tuberculosis, acid-fast bacilli, GeneXpert MTB/RIF assay

Abstract : PT-CT013

Comparing Time to Develop Allergic Rhinitis in Children Delivered by Cesarean Section Versus Vaginal Delivery in Uttaradit Hospital.

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Background: Allergic Rhinitis has a prevalence rate of approximately 15% in children aged 6-7 years. Although it may not be a severe condition, it significantly impacts one's quality of life. Allergic Rhinitis can result from various factors, including the route of delivery. By having a cesarean section, the baby will not be exposed to bacteria in the birth canal, which is considered a significant factor affecting the child's immune system. However, the mentioned hypothesis is not a conclusive judgment, and previous research has focused on exploring the relationship between allergic rhinitis and the route of delivery. Currently, there have been no studies comparing the timing aspect or time-to-event analysis.

Objectives: To study the relationship and timing of allergic rhinitis diagnosis in children born via cesarean section compared to vaginal delivery in Uttaradit Hospital.

Methods: Retrospective case control study of children born in Uttaradit Hospital between 1 January 2017 to 31 December 2022 and be excluded according to exclusion criteria. The data of patients with allergic rhinitis was collected from ICD-10 medical records (J304). The sample was divided into two groups: Group 1 consisted of 150 patients with allergic rhinitis, and Group 2 consisted of 150 people with no history of allergic rhinitis. Descriptive and analytical statistics were used for data analysis.

Results: The adjusted hazard ratio (HR) of allergic rhinitis was 1.41 (95% CI,1.01-1.99) for cesarean section. By using quantile regression, the study found that children born via cesarean section were diagnosed with allergic rhinitis at an average age of 5.3 years, while children born via vaginal delivery were diagnosed at an average age of 6.1 years.

Discussion & Conclusion: Children born via cesarean section have a higher risk about 1.4 times of developing allergic rhinitis compared to vaginal delivery and tend to develop the condition at an earlier age about 9 and a half months compared to children born via vaginal delivery.

Keywords: allergic rhinitis, route of delivery, average age to get diagnosed allergic rhinitis

Abstract : PT-CT014

Prevalence of HPV Types and Association with Cervical Dysplasia in Nakornping Hospital.

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Background: High-risk Human papillomavirus (HPV) infection is associated with cervical cell abnormalities and could develop into cervical cancer. HPV DNA testing has been demonstrated to be a helpful and more accurate cervical cancer screening. There was unsystematic data collection about HPV strains and the degree of cervical cell abnormalities from HPV infection in women who visited Nakornping Hospital.

Objectives: To determine HPV strains and degrees of cervical cell abnormalities from HPV infections (dysplasia) including its related factors.

Methods: All women with HPV infection who underwent colposcopy and had cervical biopsy indications at the outpatient gynecology department of Nakornping Hospital between fiscal years 2022 and 2023 were included in the study. Data were collected retrospectively from electronic hospital database. Baseline characteristics with different HPV types were compared and the relationship between HPV type and cervical cell abnormality level were determined. Statistics methods used to analyze the relationship between cervical lesions and HPV infection were chi-square (χ^2), Fisher's exact test, and the binomial logistic regression.

Results: A total of 239 participants were included. The most common type was non-16, 18 HPV in 117 women (48.95%), followed by HPV type 16 in 80 women (33.47%), type 18 in 25 women (10.46%), and multiple HPV types in 17 women (7.11%). A significant relationship was found between dysplasia and the number of pregnancies and different types of HPV infection ($P<0.05$), but only in the univariable model. No statistically significant differences between cervical cell abnormalities and HPV types were found.

Discussion & Conclusion: The HPV DNA screening at Nakornping Hospital found almost half of them infected with HPV non-16-18 and one-third with HPV 16 and HPV 18 infection. However, the related risk of dysplasia was similar among types of HPV infection. Further study is warranted with larger samples.

Keywords: high-risk human papillomavirus, cervical dysplasia

Abstract : PT-CT015

Comparative Study on The Effectiveness and Safety of 0.13% CBD Acne Cream with 2.5% Benzoyl Peroxide Versus 1% Standardized Clindamycin Gel with 2.5% Benzoyl Peroxide for the Treatment of Acne Vulgaris: A Randomized Controlled Trial.

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Background: Acne vulgaris is a prevalent skin condition affecting various age groups globally, including in Thailand. Cannabidiol (CBD), a non-psychoactive phytocannabinoid derived from cannabis, has shown promise in treating acne through multiple pathways such as sebostatic effects, anti-inflammation, and antibiotic properties, as demonstrated by in vitro studies. However, there is currently a lack of research examining the effectiveness of CBD in acne treatment, particularly in comparison to standard treatments.

Objectives: Our objective is to compare the efficacy and adverse effects of a 0.13% CBD-containing acne cream and a 1% clindamycin gel.

Methods: A total of 29 participants (58 sides of face) who had severity grade I to grade III according to the Investigator's Global Assessment of acne severity were randomly divided into two groups: one receiving the 0.13% CBD acne cream and the other using the clindamycin gel with 2.5% benzoyl peroxide. Both treatments were applied twice daily to separate sides of the face over a 4-week period. Parameters assessed included overall acne lesion count, covering both inflammatory and non-inflammatory lesions, as well as acne severity, Dermatology Life Quality Index (DLQI), possible side effects, participant satisfaction, medication adherence, and facial photographs.

Results: At 4 weeks, both groups demonstrated significant reductions in acne lesions compared to baseline ($P<0.001$) and the mean reductions were comparable between CBD and clindamycin groups (-8.48 vs – 8.97, $p=0.88$). Acne severity also decreased from mild-moderate to 20 (CBD group) and 22 (Clindamycin group) cases, respectively. The reported adverse effects including dry skin, itching, skin peeling, rashes, and pain, occurred in less than 20% of the patients and were mild in Clindamycin group while No reported side effect in CBD group, and not significant different between the two groups. The Dermatology Life Quality Index score significantly decreased from baseline to after 4 weeks of treatment in all 29 patients (13.1 vs 1.65; $P<0.001$).

Discussion & Conclusion: Both the 0.13% CBD acne cream and the clindamycin gel used with 2.5% benzoyl peroxide exhibited similar effectiveness, offering potential as alternative or adjunct treatments for reducing acne lesions, with minimal observed side effects.

Keywords: acne, CBD, cannabis, acene treatment, herbal drug

Abstract : PT-CT016

Prostaglandin-Induced Medical Abortion: Unveiling Complications.

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Background: Abortion is a term used to describe the termination of pregnancy before 22 gestational weeks. There are two methods for terminating pregnancy: medical and/or surgical. In addition to surgical abortion, there is a medical method available, which is believed to be safely performable up to the ninth week of pregnancy and outside of a healthcare facility.

Objectives: To investigate the most common complications of medical abortion.

Methods: A retrospective study was conducted from March 1, 2023, to April 20, 2023, at the Obstetrics and Gynecology Department of Kaunas Clinics. Patients who had undergone a medical abortion from September 1, 2021, to September 1, 2022, were selected from the clinic's registry. The included patients had ongoing pregnancies up to 22 gestational weeks, with medical indications for pregnancy termination. The study was approved by the Bioethics Center under Approval No. BEC-MF-100

Results: During the study, data from 62 patients were analysed. The participants' ages ranged from 16 to 44 years, with an average age of 30.97 years (SD - 5.890).

Throughout the study, we noted the following complications associated with medical abortion using prostaglandins exclusively: incomplete evacuation of pregnancy tissue requirement for an additional dose of misoprostol (64.5%), retained placenta (4.8%), failed abortion necessitating surgical intervention (17.7%), anaemia (37.1%), recurrent heavy genital bleeding (1.6%), and infection (3.2%). In cases of retained placenta, 4.8% of patients received oxytocin, which was effective in 33.3% of these cases. In the remaining 66.7% of women, manual placental removal was performed surgically. Erythrocyte mass transfusion was not required for any patient. None of the patients required erythrocyte mass transfusion. When comparing women for whom medical abortion was successful with those for whom the procedure was unsuccessful and required surgical completion, it was observed that anaemia occurred more frequently after a successful medical abortion ($\chi 2$ test = 7.275, p = 0.007).

Discussion & Conclusion: The most common complication of medication-induced abortion, when only prostaglandins are administered, is anemia. Anemia tends to develop more frequently following a successful medication-induced abortion than when surgical intervention is performed in cases of unsuccessful medication-induced pregnancy termination.

Keywords: misoprostol, prostaglandins, medical abortion, complications

Abstract : PT-CT017

Factor Associated with First Episode of Peritonitis in Patients with Chronic Renal Failure with Continuous Ambulatory Peritoneal Dialysis in Phayao Hospital.

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Background: End stage renal disease patients were treated by continuous ambulatory peritoneal dialysis at Phayao Hospital. 82.03% of peritonitis were found to be associated with many factors. The researcher is interested in studying the factors associated with peritonitis to develop guidelines for effective patient care and reduce the chance of infection.

Objectives: To discover associated factors and the prevalence of pathogens in end stage renal disease patients were treated by continuous ambulatory peritoneal dialysis.

Methods: This study was a retrospective case control study in end stage renal disease patients who received continuous ambulatory peritoneal dialysis treatment. Gathering data from electronic database during 1 October 2017 to 30 September 2022 and required to continuous treatment for at least 6 months. The analysis compared to patients in 2 groups, namely patients without peritonitis and patients with peritonitis. The results were analyzed in both single and multi-variable ways. Data were analyzed using T-test, Wilcoxon rank-sum test, Chi-square test or Fisher's exact test as appropriate.

Results: The cumulative incidence of peritonitis was 52.1%. The most common pathogens is Klebsiella pneumoniae, accounting for 11.66% and the associated factors of peritonitis are male gender (adjusted RR = 1.60 [95% CI 1.15 - 2.25]), hyponatremia (adjusted RR = 1.43 [95% CI 1.02 to 2.01]), hypokalemia (adjusted RR = 1.73 [95% CI 1.25 to 2.39]) and frequency of Kidney Dialysis more than 4 times per day.

Discussion & Conclusion: Male, frequency of Kidney Dialysis more than 4 times per day, hyponatremia and hypokalemia. These are factors associated with peritonitis that reflects the need to plan to follow up with this group of patients and organize a multidisciplinary team to assist patients in order to reduce the incidence of peritonitis.

Keywords: peritonitis, chronic renal failure, ambulatory dialysis

Abstract : PT-CT018

Pain Assessment and Patient Education in Hysterosalpingography: Bridging the Gap between Procedure Knowledge and Pain Experience.

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Background: Hysterosalpingography is the primary diagnostic tool for identifying tubal infertility. Since it is an invasive procedure, despite its diagnostic benefits, patients often experience anxiety and stress before its performance, which is associated with an increased perception of pain during the procedure.

Objectives: To determine whether providing information about the procedure can contribute to reducing the level of pain.

Methods: The study was approved by the Bioethics center of Lithuanian University of Health Sciences (LUHS). It was a single-centre prospective analysis of 67 patients during the period from September 20, 2022, to May 10, 2023, at LUHS KC Reproduction Centre. Patients undergoing the HSG procedure were asked to complete two questionnaires - one before the procedure and one after it. For a randomly selected subset of patients, informational brochures about the examination and the potential pain during it were provided before undergoing HSG. IBM SPSS Statistics 23.0 was used. χ^2 test was used. The result was considered statistically significant at $p<0.05$.

Results: The study included 67 women. During the procedure, 67.2% of women experienced moderate to severe pain, while 30% of patients complained of such pain after the procedure. When comparing the responses of women who read the brochure with those who did not, there was no statistically significant difference in pain assessment during HSG (χ2 test = 1.042, p = 0.594 and after the procedure were (χ2 test = 0.448, p = 0.799) found (χ2 test = 1.042, p = 0.594). Statistically significantly lower anxiety was reported by women who sought information on the internet (χ2 test = 6.790, p = 0.034) or consulted a physician (χ2 test = 6.656, p = 0.036). No statistically significant data were found when assessing the relationship between experienced pain and anxiety levels.

Discussion & Conclusion: Providing an informational brochure before the procedure does not reduce anxiety or the perception of pain during the procedure itself. Patients who exhibit lower anxiety are those who actively seek and gather information from online sources or consult with a physician before the procedure.

Keywords: HSG, pain, education

Abstract : PT-CT019

Ocular Flutter in Hyperglycemic Hyperosmolar State: A Case Report and Review of Literature.

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Background: Ocular flutter is characterized by sporadic episodes of significant and rapid horizontal eye movements of considerable magnitude, occurring without gaps between consecutive movements. The ocular flutter has been seen alongside various medical conditions, such as multiple sclerosis, hydrocephalus, head injury, midbrain glioblastoma, and thalamic hemorrhage.

The hyperosmolar hyperglycemic state (HHS) is characterized by intense hyperglycemia, elevated osmolality, and dehydration in individuals with type 2 diabetes and lacks the presence of ketoacidosis. This condition can exhibit a range of neurological symptoms, such as altered mental status, focal weakness, seizures, and hyperkinetic movement disorders. Ocular hyperkinesia, such as ocular flutter and opsoclonus, has been rarely reported in association with HHS.

Objectives: We sought to describe a patient who had an ocular flutter in the hyperosmolar hyperglycemic state.

Methods: Retrospective observation

Results: Ocular flutter manifestation presents in hyperosmolar hyperglycemic state patient.

Discussion & Conclusion: In an HHS, ocular flutter and myoclonus can present as an atypical manifestation and resolve following the reduced blood glucose.

Keywords: hyperosmolar hyperglycemic state, hyperglycemia, abnormal eye movement, ocular flutter

Abstract : PT-CT020

Factors Associated with Congenital Pneumonia in Neonates with Respiratory Distress at Panom Sarakham Hospital, Chachoengsao Province, Thailand.

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Background: One of the major causes of respiratory distress inneonates is congenital pneumonia, a common infection with significant morbidity and mortality at birth, resulting in a serious complication such as a respiratory failure.

Objectives: To study associated factors of congenital pneumonia in neonates with respiratory distress, Panom Sarakham Hospital, Chachoengsao Province.

Methods: A retrospective cohort study was conducted. Cases of respiratory distress neonates were retrieved from medical records from 1 January 2022 to 31 May 2023 using the HOSxP system and divided into 2 groups, with and without congenital pneumonia. The definition of congenital pneumonia in this study was neonates who had respiratory distress within 24 hours of life with pulmonary infiltration. Sample size was calculated by using two independent proportions formula from N4Studies application. For 240 cases of respiratory distress, 113 cases with congenital pneumonia were labeled as a case and other 127 cases without congenital pneumonia were a control. Data analysis was performed for descriptive statistics and Pearson Chi-squared test for associated risk factors using SPSS version 22.

Results: Factors significantly related to congenital pneumonia in respiratory distress neonates were unemployed mothers (RR = 1.69, 95% CI = 1.22-2.36, P-value = 0.03), and maternal Coronavirus infection during delivery (RR = 0.64, 95% CI = 0.44-0.92, P-value = 0.01). However, maternal age, antenatal care, premature rupture of membranes, urinary tract infection, syphilis infection, educational status, gestational age, types of delivery, gender, birth weight, types of newborn, onset of respiratory distress and history of cardiopulmonary resuscitation at birth showed no association with congenital pneumonia in this study.

Discussion & Conclusion: Factors significantly associated with congenital pneumonia in neonates with respiratory distress were unemployed mothers who might have inadequate personal health care leading to the risk of getting infection. The use of universal precautions during maternal Coronavirus infection might reduce the risk of congenital pneumonia.Thus, health literacy to create self-awareness in self-care during pregnancy is recommended to prevent congenital pneumonia and its serious complications.

Keywords: congenital pneumonia, neonates, respiratory distress

Abstract : PT-CT021

Factors Associated with Severe Pneumonia Among Children Aged Under 5 Years, Bang Nam Priao Hospital, Chachoengsao Province, Thailand.

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Background: Pneumonia is considered the leading cause of death from infectious diseases in children aged under 5 years. There has been an increasing trend of pneumonia cases in children at Bang Nam Priao Hospital since 2020.

Objectives: To study factors associated with severe pneumonia in children aged 1 month to 5 years at Bang Nam Priao Hospital, Chachoengsao Province.

Methods: This was a case-control study. Data were collected from hospital records through the HOSxP program. A sample of 473 pediatric patients aged 1 month to 5 years who were diagnosed with pneumonia according to the WHO Geneva 1995 criteria (ICD 10 code J12.0 - 18.9) and were divided into 2 groups as severe and non-severe pneumonia. Definition of severe pneumonia was based on British Thoracic Society guideline 2011 with at least 1 of these following symptoms; fever≥ 38.5°C, chest indrawing, tachypnea, nasal flaring, grunting, cyanosis, tachycardia, poor tissue perfusion, and shock. Sample size was calculated by using Schlesselman formula. Then 188 patients were simple random sampling from each group. Descriptive and inferential statistics were used for data analysis, and the relationship between various factors contributing to severe pneumonia were assessed using Pearson's Chi-squared test using SPSS v.22.

Results: Factors significantly associated with severe pneumonia were severe stunting (OR=2.13, 95%CI=1.22-3.70), exposure to household smoking (OR=3.01, 95% CI =1.93-4.68), present of COVID-19 infection (OR=0.34, 95%CI =0.22-0.54), lobar infiltration on chest x-ray (OR=9.40, 95%CI =1.179-74.97), abnormal white blood cell count (OR=3.39, 95%CI =2.21-5.19), abnormal neutrophil count (OR =3.31, 95% CI =2.01-5.45) and abnormal lymphocyte count (OR=2.74, 95%CI =1.12-6.72),

Discussion & Conclusion: Stunting caused by chronic severe malnutrition particularly protein deficiency leading to low immunity and severe respiratory infection. Smoking could damage epithelial lining of respiratory tract, loss of defense mechanism and caused severe pneumonia. Thus, eliminate household smoking and prevent severe malnutrition were recommended in children for prevention of severe pneumonia.

Keywords: severe pneumonia, children, malnutrition, household smoking

Abstract : PT-CT022

Preoperative Anemia and Blood Transfusion in Total Knee Arthroplasty and Unicompartmental Knee Arthroplasty.

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Background: Knee osteoarthritis (OA) is a degenerative joint disease of the knee due to the progressive loss of articular cartilage. The intensity of the clinical symptoms is varied and may lead to disability. To improve the quality of life, total knee arthroscopy (TKA) is a cost-effective intervention for patients with end-stage OA. In contrast, unicompartmental knee arthroplasty (UKA) is a surgical technique used to treat OA in one compartment of the knee. Perioperative blood loss which requires blood transfusion is a significant concern. Potential complications of allogeneic blood transfusion are infections, volume overload, prolonged hospitalization, and increase in mortality.

Objectives: We aim to investigate the relationship between blood transfusion and possible risk factors such as preoperative anemia, age, gender, comorbidities, and hospital length of stay.

Methods: One hundred eighty-four patients who have undergone TKA and UKA at King Chulalongkorn Memorial Hospital from 1 January 2023 to 31 June 2023 were retrospectively reviewed.

Results: Of 184 patients, 160 and 24 are TKA and UKA, respectively. The median age was 71 [Q1-Q3 = 65-76.5] and the mean value of preoperative hemoglobin was 12.7 ± 1.3 g/dL. The patients with pre-operative hemoglobin (Hb) level below 11 g/dL had a greater risk of blood transfusion (adjusted odds ratio [OR] = 5.48, 95% confidence interval [CI] 1.29-23.30, p = 0.021). Furthermore, hospital length of stay demonstrated a strong association with blood transfusion (adjusted OR = 1.53, 95% CI 1.11-2.11, p = 0.009).

Discussion & Conclusion: Preoperative anemia is an important risk factor for blood transfusion especially in patients with Hb level below 11 g/dL. Also, an increased hospital length of stay indicates a greater chance of requiring blood transfusion. Previous studies showed that the duration of hospital stays reduced as hemoglobin levels increased. Thus, preoperative anemia management before operation may reduce hospital length of stay and risk of transfusion.

Keywords: preoperative anemia, blood transfusion, total knee arthroplasty, unicompartmental knee arthroplasty

Abstract : PT-CT023

The Potential Role of Mobile Health Apps to Support Home Service Delivery of Biologics for Rheumatoid Arthritis Patients.

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Background: Over the past 20 years, biological drugs have greatly transformed rheumatoid arthritis (RA) treatment. Healthcare services have also shifted gradually from hospital-based to patient's home. Recently, the incorporation of mobile health (mHealth) apps into service delivery provides a new approach to support patients receiving RA care at home.

Objectives: This study aims to describe patient characteristics of RA service users provided by a company called Sciensus, and to investigate how different factors influence patient's app engagement in RA care.

Methods: Data was transferred from the database of Sciensus, a homecare provider to more than 100,000 RA patients, through excel for RA service users in the last 2 years. The full set of data was analyzed on patients' characteristics of active users and finished users. A focused analysis on app users was then carried out.

Results: The patient characteristics of Sciensus service users for RA matched what was known from previous studies in terms of gender and age distribution. There were no substantial differences between the overall service users and active users. However, patient app engagement was found to be better in the middle-aged patients,patients who receive extra nurse support, and newer patients who have service duration less than 2 years.

Discussion & Conclusion: Sciensus Intouch app is still under development and has the potential to expand in number of users. Features such as reporting of adverse events and monitoring of PA could play a significant role in improving patient app engagement and the overall adherence to RA care. It would be of great interest for future studies to evaluate the role of mHealth apps in supporting delivery of medications at patient's home.

Keywords: RA - Rheumatoid Arthritis , mHealth - mobile health, PA - physical activity

Abstract : PT-CT024

Short Bowel Syndrome: Life–Saving Parenteral Nutrition for 4 Months: A Clinical Case.

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Background: Short bowel syndrome (SBS) in adults is defined as having less than 180 to 200 cm of remaining small bowel. The most common pathologies leading to SBS include Crohn disease, mesenteric ischemia, radiation enteritis, post-surgical adhesions, and post-operative complications. In advanced SBS, parenteral nutrition may be required to ensure that all vital nutrients are delivered directly through the venous system.

Objectives: To investigate a clinical case of a patient who underwent parenteral nutrition for four months due to SBS.

Methods: A despersonalised medical records were analyzed.

Results: A 76-year-old patient, with a previous history of abdominal surgery, was presented with abdominal pain, nausea, vomiting. Initial investigations revealed a complete intestinal obstruction. Surgery was performed, including adhesiolysis, drainage and a release of a strangulated loop and stitching. However, post-surgery, persistent abdominal pain continued for 9 days until a CT scan revealed stercoral peritonitis. This prompted an urgent relaparotomy, which involved the removal of 20 cm of necrotic and perforated small bowel, peritoneal lavage, drainage, and the creation of a two-tube jejunostomy, leaving 60 cm of small bowel from the ligament of Treitz. Full parenteral nutrition (FPN) began about a week after the second surgery due to SBS, lasting for a total of 4 months. Once hypoproteinaemia and hypoalbuminaemia were corrected (increasing from 63.0 g/l to 65.5 g/l and from 27.0 g/l to 32.8 g/l, respectively), an open bowel surgery was performed, involving laparotomy and ileostomy closure. After the restoration of intestinal integrity and returning to a normal diet the patient was referred for outpatient care.

Discussion & Conclusion: In cases of malnutrition where oral or enteral feeding is impossible or contraindicated, the use of temporary or permanent parenteral nutrition can prove to be a life-saving intervention. After successfully restoring nutritional status and discontinuing artificial feeding, and in the absence of intestinal insufficiency, the most effective surgical method to restore intestinal integrity is through small and large bowel re-anastomosis. For patients for whom this surgery is not a viable option, parenteral nutrition remains the sole path that leads to a more favorable outcome and ensures the preservation of their quality of life.

Keywords: short bowel syndrome, parenteral nutrition

Abstract : PT-CT025

Approach to Diagnosis of Leptospirosis Based on The Relationship between Faine Criteria and Laboratory Examination.

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Background: The incidence of leptospirosis is increasing globally and developing countries are no exception. Leptospirosis cases are called the tip of the iceberg phenomenon even though misdiagnosis, under-diagnosis, and under-reporting still occur in health services. The Faine criteria are used as one way to diagnose leptospirosis which consists of parts A, B, and C. Laboratory examination of leptospirosis is the key to establishing a diagnosis

Objectives: to determine the correlation between the Faine criteria and the laboratory results of leptospirosis patients and to regulate the approach to diagnosing leptospirosis in primary health care.

Methods: This study used an analytical observational study design with a cross-sectional approach in examining faine criteria and laboratory examinations. We collected data from medical records from the Karanganyar General Hospital and the PKU Muhammadiyah Surakarta Hospital. Then we processed the data using SPSS software.

Results: The total number of patients was 42 people consisting of women (19%) and men (81%). Based on the Faine criteria part A, there were probable (2.4%) and non-probable (97.6%) patients. Blood examination revealed hemoglobin (anemia 28.6%), thrombocytopenia (54.8%), leukocytosis (38.1%), and leukocyte count (neutrophilia 88.1%) as well as electrolytes (hyponatremia 35.7%; hypokalemia 50%; hypocalcemia 31%) and serological examination IgM positive (97%) and Rapid test positive (2.4%). There are more non-probable patients compared to probable patients because the incubation period for leptospirosis is 3-10 days. Bivariate analysis showed that there was no significant correlation between Faine Part A criteria and serological tests in both groups (p=0.874) as well as Hb (p=0.522), thrombocytopenia (p=0.265), leukocytosis (p=0.197), and neutrophilia (p=0.710). Loss of sodium and potassium can occur in tropical diseases such as leptospirosis, but this study did not show significant data (hyponatremia p=0.174; hypokalemia p=0.311; hypocalcemia p=0.131)

Discussion & Conclusion: The approach to diagnosing leptospirosis through screening with faine criteria is recommended to be carried out using both or all three parts of the criteria (parts A+B or parts A+B+C) in primary health care.

Keywords: leptospirosis, Faine criteria, tropical infection, primary health care

Abstract : PT-CT026

Factors Affecting Delayed First Antenatal Care Visit in The Antenatal Care Clinic at Pranangklao Hospital, Nonthaburi Province.

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Background: Antenatal care (ANC) is very important for both maternal and fetal health. Early attendance of ANC enables clinicians to confirm pregnancy, screen for risks, counsel and promote the well- being of both mother and fetus. The late ANC is defined as entering ANC after 12 weeks of pregnancy. The pregnant women with late initiation of ANC are more likely to attain unfavorable outcomes, including anemia in pregnancy, malnutrition, hypertension in pregnancy, miscarriage, antepartum and postpartum hemorrhage. Furthermore, it also affects the fetus, such as an increased risk of preterm delivery, intrauterine growth retardation and fetal death.

Objectives: The purpose/objective of this study was to determine factors associated with late antenatal care.

Methods: A Cross- sectional analytic research was conducted from January, 2023 to March, 2023.and the Data were collected from 120 pregnant women attending Antenatal Care Clinic at Pranangklao Hospital, Nonthaburi province using the questionnaire. Descriptive statistics were was used for summarizing and describing categorical data. Then Chi- square test was were used to analyze the factors associated with late ANC. and Multiple Regression Analysis was taken conducted to detect the relationships between the factors. and found to be significant at p-value < 0.05

Results: The prevalence of late ANC was 53.3% (64/120). The prevalence of early ANC was 46.6% (56/120). The results showed that the Maternal age, Diploma (education), Salary (income), Knowledge about Pregnancy and ANC, Attitude toward pregnancy and ANC, Acknowledgment of the risk of late ANC, Acknowledgment of the benefit of ANC, Accessibility/Steps of ANC and Sociality Support were factors affecting late ANC attendance., However, the tests conducted in this study yielded no statistical significance insignificantly (p-value > 0.05)

Discussion & Conclusion: The late ANC challenge problem could be resolved by the active participation of health workers, pregnant women, as well as engagement of family members and community. The health workers should promote more health education, increase the and foster good practice by disseminating important knowledge regarding the advantages of timely initiation of ANC and also give necessary information about service availability of ANC for pregnant women and their families.

Keywords: antenatal care, maternal and fetal health

Abstract : PT-CT027

Quality of The Cause of Death Summary with Ill-Defined Causes of Death

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Background: The cause of death (COD) from death certificate can provide valuable information for regional and national health policy. World Health Organization (WHO) recommended avoiding the ill-defined code because it does not give any information about the COD. In Thailand, the Ministry of Public Health (MoPH) sets the goal that the ill-defined COD should not exceed 25% and provides training to improve the quality of the COD. However, there is still a high proportion of ill-defined COD.

Objectives: To analyze the quality of the COD recorded by doctors using WHO criteria.

Methods: A cross-sectional study was conducted in a community hospital in Lopburi province using data retrieved between October 1, 2018 and September 30, 2023. To define COD inside a hospital, the recorded COD in death certificate was compared to the COD determined from patient medical records according to WHO criteria. Then descriptive statistics and chi-square test were used for data analysis at the 0.05 level of significance. Lastly, small group interviews were conducted to identify the root of the problems.

Results: 538 medical records and death certificates were included. All these data were recorded by the internship doctors according to the hospital protocol. 10.3% was ill-defined COD. The study found that the ill-defined COD in the out-patient department as an emergency room (29.8%) was significantly worse compared to the in-patient department (6.6%) (p<0.001). Most of the ill-defined CODs were congestive heart failure (29.1%) and unattended death (21.8%).

All doctors claimed that most of these cases arrived without knowing the history, symptoms, or underlying diseases; as a result, they all decided to use unattended death as the COD, which confirmed what the nurses mentioned. Additionally, many stated that because they were unable to afford the cost, relatives were committed not to perform an autopsy unless they encountered some legal or insurance issues.

Discussion & Conclusion: Despite the efforts of MoPH, the prevalence of ill-defined COD remained high, especially in the emergency department, falling short of MoPH's goal. This was caused by the uncleared medical history and the inability to perform an autopsy. The implementation of financial support and interventions for specific CODs is recommended.

Keywords: ill-defined causes of death, cause of death, death certificate

Abstract : PT-CT028

Factors Associating Mortality Among Tuberculosis Patients in Sanam Chai Khet Hospital, Chachoengsao Province, Thailand.

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Background: Tuberculosis continues to be a significant infectious disease and a pressing public health concern, both on a national and global scale. While the incidence of tuberculosis appears to be decreasing, the persistently high death rate remains a major challenge.

Objectives: The aim of the study is to identify factors associated with mortality in patients with an in-hospital diagnosis of tuberculosis in Sanam Chai Khet hospital, Chachoengsao Province, Thailand.

Methods: A retrospective cohort study was conducted in Sanam Chai Khet hospital, Chachoengsao Province, Thailand between 1 January 2020 and 31 December 2022. Chi-square tests with 95% confidence intervals were performed to identify factors associated with mortality in tuberculosis patients.

Results: During the study period, 275 registered tuberculosis patients were identified. The overall mortality rate was 11.2%. Non-tuberculosis related diseases were the common cause of death; including malignancy, stroke, respiratory failure and heart failure. 32.2% of deaths in tuberculosis patients occurred early in 1-2 months after the initiation of treatment, with the mean time of death was 3.97 months. Factor associated with mortality were age > 65 years (OR= 2.31, 95%CI = 1.09-4.92), extrapulmonary tuberculosis (pleura, lymph node, spine, meninges, pericardium and disseminated tuberculosis) (OR= 3.40, 95%CI = 1.46-7.90), and comorbidities of cancer (OR=4.25, 95%CI=1.01-17.94).

Discussion & Conclusion: Elderly patients with age exceeding 65 years old, diagnosed with extrapulmonary tuberculosis, and underlying comorbidities of cancer were associated with death in tuberculosis patients. These factors lead to a weakened immune system in the patient and resulting in a range of symptoms across multiple bodily systems, which often leads to a delay in diagnosing and treating the condition. This study suggests the importance for healthcare providers to prioritize and closely monitor patients with these risk factors, aiming to enhance the overall outcome of tuberculosis treatment.

Keywords: tuberculosis, mortality, risk factors

Medical Education Research

Antibiotic Self-Medicating, Adverse Outcomes, and Associated Factors Among Thai Medical Students.

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Background: Preventing infectious disease transmission relies on robust infection control practices. However, information regarding these practices among medical students and their connection to knowledge about antibiotic use and infection control remains limited.

Objectives: We aimed to evaluate infection control practices among medical students and their correlation with knowledge regarding antibiotic use and infection control.

Methods: An online survey was conducted between January and April 2023, involving clinical-year medical students from a Thai public university. Antibiotic use and infection control knowledge were assessed based on correct responses to 18 provided statements, totaling a score of 18.

Results: Out of 111 participating students, 51% were female, and 31%, 32%, and 37% were in their 4th, 5th, and 6th years of medical school, respectively. Most students reported consistent handwashing after contact with patient blood or body fluids (93%) and before conducting aseptic procedures (73%). However, only 55%, 34%, and 23% always washed their hands after examining patients, after contacting patient surroundings, and before examining patients, respectively. Additionally, 36% never reused unwashed white coats, 23% never placed patient charts on beds or surrounding areas, and 18% always cleaned their stethoscopes before examining new patients. The median knowledge score was 14 and remained consistent across academic years. Students who almost always or always washed their hands after patient blood or body fluid contact had higher median knowledge scores compared to those who did not (14 vs. 10; $p<0.001$). Multivariable analysis identified graduating from an international high school as a factor associated with inadequate handwashing (adjusted odds ratio 3.34; $p=0.02$).

Discussion & Conclusion: This study reveals insufficient adherence to infection control practices, including hand hygiene at key moments, gown replacement, and stethoscope hygiene among medical students. These findings highlight the need for improvements in infection control practices and knowledge among future physicians, considering the associations found between infection control practices, knowledge, and other factors.

Keywords: antibiotics, self-medicating, infection control

Abstract : PT-ME002

Enhancing Gross Anatomy Education: A Study on The Simulation-Based Learning in Thai Medical School Lectures.

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Background: Technology has become an integral part of our daily lives, and its integration with traditional teaching methods can yield significant advantages for both educators and learners. In the realm of medical education, Gross Anatomy (GA) holds a pivotal role in medical training. Historically, the primary modes of teaching human anatomy involved donor dissection and specimen-based dissection. However, by augmenting traditional, passive classroom instruction with Simulation-based Learning (SiBL) approaches such as animation or virtual classrooms, there emerges a promising avenue for enhancing both skills and knowledge acquisition. This hybrid approach combines the strengths of traditional teaching with the interactive and engaging qualities of technology, potentially leading to noteworthy improvements in the educational process.

Objectives: To examine the efficacy of traditional lecture-based instruction in comparison to SiBL within the context of GAlectures.

Methods: Participants were enlisted from various Thai medical schools employing a stratified random sampling method. Data were gathered via a comprehensive survey and semi-structured interviews. Descriptive statistics were additionally employed to condense and present the survey data.

Results: The survey of 48 participants revealed that the majority (85.4%) rely on professors' PowerPoint slides for GA lectures. Notably, 83.67% considered SiBL the most effective method. Furthermore, 35.4% with SiBL experience reported better understanding (Levels 4–5). A significant 66.7% deemed simulation essential for Gross Anatomy (Levels 4–5). 72.9% agree that SiBL in lectures was seen as the most conducive to active learning (Levels 4-5). The preferred simulation tool was 3D Anatomy applications, garnering 54.2% of the votes. These results highlight the significance of SiBL in improving engagement and comprehension in GA studies.

Discussion & Conclusion: Learning GA lectures primarily through lecturer-provided slides was the prevailing approach. However, this method may not sufficiently stimulate activity-based learning or active student participation. In contrast, SiBL, particularly when integrated with 3D anatomy applications, emerges as the most effective strategy for enhancing comprehension and learning. Incorporating SiBL into the study of GA is deemed an essential educational method that fosters active learning. Hence, the development and utilization of SiBL alongside 3D anatomy applications represents promising avenues for enhancing students' learning efficiency and deepening their grasp of GA knowledge in future educational endeavors.

Keywords: gross anatomy, simulation-based learning, lecture

Abstract : PT-ME003

Online Learning Experience in 2021-2022 in Fifth-Year Medical Student at Hanoi Medical University.

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Background: Online learning is a tendency in education worldwide, especially in universities. Hence, students need to be acquainted with online learning for career development. While students engaged with digital technologies in their learning activities, the experience of student engagement in online learning remains underexplored. Therefore, a study to explore students' experiences is needed.

Objectives: The purpose of this study is to describe the online learning experience of fifth-year medical students at Hanoi Medical University in 2021-2022.

Methods: A retrospective study was conducted in late May and early July 2023 among management students attending a medical university in Vietnam. The respondents included fifth-year medical students in 2022-2023 at Hanoi Medical University. We analyze survey responses provided by 272 respondents. We used the STATA 16.0 program to calculate the frequency and ratio.

Results: According to this study, most students learn through online learning services in 2021-2022 for learning theory, practice and clinical courses. Moreover, 66.18% of students assume that objects/lectures were designed clearly about objectives/tasks, examinations, and study methodologies, and all those were uploaded on the LMS system before starting curriculums. Besides, 44.12% of students believe that they felt comfortable joining in a clinical case conversation, giving their ideas without judgment. Nevertheless, 60% of students assume that theory examination via online system was monitored perspicuously, and 60.66% of students believe that "Clinical examination was monitored detail and perspicuously".

Discussion & Conclusion: Numerous students have positive assessments of their lecturers, especially lecturers who encourage communicating and contributing to lectures. Nevertheless, some students have indicated that the communication was inactive because of a lack of proactive in students through learning via the online platform and have reported that some lecturers have less repaired detailed exams during a lesson driving students to hardly understand lessons entirely. Furthermore, numerous students responded that learning clinical modules through online platforms was quite challenging. 80% of students showed that learning clinical modules without realistic practice makes them barely improve their clinical skills and experiences. In conclusion, most students agree that learning theory modules via online platforms and clinical modules should be kept with traditional learning methodologies.

Keywords: online learning, medical student

Measurement of Stress in Medical Students using Non-Invasive Saliva-based miRNA Measurement.

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Background: Medical students compared to other study program students have more intensive study activities including more frequent exams, shorter period between each exams, etc. Military medical students compared to regular medical students have additional mandatory physical activities each day and during semester break, thus have more stress trigger. Stress conditions in students usually measured by questionnaire, and also by biomarker cortisol hormone obtained from saliva. Just recently miRNA from blood serum has been successfully used for student stress measurement.

Objectives: In this study we confirmed the stress level of Indonesia Defense University students using questionnaire, then performed the measurement of miRNA and cortisol hormone expression level from saliva. This non-invasive method is easier to perform and thus can be used to help create study activities which may less stressful to the students.

Methods: Questionnaire was applied to 150 medical students in semester 7th and 5th, and as comparison to a total of 75 students of semester 5th from engineering faculty (mechanical engineering, information engineering, and electrical engineering) of the Indonesia Defense University. Measurement of miRNA expression from saliva was performed using let-7b and miR-21, with U6 as internal control. After extraction of total RNA, real-time PCR was performed using Sybr-green based method. Measurement of cortisol hormone level was performed for comparison.

Results: The questionnaire confirmed that medical students have higher stress level compared to other study program students. However in term of academic achievements, medical students doesn't lack behind which maybe due to higher competition to enter medical study program resulted in better input in general. Targeted miRNA has been able to be measured in saliva compared to previous published blood serum specimens. The results are in comparison to cortisol measurement.

Discussion & Conclusion: As newly erected study program in 2020, medical school of Indonesia Defense University still has many to do to perfect its study activities. One of the ways is to create study activities which result in less stress such as balancing between academic education and physical exercises. As one tool to assess the study activities, measurement of miRNA level in saliva could be used.

Keywords: medical students, stress level, saliva, miRNA

Abstract : PT-ME005

Incorporation of 3D Scanning as a Tool for Studying Hip Anatomy and Total Hip Arthroplasty.

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Background: Not enough emphasis has been shown on the importance of anatomical spatial orientation in medical curricula despite it being an essential quality in clinical and surgical practice. As anatomical education evolves from dissection-based learning to incorporate more digital learning resources, comprehension of the human three- dimensional (3D) anatomy, which is generally acquired during cadaveric dissection, is compromised. An alternative anatomy learning resource, 3D-scanned models, could offer a solution to this problem.

Objectives: To generate protocols for sequential 3D scanning of cadaveric hip-thigh prosection and evaluate the potential of 3D scanning to aid in spatial comprehension of the hip and thigh anatomy and total hip arthroplasty.

Methods: Dissection of the hip and thigh region was conducted from superficial to deep,with 3D scanning undertaken sequentially. The scans were then edited and processed to create full 3D-reconstructed models that represent varying degrees of dissection completed.

Results: Three digital 3D models of the hip-thigh region were generated. On SCAN-1, SCAN- 2 and SCAN-4, 100%, 65.4% and 47.4% of visible neurovascular and muscular structures displayed good clarity and accuracy to the prosection, respectively.

Discussion & Conclusion: Protocols for sequential 3D scanning of the hip and thigh during dissection have been developed, although some limitations in technique exist. Three models were successfully produced with relatively good structural precision. Failure of model construction likely resulted from prosection rotation and the number of scans used to generate the model. Overall, the future of the 3D scanning as a tool for learning anatomy seems promising. It offers an accurate, safe and portable solution for access to cadaveric specimens, meanwhile preserving the pathology observed. However, its use as an anatomically accurate learning resource for medical and surgical training would require a degree of experience and expertise.

Keywords: 3D-scanning, medical education, hip anatomy, Total hip arthroplasty, anamoty education

Abstract : PT-ME006

Exploring of Medical Schools' Admission and Disability Support Policies in Various Countries.

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Background: Achieving the inclusion of individuals with disabilities in the medical profession, in order to reflect the diversity of the communities is a top priority. This helps reduce stigma, stereotypes and lessen healthcare disparity and create better health outcomes. The policies regarding admission and disability support might play a crucial role in the under-representation of medical students with disabilities.

Objectives: To explore and compare medical schools' different admission and supporting policies for people with disabilities in various countries.

Methods: The admission and supporting policies regarding people with disabilities from the official medical board exam websites, medical schools' official websites and accreditation bodies' websites of sixteen countries from various regions and income distribution were selected for documentary analysis. Data unavailable in English were excluded. Four critical questions from the "Self-Assessment of Technical Standards" were used to determine the characteristics and the level of inclusivity.

Results: Three domains were analyzed; 1) accessibility of data, 2) inclusivity of selection, and 3) offering and types of disability support. The majority (n=10) of admission policies were classified as inclusive, eight of which are partly inclusive and two fully inclusive. Of the five Asian countries' policies, two are exclusive and tend to be based on the medical model of disability and two are hard to access. Supporting policies could be categorized into 5 areas: facility & equipment (n=7), service (n=4), financial support (n=4), evaluation and testing adjustment (n=4) and others (n=2).

Discussion & Conclusion: Most of the admission policies are considered partly inclusive, but very few align with current best practices. There is also a considerable number of exclusive policies, characterized by discouraging language, unacknowledged accommodations and strong statements concerning patient safety. Numerous kinds of support for disabled students are offered in most countries. Regarding accessibility, many of the admission and supporting policies are hard to locate, possibly adding extra barriers for potential applicants. To conclude, the policies regarding admission and disability support should be reviewed and revised regularly, based on both medical and social models of disability, to improve access and representation of individuals with disabilities in order to cultivate the diversity of the medical communities.

Keywords: ableism, policy, disability, admission, medical education

Abstract : PT-ME007

Exploring the Impacts of 'My First Volunteer: First-year Medical Students Assisting Alumni Patients' on Empathy and Healthcare System Literacy.

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Background: In this modern-day medical profession, a holistic approach is crucial and academic activities alone help students in medical schools learn only a part of it. Therefore, enhancing empathy and patient-centered insight as well as healthcare system literacy through extracurricular activities should be implemented.

Objectives: The study aimed to investigate the impacts of first-year medical student volunteers in patient settings on enhancing empathy, patient-centered insight, and healthcare system literacy, while motivation to volunteer was also examined. Moreover, other information such as gender, and whether students lived with the elderly or not was collected to explore correlations among the data.

Methods: This short-term volunteer activity was to accompany patients of alumni during their doctor visits. The online questionnaire was distributed to volunteers one day prior to and after volunteer activity via Email. Toronto Empathy Questionnaire (TEQ) and Volunteer Function Inventory (VFI) were used to assess empathy and motivation to volunteer, respectively. Statistical analysis was conducted using a Paired *t*-test, Pearson's correlation coefficient, Unpaired t-test, and analysis of variance after Kolmogorov-Smirnov test.

Results: This cohort study (n=51) unveiled that the Toronto empathy scores of first-year medical students had statistically significant improvement (mean difference= 1.47, p=0.008) after participating in a volunteer activity. Moreover, participants perceived that they had significantly higher patient-centered insight ($p<0.001$) and hospital healthcare literacy ($p<0.001$). Prior to volunteering, women had significantly greater empathy scores than men ($p<0.05$), whereas there was no significant difference in post-volunteering . According to the VFI, an understanding factor was a predominant motive. Interestingly, students who lived with the elderly had a higher score on an enhancement factor than the other group ($p<0.05$).

Discussion & Conclusion: This study revealed not only the positive impacts of volunteer programs on empathy but also indicated motivation to volunteer, and correlation with relevant factors. As a result, the perspectives of first-year medical students on a holistic approach could be improved through this program. Further research on the effect of the time period of the program and whether it should be a curricular or extracurricular activity should be performed to improve effectiveness.

Keywords: empathy, volunteer, first-year medical student, holistic approach, healthcare system literacy

Abstract : PT-ME008

Peer Assessment, The Promising Tools for Professionalism Evaluation.

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Background: In our faculty, peer assessment is a part of grading systems to gauge the performances apart from academics of students. Medical professionalism is not only about academics but also soft skills. Nowadays, The letter grading system is widely used for knowledge evaluation. However, there is no universal soft skills evaluating system which leads to our interest in the correlation between peer assessment scores and the level of soft skills.

Objectives: To find the correlation between peer assessment and other factors related to professionalism in pre-clerkship medical student

Methods: The participants of 290 pre-clerkship medical students completed the Toronto Empathy Questionnaire (TEQ), and the Cooperative-competition strategy scale (CCSS). A total of 212 valid responses were tested for normality with the Kolmogorov-Smirnov test. There are six independent variables; demographics, Empathy (EMP), Cooperative (COOP), and Competitive (COMP). There are four dependent variables; MCQ, Spot, formative, and Peer. The Spearman's rank correlation and the Mann-Whitney U test were conducted for every possible correlation and difference between peer score groups respectively.

Results: A result from 212 students shows the correlation between Peer and EMP ($r = 0.153$, $p = 0.026$), Peer and Spot ($r = 0.143$, $p = 0.038$), EMP and COOP ($r = 0.398$, $p < 0.001$), and COMP and COOP ($r = 0.181$, $p = 0.008$). However, Peer is not correlated with COOP ($r = 0.010$, $p = 0.886$). The Mann-Whitney U test was used to determine the difference between two groups classified by peer score; average and above average. The difference in Spot test scores between two groups is demonstrated ($p = 0.030$).

Discussion & Conclusion: The correlation between Peer and EMP is established which emphasizes the importance of peer score evaluating medical professionalism. Interestingly, Peer and COOP do not have any correlation although EMP and COOP have some correlations. Our hypothesis is that CCSS directly measures the attitude toward success, however, medical professionalism is not only success, but also other parameters such as empathy, altruism, and responsibility. Moreover, the students above average in Peer perform better in Spot test. The causative of two parameters is still inconclusive and requires further study.

Keywords: peer assessment, empathy, cooperation, competition, pre-clerkship medical student

Abstract : PT-ME009

Advance Care Plan in Medical Students and Medical cadets: Perceptions, Practices and Associated factors.

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Background: Understanding how attitudes and perceptions of death affect practices among medical students is important in the development of death and the advanced care plan (ACP) within the medical curriculum to improve outcomes for both patients and students.

Objectives: To improve Phramongkutklao College of Medicine (PCM)'s death and ACP by identifying the profile of attitudes, perceptions, practices, and associated factors among medical students and cadets at PCM on death, specifically a good death (calm and peaceful).

Methods: 132 PCM students were randomly selected and completed an online electronic questionnaire in August–September 2023. The questionnaire consisted of questions adapted from the death-attitude profile revised (DAP-R) by Dr. Paul Wong and proven by experts and others' perceptions of death and the ACP.

Results: Regarding DAP-R, students moderately agreed with neutral acceptance (believing that death is an integral part of life, $\overline{X}$=4.31±0.93). However, they were undecided regarding their approach acceptance (believing in a happy afterlife, $\overline{X}$=3.21±0.84) and escape acceptance (believing that when life is full of pain, death may be a welcome alternative, $\overline{X}$=3.22±1.12), fear of death ($\overline{X}$=2.90±1.01), and death avoidance ($\overline{X}$=2.86±1.22). 67.42% of respondents reported they may be stressed or worried if relatives' objectives upon the death of the patient did not correspond with the patient's previous intentions. Students in this group were found to have undecided levels of fear of death and approach acceptance ($\overline{X}$=3.05±0.99, 3.25±0.82). Students who did not report being stressed or worried in the above-mentioned situation were found to disagree moderately with fear of death ($\overline{X}$=2.67±1.22) and agree moderately with approach acceptance ($\overline{X}$=3.52±1.08). These differences in each group are statistically significant (p=0.035, 0.023).

Discussion & Conclusion: Most respondents have not studied palliative care. However, they largely viewed death with natural acceptance. This may be related to their religion (Buddhism). Most students did not believe they may be worried when finding relatives' intentions did not comply with the patient's intentions. Respondents tended to agree moderately with approach acceptance, as a group that believes that death is not the end. As a result, this finding might serve as guidance for the students' future study plans.

Keywords: good death, advanced care plan, death attitude

Abstract : PT-ME010

Improving Medical Student Performance in Renal Physiology with Application of Flipped Classroom.

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Background: Various active teaching strategies, such as flipped classroom (FC), team-based learning, and small group discussion have undergone extensive development and scholarly investigation to improve conventional teaching's limitations, notably low knowledge retention, cognitive engagement, and instructional effectiveness [1-5]. However, within the complicated field of renal physiology, evidence for the application of the FC method remains scarce.

Objectives: To evaluate the satisfaction and effectiveness of FC in renal physiology teaching.

Methods: We compared two classes of second-year medical students in the Faculty of Medicine, Chulalongkorn University who received different types of learning. Specifically, the class in the academic year 2021 was instructed by conventional one-way lecture, whereas the class in the academic year 2022 was instructed by FC approach using pre-recorded instructor lectures followed by synchronous case discussions. A short-term topic understanding and achievement was assessed by a summative examination score administered a few weeks afterward. Attitude toward FC method was also assessed with a survey launched to the intervention group after completing the course.

Results: Students in the FC group achieved a higher score in summative examination than the control group with a mean difference of 7.2 ± 0.8 (70.1 ± 8.9 in FC vs. 62.8 ± 9.9 in conventional lecture, p-value < 0.001, a total score of 90). The results from the survey demonstrated that most students agreed that FC should be applied in renal physiology despite the increased stress level. Additionally, the post-test quizzes after finishing each recorded lecture were very helpful and assistive in topic understanding.

Discussion & Conclusion: Well-designed FC is a promising and highly effective method in renal physiology teaching. Cautions for the instructor include increased students' stress levels.

Keywords: flipped classroom, renal physiology, medical education

Abstract : PT-ME011

Impact of the COVID-19 Pandemic on Clinical-Year Medical Students in Phramongkutklao College of Medicine.

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Background: Coronavirus disease (COVID-19) is a newly emerging disease that appeared in late 2019. The symptoms of COVID-19 vary from asymptomatic to severe respiratory disease or death.

Objectives: This study aims to explore the impact of the COVID-19 pandemic on clinical-year medical students in Phramongkutklao College of Medicine (PCM).

Methods: A cross-sectional study was conducted on fourth and fifth year PCM medical students with a 27-question questionnaire consisting of 12 for knowledge, 9 for attitudes, and 6 for behaviors. Then the descriptive statistic, Chi-square, Man-whitney U-test, and Kruskal-wallis were used for data analysis at a significant level (α) = 0.05.

Results: The average score of students' knowledge of COVID-19 was 10.0 ± 2.2 out of 12. Students reported that they gained information about COVID-19 mostly from social media (71.4%) and their primary source of information was published articles (42.9%). Based on the study, students had problems with the indication for medication, especially if it is not the first line. For the attitudes, most students were afraid to infect any relatives or people around them while working in the medical field (91.4%) and were more cautious with standard measures (88.6%). However, 55.7% of students were stressed that they chose the healthcare profession, and 58.6% of them reported that COVID-19 negatively affects their mental health. Additionally, only 60% of respondents said they had complete faith in the institution's countermeasures.

Regarding the behaviors, students showed their attention to countermeasures taken in their daily lives (Use of personal protective equipment (100.0%), frequent handwashing (98.6%), avoiding crowded places (90.0%), routine monitoring by ATK (88.6%), avoid physical contact (82.9%), taking a shower upon arrival home (81.4%)).

Furthermore, the study found that students' knowledge did not associate with COVID-19 infection (p = 0.913). However, gender, educational level, and source of information were associated (p = 0.003, 0.009, 0.044).

Discussion & Conclusion: Although PCM students had satisfying knowledge, attitude, and behavior of COVID-19, half of them got infected by COVID-19. The awareness of students' mental health should be increased.The institution should consider providing information, especially the treatment guideline through social media as it was the most chosen source of information among students.

Keywords: COVID-19 treatment knowledge, medical students

Abstract : PT-ME012

Prevalence and Associated Factors of Increased Risk for Sleep-disordered Breathing and its Relationship with Body Mass Index Among Medical Students, Interns, and Residents at Phramongkutklao Hospital, Bangkok, Thailand.

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Background: Poor sleep quality among medical professionals, due to study demands and shift work, significantly impacts health. Additionally, this group has a higher obesity prevalence compared with the general population.

Objectives: This study aims to evaluate the prevalence and associated factors of increased risk for sleep-disordered breathing and its relationship with body mass index (BMI) among medical students, interns, and residents.

Methods: A cross-sectional study was conducted from June to August 2023 using online self-assessment questionnaires including the demographics, factors associated with obesity and the Pittsburgh Sleep Quality Index (PSQI). Data analysis involved the use of the Mann-Whitney U test and Kruskal-Willis test for comparing medians when appropriate, while the chi-square test was used for analyzing categorized data. Additionally, logistic regression analysis was performed to identify factors associated with an increased risk of sleep disorders. Linear regression analysis was also conducted to establish the relationship between sleep quality and BMI.

Results: Overall, there were 307 participants, comprising 114 medical students, 120 interns, and 73 residents in Phramongkutklao hospital. One-third of participants (36.48%) had an increased risk of sleep-disordered breathing. Protective factors included working as interns (aOR: 0.19, 95% CI: 0.07-0.50) and engaging in adequate exercise (aOR: 0.51, 95% CI: 0.28-0.93). Factors significantly increasing the risk included working in surgical specialties (aOR: 1.97, 95% CI: 1.15-3.37), working more than 40 hours per week on shift work (aOR: 2.62, 95% CI: 1.22-5.64), and consuming black coffee (aOR: 2.01, 95% CI: 1.01-3.99). Interestingly, underweight individuals had significantly higher PSQI scores (β=0.34, 95% CI: 0.06-0.63) while obese did not. Residents had the highest proportion of obesity class 2 (13.9%, p=0.008). However, only obese medical students significantly attempted to lose weight.

Discussion & Conclusion: To enhance sleep quality, incorporating adequate exercise is advisable. However, it is important not to overly emphasize the strict control of diet and weight. Additionally, at the medical organizational level, improvements in sleep quality can be achieved by adjusting shift work schedules and protocols. Further research could investigate the perceptions and awareness of weight loss among obese medical students, interns, and residents.

Keywords: sleep-disordered breathing, body mass index, sleep quality

Systematic Review and Meta-Analysis Research

How Close to Real Life Can in Vitro Infection Models be?

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Background: Biofilm are the underlying cause of chronic wound infections in many patients. Due to the high resistance to antimicrobials of biofilms, the use of antimicrobials fails to treat biofilm-related infections. To gain a deeper understanding of mechanisms involved in the bacterial biofilm formation and development in a chronic wound setting, *in vitro* models that can closely mimic the real wound environment are required.

Objectives: In this review, various *in vitro* infection models were compared to assess 1) how closely the models are at mimicking the reality, 2) the advantages, disadvantages and limitations, and 3) the suitability of models for application, especially for therapeutic approaches.

Methods: A search of studies included in this review was performed via PubMed, MEDLINE, and EMBASE between September 2021 and November 2021, generating 100 studies. After the removal of duplication and screening, 11 papers were selected. The remaining 11 papers were studies of the chronic-wound-related *in vitro* infection models with biofilms containing either *Pseudomonas aeruginosa* or *Staphylococcus aureus*.

Results: A comprehensive analysis of different *in vitro* models was completed to assess how each model has been developed to mimic the complex environment of the chronic wound. Each model has its own strengths and weaknesses, as it was specifically developed for a different purpose. Limitations of one model may be beneficial for another model, as it is more closely related to the realistic environment for the desired purpose.

Discussion & Conclusion: The more recently developed models are better at mimicking environment present in the *in vivo* settings, thus, they are more realistic. However, there has not been a model that fits all or represents all aspects of the chronic wounds.

Keywords: biofilm, in vitro, infection model, chronic wound

Abstract : PT-SM002

Association between Vitamin D Deficiency and Inflammatory Bowel Disease.

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Background: Crohn's disease (CD) and ulcerative colitis (UC) are the primary types of inflammatory bowel disease (IBD), with vitamin D deficiency being more common and prevalent compared to the general population. IBD patients are prone to vitamin D deficiency due to factors like malabsorption, limited dietary intake, corticosteroids, reduced sunlight exposure, and genetics. Vitamin D offers numerous benefits for IBD, including its anti-inflammatory and immune-modulating properties.

Objectives: To review and evaluate the influence of vitamin D on inflammatory bowel disease.

Methods: For this review, we chose articles sourced from the PubMed database. Keywords that were used in this research “Inflammatory Bowel Disease”, “Vitamin D deficiency”, “Crohn's disease” and “Ulcerative colitis”. The inclusion criteria were studies that focused on inflammatory bowel diseases that examined vitamin D concentration within the past decade. Exclusion criteria were case reports, pediatric and duplicate studies. PubMed research gave out 143 papers. Total of 15 studies were included.

Results: The research findings indicated that individuals with UC and CD had significantly lower serum vitamin D levels in comparison to the healthy people. Recent studies highlighted that vitamin D deficiency is a significant indicator of increased clinical disease activity and is correlated with more severe outcomes. In both CD and UC, patients experiencing moderate to severe manifestations of the conditions generally displayed lower serum vitamin D levels compared to those in remission or with milder forms of the conditions. CD patients’ vitamin D deficiency was linked to higher clinical activity and higher fecal calprotectin levels. In case of UC, it was associated with clinical activity, recent usage of steroids, and hospitalizations within the past year. Low levels of circulating 25(OH)D3 correlate with intestinal and systemic inflammation, resulting in increased hospitalizations, disease flares, steroid use, and escalated treatment.

Discussion & Conclusion: Vitamin Ds role in modulating the immune system and its anti-inflammatory properties appear to be crucial factors in its impact on IBD. Moreover, new studies have indicated that vitamin D supplementation may be beneficial on disease management, regulating severity of symptoms and enhancing the response to traditional treatments.

Keywords: vitamin D deficiency, inflammatory bowel disease, Crohn’s disease, ulcerative colitis

Abstract : PT-SM003

Heavy Metals Association with Chronic Obstructive Pulmonary Disease.

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Background: Exposure to heavy metals, such as cadmium, lead, and arsenic, often occurs through environmental sources like industrial pollution or tobacco smoke. These toxic elements can be inhaled or ingested, making their way into the respiratory system and bloodstream. Once inside the body, heavy metals damage lung tissue, ultimately contributing to the development and exacerbation of chronic obstructive pulmonary disease (COPD). Furthermore, heavy metals have been linked to increased susceptibility to respiratory infections and may worsen the symptoms and prognosis of individuals already afflicted by COPD.

Objectives: To review and evaluate the influence of heavy metals on chronic obstructive pulmonary disease.

Methods: For this review, we chose articles sourced from the PubMed database. Keywords that were used in this research “Heavy metals”, “Chronic obstructive pulmonary disease”, “Cadmium”, “Lead” and “Arsenic”. Included studies were focused on one or few heavy metals that cause chronic obstructive pulmonary disease within the past decade. Exclusion criteria were case reports, letters, duplicate studies.

Results: PubMed search returned 96 papers. A total of 15 studies were included. Selected papers show significant damage to human body by heavy metals within the few years of exposure. As the duration of exposure to heavy metals increases, the severity of COPD tends to worsen. Increased cadmium levels were found to be associated with reduced FEV in individuals who smoke. This was also caused by their occupational risks as coal miners or welders. In a different research, it was observed that patients in general exhibited higher levels of cadmium and lead when compared to healthy individuals. In addition, urinary cadmium may be utilized as an indirect biomarker to detect subclinical chronic lung function decline among individuals in the healthy population.

Discussion & Conclusion: The relationship between heavy metal exposure and COPD underscores the intricate interplay between environmental factors and respiratory health. Heavy metals, prevalent in various industrial, occupational, and environmental causes, can significantly impact lung function and contribute to the development and severeness of COPD. This could illuminate potential underlying mechanisms and offer valuable insight for shaping future government policies.

Keywords: heavy metals, chronic obstructive pulmonary disease, cadmium, lead

Abstract : PT-SM004

Association of Granuloma Annulare with Diabetes Mellitus, Hyperlipidemia, and Hypothyroidism.

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Background: Granuloma annulare (GA) is a relatively common dermatologic condition. Despite its prevalence, little is known about its epidemiology and pathogenesis. The association of GA with other diseases, notably diabetes mellitus (DM), dyslipidemia, and thyroid diseases, has been reported, but evidence remains conflicting.

Objectives: This study aimed to explore the potential relationship between granuloma annulare and diabetes mellitus, dyslipidemia, and thyroid disorders.

Methods: We conducted a systematic review of articles published in the PubMed Database since 2012. Keywords used for the search were “granuloma annulare”, “associated diseases”, “diabetes mellitus”, “dyslipidemia”, and “thyroid disease”.

Results: Out of 130 articles returned by PubMed, we screened titles and abstracts for relevance after removing duplicates. Ultimately, 9 articles met the criteria for inclusion in this review. The study's findings suggest that diabetes mellitus, dyslipidemia, and hypothyroidism are associated with granuloma annulare. Both types of diabetes mellitus and hypothyroidism are more prevalent in the GA patient group compared to the control group. The association between granuloma annulare and dyslipidemia was statistically significant ($p<0.05$). When stratifying the groups by gender, no significant relationship among the comorbidities was found. However, women were more likely to be diagnosed with GA. Furthermore, patients with generalized GA demonstrated a stronger association with dyslipidemia and diabetes than those with localized GA.

Discussion & Conclusion: Our findings suggest a potential association between granuloma annulare and conditions such as diabetes mellitus, hyperlipidemia, and hypothyroidism. However, further studies are essential to ascertain if these identified associations play a role in the pathogenesis of GA.

Keywords: granuloma annulare, associated disease, diabetes mellitus, dyslipidemia, thyroid disorder

Abstract : PT-SM005

Influence of Anti-amyloid-β Monoclonal Antibodies on The Occurrence of Major Side Effects (Amyloid Related Imaging Abnormalities [ARIA]): A Comprehensive Analysis of Aducanumab, Lecanemab and Donanemab

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Background: Amyloid-related imaging abnormalities (ARIA) represent abnormal differences of magnetic resonance imaging observed in patients with Alzheimer's disease being treated with anti-amyloid-β monoclonal antibodies. ARIA can be categorized into two subtypes, amyloid-related imaging abnormality edema and effusion (ARIA-E) and amyloid-related imaging abnormality microhemorrhages and superficial siderosis (ARIA-H). Both forms of ARIA typically tend to have a higher incidence in patients with apolipoprotein E ε4 allele carriers and occur early in amyloid-beta (Aβ) immunotherapy.

Objectives: Consequently, this systematic review and meta-analysis were conducted to investigate the occurrence of ARIA in patients receiving anti-amyloid-β monoclonal antibodies for Alzheimer disease (AD) and focus on Aducanumab, Lecanemab and Donanemab.

Methods: A comprehensive systematic search across PubMed, Scopus, and ClinicalTrials.gov, covering phase III clinical trials from their inception to September 2023 was performed. Two independent reviewers conducted screening, data extraction, and risk bias assessment. The Fix effect or random-effect model meta-analysis was used depending on data heterogeneity. The primary outcome was risk of anti-amyloid-β monoclonal antibodies induced ARIA. The secondary outcome was risk of anti-amyloid-β monoclonal antibodies induced ARIA between apolipoprotein E ε4 allele carriers and non-apolipoprotein E ε4 allele carriers.

Results: The meta-analysis included 6,827 patients in 4 Clinical Trials. Anti-amyloid monoclonal antibodies significantly increased risk of ARIA {RR=2.92 [95% CI (2.28, 3.75), P<0.00001, I2=84%]} and ARIA-E {RR=9.79 [95% CI (6.32, 15.16), P<0.00001, I2=48%]}. Additionally, in subgroup analysis by APOE-ε4, both ARIA-E_APOE-ε4 carriers {RR=12.37 [95% CI (8.08, 18.94), P<0.00001, I2=63%]} and ARIA-E_APOE-ε4 non-carriers {RR=6.27 [95% CI (4.28, 9.18), P<0.00001, I2=38%]} were significantly increased risk of ARIA-E. Moreover, by comparing risk of APOE-ε4 carriers and APOE-ε4 non-carriers, APOE-ε4 carriers has significantly increased risk with RR=1.94 [95% CI (1.69, 2.24), P<0.00001, I2=17%]. Furthermore, in subgroup by drugs, patients with APOE-ε4 carrier being treated with Lecanemab increased the greatest risk with RR=2.93 [95% CI (1.73, 4.95), P<0.00001].

Discussion & Conclusion: In conclusion, anti-amyloid-β monoclonal antibodies notably increased risk of ARIA and ARIA-E in both APOE-ε4 carriers and APOE-ε4 non-carriers. APOE-ε4 carriers also significantly increased risk of ARIA-E over APOE-ε4 non-carriers suggesting that the acknowledgment of ARIA holds substantial implications concerning patient selection and the continuous monitoring of those receiving anti-amyloid-β monoclonal antibodies.

Keywords: alzheimer, amyloid, immunotherapy, aducanumab, lecanemab, donanemab, ARIA

Abstract : PT-SM006

Meta-Analysis of Retatrutide in Obesity Management: Efficacy and Safety Insights from Clinical Trials According to Dosage.

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Background: There are numerous pharmacological interventions for obesity. However, these medications rarely achieve weight loss greater than 15%. Recently, trials have explored retatrutide, a triple-hormone-receptor agonist, for obesity.

Objectives: This study aimed to investigate Retatrutide's efficacy and safety for weight loss.

Methods: PubMed and Google Scholar were scoured from database inception until 1 September 2023 to identify relevant double-blinded, placebo-controlled, randomized trials. Studies comparing retatrutide use with placebo for obesity were included, with the essential data for analysis extracted.

Results: Three trials enrolling 640 patients were identified from 260 records and were eligible for inclusion. A significant difference was observed in the mean change in weight at 12 and 36 weeks regardless of dosage [mean difference (MD): 5.93, 95%CI: 4.28-7.57, p<0.001] and (MD: 11.60, 95%CI: 7.40-15.79, p<0.001) respectively with the most prominent change in the 8 mg fast escalation group at 12 weeks (MD: 9.68, 95%CI: 5.86-13.51, p < 0.001) and in the 12 mg escalation group at 36 weeks (MD: 17.12, 95%CI: 10.91-23.33, p < 0.001). Treatment-emergent adverse events were most notable in the 4 mg group, 8 mg fast escalation group, and 12 mg escalation group (OR: 2.36, 95%CI: 1.07-5.19, p = 0.03), (OR: 2.86, 95%CI: 1.25-6.54, p = 0.01) and (OR: 3.33, 95%CI: 1.76-6.31, p = 0.0002) respectively. Lastly, only the 12 mg escalation group showed a significant decrease in HbA1c levels (MD: 16.40, 95%CI: 13.03-19.78, p < 0.001).

Discussion & Conclusion: Our meta-analysis supports the efficacy of higher doses of retatrutide in lowering mean body weight and blood HbA1c levels. Increased odds of treatment-emergent adverse events in some specific doses are also seen, and providers should be aware of these when prescribing retatrutide.

Keywords: obesity, weight-loss medication, diabetes

Abstract : PT-SM008

A Systematic Review of The Comparison of The Four Different Approaches of Hip Arthroplasty and Their Outcomes.

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Background: Hip arthroplasty or hip replacement is a type of surgical procedure performed to address hip pain in which the damaged hip joint is replaced with an artificial one. From 2003-2021, a total of 1,480,047 primary hip replacements were performed within the UK with the leading cause being osteoarthritis. There exist numerous methods of approaching hip arthroplasty surgery, among them are partial hip arthroplasty, hip resurfacing, the direct anterior approach, and the supercapsular percutaneously assisted total hip arthroplasty (superPATH).

Objectives: To systematically review and compare partial hip arthroplasty, hip resurfacing, direct anterior approach, and superPATH. Additionally, a prosection of the gluteal region and posterior thigh will be produced to aid in the anatomical understanding of the hip region.

Methods: A literature search using the relevant search terms and Boolean operators was performed on PubMed and NUsearch for each of the four approaches of hip arthroplasty, yielding a total of 36 results which were used in the review.

Results: Regarding function outcome, hip resurfacing had the highest Harris hip score (95.73), Oxford hip score (26.71) and highest patient satisfaction (91.84). Patients undergoing superPATH experienced the least pain (1.17) and least blood loss (127.83 ml). DAA had the lowest hospitalisation time (2.66 days) and over all lowest revision rate (3.65%).

Discussion & Conclusion: Overall, superPATH has one of the best functional outcomes, least pain, the lowest amount of mean blood loss, and the lowest complication rate. However, findings in this systematic review were at times, contradictory to the literature, for example, it is reported that superPATH has shorter hospitalisation times than traditional approaches. Further research should be carried out to ascertain whether one hip arthroplasty approach is truly superior to the others.

Keywords: hip arthroplasty , partial hip arthroplasty, hip resurfacing, direct anterior approach, superPATH

Abstract : PT-SM009

Atopic dermatitis and Risk of Venous thromboembolism: A Systematic Review and Meta-analysis.

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Background: Increasing evidence has suggested the association between atopic dermatitis (AD) and incident venous thromboembolism (VTE). However, the results of these studies remain inconsistent.

Objectives: Our study aims to determine the association between AD in adulthood and the risk of developing VTE.

Methods: A systematic search of MEDLINE, Scopus, EMBASE, Cochrane Library, and medRxiv was performed through August 2023 to identify eligible cohort studies examining the risk of VTE among adults (age ≥18 years) with AD versus non-AD controls. Two reviewers independently extracted key study characteristics and outcomes. Disagreements were resolved by discussion with two other authors. Quality assessments were performed according to the Newcastle-Ottawa Scale (NOS). The PRISMA and Meta-analysis of Observational Studies in Epidemiology (MOOSE) reporting guidelines were followed. The adjusted hazard ratio (aHR) were pooled using the random-effects meta-analysis. Only studies that report adjusted hazard ratio, not crude hazard ratio, were included in the meta-analysis to avoid the effects of confounders. Subgroup analysis was conducted according to the severity of AD. Publication bias was evaluated by funnel plot.

Results: Of 5,574 identified studies, 5 cohort studies (n = 4,771,362) were eligible for inclusion; 3 of 5 reporting adjusted hazard ratio (n = 4,456,086) were included in the meta-analysis. No significant association was found between overall AD and risk of incident VTE (pooled aHR,1.00; 95% CI, 0.87-1.15). Interestingly, the subgroup analysis revealed a significantly increased risk of VTE in the population with moderate AD (pooled aHR, 1.09; 95% CI, 1.06-1.12, I2=0%) and severe AD (pooled aHR, 1.45; 95% CI, 1.24-1.70, I2=74%), but no significant association was found in mild AD (pooled aHR, 1.12; 95% CI, 0.96-1.32, I2=94%). No evidence of publication bias was observed. Quality assessment of the included studies were high.

Discussion & Conclusion: Inconsistency of statistical models adjusted for confounders and variation of study designs among included studies are partly the explanation for heterogeneity. In conclusion, Adulthood AD, particularly moderate and severe, is significantly associated with an increased risk of VTE. These findings may provide a reference for managing AD patients with presentations of VTE risk. Additional well-designed cohorts and research exploring underlying mechanisms for the association of AD and VTE are warranted.

Keywords: atopic dermatitis, venous thromboembolism, pulmonary embolism, deep vein thrombosis, systematic review, meta-analysis

Abstract : PT-SM010

Imaging the Invisible: The Radiographic Clues of Child Abuse.

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Background: Child abuse, a deeply troubling global issue, is often concealed until severe or fatal consequences arise. Advances in radiological techniques over the past few decades offer clinicians pivotal insights into detecting non-accidental injuries, even when external signs are subtle or non-existent.

Objectives: To synthesize available literature on the radiographic signs indicative of child abuse, emphasizing their significance and diagnostic accuracy.

Methods: The articles used for this review were selected from PubMed database of the last 10 years, using the keywords "pediatric radiology", "child abuse" and "non-accidental injuries". Articles were further refined based on relevance, methodology quality, and the clarity of their findings.

Results: The PubMed search returned 287 papers. After removing duplicates, titles and abstracts were screened for eligibility. A total of 11 papers were included in this review. The studies showed that critical radiographic findings include classic metaphyseal lesions, often described as corner or bucket-handle fractures. These are considered almost pathognomonic for abuse in infants. Other findings are multiple fractures at various healing stages. When these fractures are inconsistent with the child's developmental stage or the history provided, abuse becomes a significant differential. Additionally, certain rib fractures, especially those that are posterior or at costovertebral junctions, raise immediate suspicion. These injuries are rarely due to typical falls or minor accidents. Significant or complex occipital skull fractures are more consistent with high-energy trauma, which is uncommon in typical child play. Lastly, fractures of the acromion, sternum, and spinous processes are so rare in accidental conditions that they carry a high specificity for abuse.

Discussion & Conclusion: While no single finding is diagnostic on its own, a combination of the aforementioned signs, especially when compared to an unclear or inconsistent history, significantly heightens the suspicion of abuse. Radiologists and pediatricians must work in tandem, ensuring that these silent and often overlooked indicators are given the gravity they deserve in clinical evaluations.

Keywords: child abuse, non-accidental injuries

Abstract : PT-SM011

Zuranalone for treatment of Major Depressive Disorder:A Systematic Review and Meta Analysis.

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Background: Current treatment modalities for Major Depressive Disorder have variable efficacies and a variety of side effects.To amend this, many trials for short term ,well tolerated monotherapies are underway. One such option is Zuranalone (SAGE-217), a recently FDA approved antidepressant, undergoing clinical trials for postpartum depression (PPD), major depressive disorder (MDD) and essential tremors (ET).

Objectives: Pool currently available data that compares Zuranolone to Placebo for the treatment of Major Depressive Disorder and evaluate its efficacy and safety profile.

Methods: We retrieved data from PUBMED and SCOPUS from inception to July 2023. We included articles comparing Zuranalone or SAGE 217 with placebo in patients suffering from Major Depressive Disorder. Review Manager 5.4 was used to analyse the outcomes including changes in HAM-D, HAM-A and MADRS scores from baseline as well as any treatment emergent adverse events (TEAEs) and severe adverse events.

Results: Our review analysed 4 trials and the data of 1357 patients. Patients treated with Zuranalone indicated a statistically significant effect in the change from baseline in HAM-D score (P=0.0009; MD [95% CI]: -2.03 [-3.23, -0.84]) as well as in MADRS score (P=0.02; MD [95% CI]: -2.30[-4.31, -0.30]) and HAM-A score (P=0.03; MD [95% CI]: -1.41[-2.70, -0.11]) on 15th day when compared to the Placebo group. Zuranolone was also significantly associated with a higher response rate (P=0.0008; OR[95% CI]:1.63[1.14, 2.35]) and higher remission rate(P=0.03; OR[95% CI]:1.65[1.05, 2.59]) when compared with the placebo. As for safety,Zuranolone was significantly associated with 1 or more TEAE (P=0.006; RR[95% CI]: 1.14[1.04, 1.24]) but an insignificant association with side effects that lead to drug discontinuation (P=0.70; RR[95% CI]: 1.18[0.51, 2.76]) and serious adverse events (P=0.48; RR[95% CI]: 1.46 [0.52, 4.10]) when compared with placebo.

Discussion & Conclusion: Zuranolone is an effective and safe drug for short course major depressive disorder monotherapy. Its showing results in 14 days(compared to 2-4 weeks that SSRI's take) and has anti-anxiolytic effects as well.However, only 4 trials have been used for the analysis and the sample size was small.The trials reviewed also can not determine the long term effects of the drug.More trials are needed.

Keywords: zuranolone, major depressive disorder, depression

Abstract : PT-SM012

The Safety and Efficacy of Ginger and Peppermint for Nausea and Vomiting in Pregnant Women.

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Background: Nausea and vomiting in pregnancy (NVP), also known as “morning sickness”, occurs in 70-80% of pregnancies. Some women seek relief through alternative treatments like ginger and peppermint. Easy accessibility of herbs to expectant mothers due to limited regulation raises concerns, because effects and potential interactions with prescribed medications are not always fully considered and may result in unknown effects during pregnancy or serious complications for the fetus.

Objectives: To review and evaluate the safety and efficacy of ginger *(Zingiber officinale)* and peppermint *(Mentha × piperita)* for relieving nausea and vomiting symptoms in pregnant women.

Methods: The review sourced articles from PubMed and Google Scholar, focusing on ginger or peppermint's safety and efficacy in pregnant women over the past 10 years. Keywords included 'Safety,' 'Efficacy,' 'Ginger,' 'Peppermint,' and 'Pregnancy.'

Results: This analysis included a total of six papers. Studies indicate that orally administered ginger is significantly more effective than placebo in reducing the frequency of nausea and vomiting episodes and intensity of symptoms during pregnancy. Ginger can have adverse effects for women, such as heartburn, gastric pain and drowsiness. Ginger also interacts with drugs, such as antiplatelets and anticoagulants. There does not appear to be an increased likelihood of congenital malformations, stillbirth, preterm birth, low birth weight, or low Apgar score with the use of ginger during pregnancy. Peppermint oil aromatherapy reduces nausea, although the effect is not significantly greater than that of a placebo. Peppermint has emmenagogue effects on the uterus. However, the dose range for these effects in the human uterus is unknown. It reduces the effectiveness of antacid drugs. Scientific evidence for the safety of peppermint during pregnancy has not been found.

Discussion & Conclusion: Ginger has been shown to be effective in relieving nausea and vomiting during pregnancy, but caution is advised due to safety concerns such as possible side effects and drug interactions. Peppermint may provide relief. However, more research is needed to determine its effectiveness and safety during pregnancy. For this reason, pregnant women should consult a health professional before considering these products.

Keywords: peppermint, ginger, safety, efficacy, pregnancy

Abstract : PT-SM013

Telemedicine Versus Conventional Outpatient Care for Paediatric Asthma Follow-ups: A Systematic Review and Meta-analysis.

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Background: Asthma is the leading cause of chronic illnesses in childhood and remains a significant cause of childhood disability and morbidity. Despite the emergence of several adherence interventions and management guidelines, asthma remains as a predominant healthcare burden and health care utilization due to frequent exacerbations. Telemedicine facilitates clinicians in providing virtual consultations and assessments to pediatric patients, eliminating the need for in-person visits to their doctors' office and offering a more convenient and efficient healthcare delivery.

Objectives: This study aims to assess the efficacy of telemedicine compared to conventional outpatient care in paediatric asthma follow-ups.

Methods: A systematic literature search was conducted in PubMed and EMBASE. Studies comparing telemedicine and conventional outpatient care in the follow-up of paediatric asthma were identified. Non-interactive web-based resources or education resources were excluded in this study. A random-effects meta-analysis model was used to compare the outcomes. Risk ratios (RRs) were used for dichotomous outcomes and standardised mean differences (SMDs) were used for continuous outcomes with 95% confidence interval (CIs).

Results: A total of 11 studies involving 3719 patients (1836 telemedicine group and 1883 conventional outpatient care group) were included in the this meta-analysis. Telemedicine intervention is probably equivalent to conventional outpatient care for emergency department visits (RR 0.86, 95% CI 0.66-1.12) and hospitalisation (RR 0.77, 95% CI 0.54-1.08) in cases of asthma exacerbation. No differences were observed for asthma symptom-free days between both groups (SMD 0.14, 95% CI -0.04-0.31). Patients in the telemedicine group had a higher rate of well-controlled asthma compared to conventional outpatient care group (RR 1.27, 95% Cl 1.14-1.42). However, there were no differences in both groups in terms of risk of poorly-controlled asthma (RR 0.83, 95% Cl 0.58-1.20). Furthermore, the Paediatric Asthma Quality of Life Questionnaire (PAQLQ) score in telemedicine group was higher than in conventional outpatient care group (SMD 0.41, 95% Cl 0.01-0.82). However, there were also no differences in both groups in terms of patient-reported outcomes, which include Asthma-Control Test (ACT) and childhood-Asthma Control Test (c-ACT).

Discussion & Conclusion: The present findings suggest that telemedicine may be an effective alternative to in-person visits for paediatric asthma follow-ups for improving asthma control.

Keywords: telemedicine, asthma, paediatric, outpatient

Abstract : PT-SM014

The Association of Primary Hyperparathyroidism with Metabolic Syndrome: A Systematic Review And Meta-Analysis.

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Background: Primary hyperparathyroidism (PHPT) is a medical condition characterised by an increased activity of the parathyroid glands, resulting in an excessive secretion of the parathyroid hormone (PTH). PHPT causes metabolic imbalances via the disruption of calcium metabolism, alterations of the adipokine profile, endothelial cell dysfunction and hormonal imbalances. These imbalances may lead to metabolic syndrome by affecting blood pressure regulation, glucose metabolism, and fat storage. Hence, it is hypothesised that PHPT is closely associated with metabolic syndrome (MS).

Objectives: This study aims to investigate the metabolic effects of PHPT and its association with MS.

Methods: A systematic literature search was conducted using PubMed and EMBASE to retrieve studies reporting the metabolic effect of PHPT. Parameters of MS that were measured in this study included body mass index (BMI), serum creatinine, total serum calcium, ionised serum calcium, serum uric acid, lipid profile (serum HDL and LDL cholesterol and total serum triglycerides), fasting plasma glucose and random plasma glucose. The standardised mean differences (SMDs) were calculated using the random-effects method in Cochrane Review Manager.

Results: A total of 9 studies, involving a total of 3,291 patients (1,640 in the PHPT group and 1,651 in the control group), were included in this meta-analysis. Total serum calcium and ionised serum calcium were found to be elevated in the PHPT group compared to the control group, with SMDs of 2.50 (95% CI 1.75-3.26) and 2.87 (95% CI 1.34-4.39), respectively. Total serum triglyceride levels were also observed to be higher in the PHPT group as compared to the control group, demonstrating a SMD of 0.42 (95% CI 0.18-0.66). There were no significant differences in BMI, serum uric acid, serum creatinine, serum HDL cholesterol, serum LDL cholesterol, fasting plasma glucose, and random plasma glucose between the PHPT group and the control group.

Discussion & Conclusion: Patients with PHPT demonstrated higher total serum triglyceride, serum calcium and ionised calcium levels. However, there was no significant correlation of PHPT to other related metabolic parameters such as BMI, lipid profile, serum uric acid, serum creatinine and plasma glucose levels.

Keywords: primary hyperparathyroidism, metabolic syndrome, lipid profile, serum calcium

Abstract : PT-SM015

Prevalence of Cardiovascular Complications in Leptospirosis: A Systematic Review and Meta-Analysis.

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Background: Leptospirosis is a widespread zoonotic disease with a clinical spectrum that ranges from non-specific febrile episodes to severe life-threatening forms such as multi-organ dysfunction syndrome. Cardiac involvement is closely related with the severity of disease. Cardiac manifestations may range from non-specific electrocardiographic abnormalities to myocarditis and cardiogenic shock. This is hypothesised to be driven by systemic inflammation, endothelial dysfunction, arrhythmias, myocardial injury, hemodynamic shifts, and ultimately, cardiogenic shock which may lead to cardiovascular collapse. Therefore, recognising and assessing cardiac abnormalities is vital to prevent further complications and enhance prognosis.

Objectives: This study aims to investigate the prevalence of cardiovascular complications in patients with leptospirosis and the mortality rate.

Methods: A systematic literature search was conducted using PubMed and EMBASE to retrieve studies reporting the cardiovascular complications in patients with leptospirosis. Cardiovascular complications were defined as abnormalities in cardiac biomarkers, electrocardiogram (ECG), echocardiography, myocarditis and the presence of other cardiac manifestations such as hypotension, congestive heart failure, ischaemic heart disease, circulatory failure and cardiovascular collapse. The pooled prevalence was calculated using the random-effects generic inverse variance method in Cochrane Review Manager.

Results: A total of 13 studies involving 949 patients were included in this meta-analysis. The overall prevalence of cardiovascular complications in patients with leptospirosis was 36% (95%CI, 10-62). The pooled prevalence estimate for abnormal cardiac biomarkers was the highest compared to other cardiac investigations, at 61% (95%CI, 51-71), followed by ECG at 52% (95%CI , 38-67) and echocardiography at 41% (95%CI , 21-61). The prevalence of myocarditis was 5% (95%CI, 2-8), while the presence of other cardiac manifestations was 25% (95%CI, 15-35). The overall mortality rate of cardiovascular complications in patients with leptospirosis was 3% (95%CI, 2-5).

Discussion & Conclusion: Cardiovascular complications are frequent in patients with leptospirosis, emphasising the need for timely identification and immediate treatment to prevent further complications and enhance prognosis.

Keywords: leptospirosis, cardiovascular complications, mortality, tropical disease

Abstract : PT-SM016

The Efficacy of Telemedicine for Post-operative Follow-Up Assessment: A Systematic Review and Meta-analysis.

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Background: Telemedicine empowers healthcare professionals to provide post-operative assessments remotely to surgical patients as compared to conventional face-to-face outpatient appointments. In-person appointments can be time-consuming due to the extensive travel distances, lengthy wait times, and long periods in-between between follow ups. Telemedicine has the potential to reduce the physician's workload and mitigate outpatient clinic overcrowding, overall enhancing patient care and experience. Nonetheless, remote care has drawbacks like connectivity and technical issues; overlooked surgical complications due to the limitations of physically examining patients. Despite numerous advantages, the widespread implementation of telemedicine services for post-operative follow-up remains limited in the current healthcare landscape due to various constraints.

Objectives: This study aims to investigate the post-operative complications and patient satisfaction between telemedicine and face-to-face patient care.

Methods: A systematic literature search was conducted in PubMed and EMBASE. Studies reporting the telemedicine versus the standard of care in post-operative follow-up were identified. Postoperative complications and re-admission rate amongst postoperative patients were identified as primary outcomes, with patient satisfaction and patient's preference as secondary outcomes. A random-effects meta-analysis model was used to compare outcomes in Cochrane Review Manager.

Results: A total of 14 studies involving 1942 patients (775 telemedicine group and 1167 standard of care group) were included in this meta-analysis. The most common surgical specialty in the studies involved was orthopaedic surgery (6 studies), followed by general surgery (5 studies), gynaecology (2 studies) and urology (1 study) respectively. There were no significant differences in the post-operative complication rates (risk ratio: 0.81, 95% CI 0.56-1.18) and re-admission rates after the surgery (risk ratio: 0.65, 95% CI 0.37-1.15). Patients in the telemedicine group reported satisfaction levels comparable to those in the standard care group (risk ratio: 1.00, 95% CI 0.97-1.02). Furthermore, patients in the telemedicine group expressed a preference for telemedicine as the future mode of follow-up, in contrast to the conventional care group (risk ratio: 2.78, 95% CI 1.80-4.31).

Discussion & Conclusion: Telemedicine emerges as a promising alternative for post-operative follow-up, given that it exhibits no significant difference in post-operative complications when compared to the conventional care group, while maintaining comparable levels of patient satisfaction.

Keywords: telemedicine, post-operative follow-up, complications

Abstract : PT-SM017

Associations between Parkinson's Disease and Mental Disorders.

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Background: Parkinson's disease is a chronic, progressive neurodegenerative disorder caused by the degeneration of dopaminergic neurons in the substantia nigra, leading to motor and non-motor symptoms. This disease is primarily recognized for its characteristic motor symptoms, such as tremors, rigidity, and bradykinesia. However, recent years have seen growing attention to the non-motor manifestations, particularly the comorbidity of mental disorders in Parkinson's disease patients.

Objectives: To review and evaluate the relationship between Parkinson's disease and mental disorders.

Methods: For this review, articles were selected from the PubMed database, limited to studies from the last 10 years that focused on mental disorders related to Parkinson's disease, using the keywords "Parkinson's disease", "Mental Disorders", and "Comorbidity".

Results: The PubMed search returned 205 papers. After duplicate removal, titles and abstracts were screened for eligibility. A total of 7 papers were included in this review. The studies indicate an increased prevalence of mental disorders in individuals with Parkinson's disease. It is generally accepted that clinically significant depressive disturbances occur in 40–50% of patients, while anxiety disorders are present in 30-35%. Recent studies reveal that impulsive-compulsive behaviors, such as pathological gambling, hypersexuality, compulsive eating, and excessive buying, occur in over 25% of Parkinson's disease patients. Studies have shown that risk factors, including disease severity, longer disease duration, rapid disease progression, specific dopaminergic treatments, and the presence of other non-motor symptoms, increase the risk of mental disorders in Parkinson's disease patients. Dopaminergic treatments, especially dopamine agonists, are associated with increased rates of impulse control disorders in multiple studies. Mental disorders in Parkinson's disease, such as depression, anxiety, and psychosis, are often treated with a combination of medication adjustments, specific pharmacological therapies like SSRIs for depression or antipsychotics for psychosis, and cognitive-behavioral therapy. Impulse control disorders in Parkinson's disease may necessitate reducing or discontinuing dopaminergic medications, especially dopamine agonists. Non-pharmacological interventions, including exercise, social engagement, and other supportive therapies, play an essential role in managing mental disorders in Parkinson's disease patients.

Discussion & Conclusion: Mental disorders represent a significant comorbidity in Parkinson's disease patients. Effective management of these disorders requires a comprehensive approach, integrating both medication adjustments and evidence-based non-pharmacological interventions.

Keywords: Parkinson's disease, mental disorder, comorbidity

Abstract : PT-SM018

Quadriceps Muscle Graft for ACL Reconstruction in Young Athletes: Efficacy and Return to Athletic Performance.

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Background: Young athletes who sustain anterior cruciate ligament (ACL) injuries face major difficulties and frequently need surgery before they can return to sports safely. Due to their durability and low donor-site morbidity, quadriceps tendon autografts have become a viable option; nevertheless, more research is needed to determine their precise efficacy and results in young athletes.

Objectives: The purpose of this study is to assess the efficacy of quadriceps tendon autografts in young athletes' ACL reconstruction. The major aims are to assess the graft's effectiveness, research postoperative problems, and examine the elements determining a successful return to sports following surgery.

Methods: The recent literature was thoroughly reviewed, with an emphasis on studies from the last ten years. We looked for studies comparing quadriceps tendon autografts for ACL restoration in young athletes in PubMed and pertinent orthopaedic journals. The analysis includes studies describing patient outcomes, complications, graft survival rates, and time to resume training.

Results: Twenty relevant studies supporting the value of quadriceps tendon autografts for ACL restoration in young athletes were found in the review. These grafts displayed durability, few donor site issues, and less postoperative complications. Young athletes in particular have effectively recovered to their pre-injury athletic levels, frequently with quicker recovery times than other transplant sources. Other difficulties were observed, including the necessity for certain rehabilitation regimens and the low morbidity at the transplant site.

Discussion & Conclusion: Young athletes can recover quickly and successfully after ACL surgery using quadriceps tendon autografts, with good results. Even though there are small issues, improving rehabilitation techniques may help these transplants work even better. To ensure that young athletes may safely resume their sports efforts following surgery, it is essential to conduct ongoing research and develop specialised rehabilitation procedures.

Keywords: anterior cruciate ligament, ACL reconstruction, quadriceps tendon autotransplantation, young athletes, return to training, graft efficacy, rehabilitation, sports medicine.

Abstract : PT-SM019

Comparative Analysis of Surgical Techniques for The Treatment of Epicondylitis: Evaluation of Outcomes and Long-Term Outcomes.

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Background: Epicondylitis, which includes lateral (tennis elbow) and medial (golfer's elbow) variants, often requires surgical intervention when conservative treatment proves ineffective. The choice of surgical technique greatly affects patient outcomes. Understanding the comparative effectiveness of these approaches is critical to optimising treatment protocols for epicondylitis.

Objectives: The aim of this thesis is to provide a comprehensive review and comparative analysis of surgical techniques used in the treatment of epicondylitis. The main objectives are to evaluate short-term, long-term outcomes and factors influencing the success of various surgical interventions for epicondylitis.

Methods: A systematic search of the PubMed database was performed, focusing on studies published within the last decade. Inclusion criteria included studies comparing different surgical treatments for epicondylitis, including randomised controlled trials, cohort studies, and meta-analyses.

Results: From the initial search, which yielded 356 articles, 12 studies met the inclusion criteria after careful screening and removal of duplicates. The comparative analysis revealed the nuances of the results of different surgical methods. Open surgery has been shown to provide similar short-term pain relief to arthroscopic techniques, and arthroscopic techniques have often shown faster recovery and fewer complications. Autografts and allografts have shown similar functional outcomes, with allografts showing a potential benefit in reducing donor-site morbidity. Additionally, structural rehabilitation programs have been consistently associated with better long-term functional outcomes across a variety of surgical techniques.

Discussion & Conclusion: This comparative analysis highlights the importance of tailored surgical strategies for epicondylitis in terms of short-term pain relief and long-term functional outcomes. Arthroscopic techniques, although often associated with faster recovery, must be carefully evaluated for long-term efficacy. The choice of autografts and allografts should be individualised based on functional outcomes and donor site morbidity issues. Additionally, emphasizing structural rehabilitation programs after surgery significantly increases the overall success rate of epicondylitis interventions.

In conclusion, understanding the comparative effectiveness of treatments for epicondylitis is critical to optimising patient care. Continued research and collaboration within the medical community is essential to continually improve these techniques and ensure the best possible outcomes for patients suffering from this debilitating condition.

Keywords: epicondylitis, surgical methods, comparative analysis, results, rehabilitation, arthroscopic surgery, autografts, allografts.

Abstract : PT-SM020

Efficiency of Zinc Treatment in Inflammatory Skin Diseases: A Systematic Review.

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Background: Inflammatory skin diseases encompass a broad spectrum of dermatological conditions, impacting millions of individuals globally. These diseases not only affect physical health but also considerably diminish the overall quality of life of affected individuals. The therapeutic potential of zinc, given its role in skin biology and its immune-modulatory properties, has garnered increasing attention in the search for effective treatments for these conditions.

Objectives: This review aimed to evaluate the efficacy of zinc treatment in inflammatory dermatologic conditions, specifically acne vulgaris, atopic dermatitis, hidradenitis suppurativa, and rosacea.

Methods: We conducted a systematic review of articles published in the PubMed Database from 2012 onwards, using the keywords “zinc treatment”, “acne vulgaris”, “atopic dermatitis”, “hidradenitis suppurativa”, and “rosacea”.

Results: Out of the 174 articles returned by PubMed, titles and abstracts were screened for relevance following the removal of duplicates. Eventually, 14 articles were selected for this review. The findings indicate that zinc is effective in treating acne vulgaris, particularly in minimizing the number of inflammatory episodes. Combining zinc with other compounds demonstrated enhanced efficacy in mitigating acne damage. Zinc supplementation resulted in the amelioration of the extent and severity of atopic dermatitis, pruritus, and transepidermal water loss. While zinc was effective in maintaining the phase of hidradenitis suppurativa and treating its inflammatory lesions, it exhibited limited efficacy against chronic lesions. The effectiveness of zinc in rosacea treatment remains contentious. Some studies suggest that zinc considerably reduces the disease severity score in acne rosacea, while others indicate that its efficacy is even less than that of a placebo.

Discussion & Conclusion: The therapeutic application of zinc in inflammatory skin diseases has shown promising results across various conditions like acne vulgaris, atopic dermatitis, hidradenitis suppurativa, and potentially rosacea. Nevertheless, further comprehensive studies are warranted to robustly ascertain the therapeutic potential of zinc in these conditions.

Keywords: zinc treatment, acne vulgaris, atopic dermatitis, hidradenitis suppurativa, rosacea

Abstract : PT-SM021

Genu Valgum: Conservative and Operative Treatment in Children.

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Background: A frequent orthopedic ailment in children called genu valgum, also referred to as "knock knees," is characterised by a greater angle between the knees when standing with the feet together. The gait, alignment, and overall musculoskeletal health of a kid are significantly impacted by this disorder. In order to maintain healthy growth and development, it is crucial to comprehend the best management practices for genu valgum.

Objectives: This study's main goal is to evaluate the efficacy of non-operative and surgical treatments for genu valgum in young patients. The systematic review of publications from the PubMed database that were released within the last five years served as the foundation for this research.

Methods: Using keywords linked to treating genu valgum in children, articles from the PubMed database were chosen. To shed light on the most potent therapeutic modalities, a systematic review was carried out, and the chosen papers were critically assessed.

Results: After removing duplicates, screening titles and abstracts, a thorough search in PubMed turned up 268 articles, 10 of which met the requirements for inclusion. The following important conclusions are highlighted by the literature review:

Conservative Approach:
1. Bracing: There is evidence that bracing, especially when started at a young age, can be successful in treating mild to moderate genu valgum in children.
2. Physical Therapy: Strengthening of the muscles in the lower limbs and better alignment of the knee may result from physical therapy and focused exercises.

Operative Treatment:
1. Guided Growth: A less invasive surgical alternative for genu valgum correction is temporary hemiepiphysiodesis using methods like tension band plating or stapling.
2. Osteotomies: To surgically straighten the lower limbs in severe cases of genu valgum, corrective osteotomies may be required.

Discussion & Conclusion: Our analysis emphasizes the significance of developing treatment programs specifically for each child with genu valgum. In mild to severe cases, conservative treatments including bracing and physical therapy have showed benefit. Operative treatments including directed growth and osteotomies are only used in the most severe or resistant instances. Age, degree of deformity, growth potential of the child are only a few variables that should be taken into account for effective care.

Keywords: genu valgum, knock knees, children, conservative treatment, operative treatment, orthopaedics.

Abstract : PT-SM022

Efficacy of Atezolizumab Plus Bevacizumab Versus Lenvatinib in Patients with Unresectable Hepatocellular Carcinoma.

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Background: Hepatocellular carcinoma is a lethal disease and there has been a debate regarding the first line treatment of its advanced and unresectable form. Observational studies have explored atezolizumab plus bevacizumab versus Lenvatinib, yielding mixed results. This systematic review and meta-analysis aim to compare efficacy and safety of both treatment arms.

Objectives: The use of atezolizumab plus bevacizumab could increase the survival duration without effecting the disease course?

The severity of adverse events was greater in the A+B group but with comparable frequency to the Lenvatinib group?

Methods: A systematic literature review was conducted in accordance with PRISMA guidelines. Randomized control trials, cohort studies, or case-control that included patients above age 60 with unresectable hepatocellular carcinoma confirmed by radiological imaging were included. At least one of the outcomes: overall survival (OS), progression free survival (PFS), objective response rate (ORR), duration of response or adverse events was included in the selected studies.

Results: Seven cohorts were included in the analysis with a total of 3990 patients. Of these patients, 1556 patients received atezolizumab plus bevacizumab (A+B) combination while 2434 received Lenvatinib. The overall survival was better statistically in the A+B group then the Lenvatinib group (MD: -5.06; 95% CI: -7.79 to -2.33; p= 0.0003, I^2= 0%). The progression free survival was significantly improved in A+B arm as well (MD: -1.15; 95% CI: -2.18 to -0.11; p= 0.0004; I^2= 0%). There was no significant difference in objective response rate, disease control rate and frequency of adverse events in either of the group.

Discussion & Conclusion: This systematic review compared atezolizumab plus bevacizumab (A+B) and Lenvatinib for unresectable liver cancer. A+B showed longer overall survival and progression-free survival, possibly due to immune activation and anti-angiogenic properties. While A+B had a higher objective response rate, safety profiles were similar, with A+B associated with more severe adverse effects, like hepatitis B reactivation. Monitoring is crucial, especially for patients receiving locoregional treatments.

Keywords: hepatocellular carcinoma; atezolizumab; bevacizumab; lenvatinib; meta-analysis

Abstract : PT-SM023

Application of Genome Editing in Human to Cure Blood Related Diseases.

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Background: Since its invention in 2012, genome editing has been applied in many diseases, but majority are still in human cell levels. Only few have been reached to human level which became the focus of this study. In 2018, germ line genome editing has been incidentally reported by Chinese scientist, but then punished and banned. The only accepted application in human application is somatic therapy. In all successful reports of human level genome editing are targeted blood related diseases namely leukemia, thalassemia, and sickle-cell disease(SCD). In this study we reviewed the techniques used and chosen gene target, as well as conducted original public acceptance study to prepare for future application of this genome editing technology in Indonesia.

Objectives: Review of acceptable and applicable genome editing to cure disease at human level, and find out the techniques used as well as target genes. Performing public acceptance study of this application to prepare for future application of genome editing in Indonesia.

Methods: Genome editing papers were searched in Pubmed, Google Scholar and other available databases. Application in human study was separated from other non-human. Furthermore, only application at human level was picked up. The techniques used were studied, and target genes were analyzed. For public acceptance study, students of Indonesia Defense.

Results: There are 3 techniques in genome editing, namely CRISPR-Cas9, TALEN, and ZFN. CRISPR-Cas9 was used to cure thalassemia and SCD. While TALEN was used for curing Leukemia. As for the target genes, in both thalassemia and SCD, gamma globulin activation was aimed instead of replacement of defected beta or alfa globulin genes. In case of leukemia, T-cell receptor alpha-chain and CD52 genes was the target. Our surveys showed that majority of students accepted these techniques as long as applied for somatic cell therapy.

Discussion & Conclusion: In Indonesia context, thalassemia disease which still widespread maybe the good target for initial effort in human level genome editing. In term of human enhancement for military personnel to improve physical performance is also possible as long as ethically approved. (Supervisor : Dr. Arief Budi Witarto)

Keywords: genome editing, CRISPR-Cas9, TALEN, ZFN, thalassemia, SCD, leukemia

Effective Dosing of Prophylactic Acetazolamide for Acute Mountain Sickness Incidence and Symptoms: A Systematic Review and Meta-Analysis of RCTs.

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Background: Acute Mountain Sickness occurs as a response to body's acclimatization at high altitudes with 75% occurrence on 3,000 m. Existing dose recommendations for AMS prevention range from 125 mg per 12 h to 750 mg a day. However, the incidence of AMS symptoms based on dose and oxygen saturation remains unexplored.

Objectives: Determine the efficacy of acetazolamide for AMS incidence based on dosage, subject, percentage of men, consumption time, and incidence of other symptoms based on acetazolamide's dose.

Methods: Systematic search through PubMed, Scopus, Cochrane, Wiley, and ProQuest, were done until 17th September 2022. Critical appraisal of included studies with Cochrane Risk of Bias 2.0. We analyzed pooled Odd Ratio (OR) and its p-value using random effects model.

Results: Twenty-eight RCTs, yielding 1453 participants in intervention group and 1198 participants are included. Incidence of AMS was lower in acetazolamide group (OR=0.39 [95%CI:0.32-0.47],p<0.00001; I2=0%), subgroup analysis done based on subjects, percentage of man, and consumption time. Meta-analysis incidence of other symptomps done through dosage based subgroup analysis, namely headache (OR=0.46 [95%CI:0.36-0.59],p<0.00001), severe headache (OR=0.19 [95%CI:0.08-0.42],p<0.00001; I2=0%), numbness finger (OR=12.37 [95%CI:6.79-22.56],p<0.00001), numbness face and lips (OR=2.68 [95%CI:0.89-8.03] ,p<0.00001; I2=0%), and visual disturbance (OR=0.66 [95%CI:0.17-2.59], p=0.08).

Discussion & Conclusion: This meta-analysis found that acetazolamide doses of 125-375 mg produced significant decreasing of AMS incidence. Doses of 250 mg and 375 mg significantly reduced incidence of headache compared to 125 mg. We recommend factors such as history of AMS and combination with other drugs or gingko biloba to be considered in future studies.

Keywords: acute mountain sickness, acetazolamide, dosage, meta-analysis, prophylactic

Abstract : PT-SM025

Efficacy of Rituximab in Secondary Progressive Multiple Sclerosis Patient , A Systematic Review and Meta-analysis.

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Background: Secondary progressive multiple sclerosis (SPMS) is a subtype of multiple sclerosis characterized by its insidiously worsening disease progression after a relapsing-remitting course including a progression that occurs irrespective of relapsing episode. Following the establishment of clinical trials suggesting the benefit of utilizing Ocrelizumab, a humanized monoclonal anti-CD20 agent in SPMS, the efficacy of Rituximab, a chimeric anti-CD20 agent used as an off-label medication for SPMS, should be examined.

Objectives: To assess the efficacy of Rituximab in Secondary progressive multiple Sclerosis patients regarding slowing disease progression and moderating disease activity through a systematic review of the literature and meta-analysis.

Methods: We searched the PubMed and EMBASE databases on April 27, 2023. The search terms were as follows: 1. Secondary progressive multiple sclerosis 2. Progressive multiple sclerosis 3. Multiple sclerosis 4. Rituximab 5. Anti-CD20 6. Targeted therapy. We included 15 publications (2 randomized controlled trials) based on pre-defined inclusion criteria and performed assessments for quality and publication bias. The primary outcome assessed was the change in disease progression by comparing the EDSS before and after treatment.

Results: A total of 762 SPMS patients were included from 15 studies including 2 randomized controlled trials, 498 of 762 patients were female (65%). The overall change of EDSS extracted from 12 studies out of 15 studies analyzed using Forest plot was -0.01 with a 95% confidence interval of [-0.36, 0.34].

Discussion & Conclusion: The results indicate that there was no significant effect of disease progression reversal from Rituximab treatment. However, when compared with previous data on SPMS disease progression in patients without disease-modifying therapy, it was expected that the Expanded Disability Status Scale (EDSS) scores would exhibit an increasing trend. Therefore, the observed lack of significant change in EDSS scores after Rituximab administration could imply that there was no notable disease progression observed throughout the follow-up period.

This outcome may be interpreted as suggesting that Rituximab demonstrates efficacy in slowing down disease progression, albeit without achieving a complete reversal of the condition.

Keywords: secondary progressive multiple sclerosis, rituximab, anti-CD20, systematic review, meta-analysis, disease-modifying therapy

Abstract : PT-SM026

Evaluation of Virtual Reality as a Cardiopulmonary Resuscitation Training Tool : A Systematic Review Meta-Analysis.

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Background: Sudden cardiac arrest remains a significant global health concern. Fortunately, this can be helped by CPR, whose efficacy hinges on the quality of the compressions. Even though numerous people have undergone CPR training, many still do not deliver high-quality CPR, decreasing the patient's survival rate. However, a possible solution, Virtual reality (VR), has emerged recently as an accessible and cost-effective training tool offering real-life CPR training experience. Moreover, several studies suggest that VR can enhance the quality of CPR, yet a comprehensive review of these studies is currently lacking.

Objectives: To weigh the possibility of using virtual reality as an effective and alternative training method for CPR for the general public. The primary outcomes include chest compression rate and chest compression depth.

Methods: A literature search was performed based on PRISMA in PubMed, Embase, Cochrane, and Ebsco up to 27 September 2023. Keywords used were "Virtual Reality", “CPR”, and its synonym. Risk assessment of bias was performed using Cochrane RoB 2.0.

Results: Data from 20 of 613 studies were included. Our finding reports that VR is effective in improving chest compression rate (MD = 5.83; 95% CI 2.07 to 9.58) but not in chest compression depth (MD = -1.73; 95% CI -6.45 to 2.99) and overall performance (RR = 1.10; 95% CI 0.95 to 1.26).

Discussion & Conclusion: According to analysis, when compared to traditional training, CPR-VR training can significantly improve overall performance and chest compression rate. However, regarding the chest compression depth, the outcome was insignificant.

Keywords: VR, CPR, cardiac arrest, resuscitation

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"TMPR556 Polymorphisms and a Risk of Iron Deficiency Anemia in School-aged Children"

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Faculty of Medicine Ramathibodi Hospital, Mahidol University

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Faculty of Medicine, King Mongkut's Institute of Technology Ladkrabang

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Basic Science Research

Development of high-throughput screening assay for identification of mucus production Inhibitors as potential therapy for asthma

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Community-based Research

Effectiveness of daily self-weighing combined with hypocaloric diet and community personalized-dietary counseling for weight loss among adults with obesity in a rural community, Thailand: a community-based randomized controlled trial

Presenter: Mr. Saharat Liampeng

Institute: Phramongkutklao College of Medicine

Hospital-based Research

TMPRSS6 Polymorphisms and a Risk of Iron Deficiency Anemia in School-aged Children

Presenter: Ms. Rawinun Udomponglukkana

Institute: Faculty of Medicine Ramathibodi Hospital, Mahidol University

Medical Education Research

An Analytical Cross-Sectional Study on the Relationship of Perceived Social Connectedness and Burnout Symptoms in Medical Students from a Private Tertiary Institution in Metro Manila Enrolled in an Online Curricula for the Academic Year 2020-2021

Presenter: Mr. Vashwin Amarnani

Institute: University of the East Ramon Magsaysay Memorial Medical Center Inc.

Systematic Review and Meta-analysis Research

Efficacy of internet-based cognitive behavioral therapy for psychiatric problems in cancer survivors: A systematic review and meta-analysis of randomized controlled trials

Presenter: Mr. Nathaniel Dyson

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Poster presentation 2021

Basic Science Research

Alterations of Pseudomonas aeruginosa pathogenicity through analysis of post-transcriptional sense and antisense RNA targeted by RsmN regulatory protein

Presenter: Ms. Rinrada Sanghirun

Institute: Faculty of Medicine, University of Nottingham and Srinakharinwirot University

Community-based Research

Willingness to receive a COVID-19 vaccine among pregnant women residing in Thailand during the delta variant COVID-19 pandemic

Presenter: Ms. Prippraodao Suwansingh

Institute: Faculty of Medicine, Chulalongkorn University

Hospital-based Research

Clinical prediction rules to predict 1-year mortality in newly diagnosed pulmonary tuberculosis patients: A developmental phase

Presenter: Ms. Wikanda Udomdech

Institute: Phrae Medical Education Center, Faculty of Medicine, Naresuan University

Systematic Review and Meta-analysis Research

Meta-analysis of Enteral Lactoferrin Supplementation for Reducing the Risk of Preterm Infants Sepsis: A Perspective Review of the Preterm Infants Born to Mother with Severe COVID-19

Presenter: Mr. Rifaldy Nabiel Erisadana

Institute: University of Jember, Indonesia

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Oral presentation 2022

Basic Science Research

Toggle Macrophage: The Application of Binary CAR Macrophages in SARS-CoV-2 Immunotherapy

Presenter: Ms. Huanxiao Shi

Institute: Naval Medical University

Inhibition of intestinal tight junction-dependent leak pathway permeability

Presenter: Ms. Wanapas Wachiradejkul

Institute: Princess Srisavangavadhana College of Medicine, Chulabhorn Royal Academy

Community-based Research

Effects of Home-Based Nine-Square Step Exercises foe Fall Prevention in Thai Community-Dwelling Older Adults during a COVID-19 Lockdown -1st

Presenter: Ms. Disatorn Dejvajara

Institute: Faculty of Medicine, Chiang Mai University

Hospital-based Research

Clinical Scoring for Prediction of Oxygen Use in Patients with COVID 19 infection in a community hospital, Thailand: A Retrospective Cohort Study

Presenter: Mr. Thanapat Vongchansathapat

Institute: Phramongkutklao College of Medicine

Medical Education Research

AI Technology for Evaluation of Medical Student Practice Sutures

Presenter: Mr. Ashwin Chawla

Institute: Faculty of Medicine, King Mongkut's Institute of Technology Ladkrabang

Systematic Review and Meta-analysis Research

Comparative efficacy and safety among different doses of tenecteplase in acute ischemic stroke:

Presenter: Mr. Ekdanai Uawithya

Institute: Faculty of Medicine Siriraj Hospital, Mahidol University

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Poster presentation 2022

Basic Science Research

An agonist of a cannabinoid-sensing GPR55 enhances intestinal tight junction re-assembly via AMPK- and ERK-dependent mechanisms

Presenter: Ms. Nichapa Chindaduangratn

Institute: Princess Srisavangavadhana College of Medicine, Chulabhorn Royal Academy

Community-based Research

Exploring the Factors Influencing the Online Proxy Health Information-Seeking Behaviors of Parents of Pediatric Patients in Acropolis Greens Subdivision, Barangay Bagumbayan, Quezon City

Presenter: Mr. Ryan Gabriel Chiapco Molen

Institute: Ateneo de Manila University School of Medicine and Public Health

Hospital-based Research

Ultrafiltration Rate and The Risk of Intra-dialytic Hypotension in End-Stage Renal Disease Patients with First Hemodialysis: A multilevel analysis approach

Presenter: Mr. Sorrawit Sakhong

Institute: Medical education center at Phrae hospital, Naresuan University

Medical Education Research

An Academic Small World: A Network-based Analysis of Inequity in an Undergraduate Research Community

Presenter: Mr. Seksan Yoadsanit

Institute: Faculty of Medicine Ramathibodi Hospital, Mahidol University

Systematic Review and Meta-analysis Research

The Impacts of COVID-19 on the Management of Ankle Fractures and their Outcomes: A Systematic Review

Presenter: Mr. Ashwin Chawla

Institute: Faculty of Medicine, King Mongkut's Institute of Technology Ladkrabang

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