Inaugural Research Congress 2026

Postgraduate Institute of Medical Sciences
University of Peradeniya

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MESSAGE FROM THE CHIEF GUEST

Senior Professor Kapila Seneviratne
Chairman
University Grants Commission
Sri Lanka

It is with great pleasure that I extend my warm greetings to the organizers, distinguished guests and participants of the Inaugural Research Congress 2026 including the inaugural Sir Ivor Jennings orations of the Postgraduate Institute of Medical Sciences (PGIMS).

I am truly delighted and honoured to be present as the Chief Guest at this important academic event. The PGIMS, as the second postgraduate medical institute established in the country under the University of Peradeniya, has played a pivotal role in advancing postgraduate medical education and research in Sri Lanka.

I would like to express my sincere appreciation to the organizing committee for their dedication and commitment in successfully arranging this congress. Events such as annual research congress provide a valuable platform for the dissemination of research, fostering innovation, and strengthening academic collaboration among medical professionals and researchers.

I also take this opportunity to commend the significant developments and progress taking place within the PGIMS and the wider academic environment in Peradeniya. These achievements reflect a strong commitment to excellence in education, research, and healthcare, which are vital for national development.

As the Chairman of the University Grants Commission of Sri Lanka, I am pleased to witness the continued growth and impact of institutions like the PGIMS in shaping the future of medical education and research in the country.

I wish this Annual Research Congress 2026 of Postgraduate Institute of Medical Sciences, University of Peradeniya every success and look forward to the valuable contributions and outcomes that will emerge from this gathering.

MESSAGE FROM THE VICE- CHANCELLOR

Professor Terrence Madhujith
Vice Chancellor
University of Peradeniya

It is with great pleasure that I extend my warmest congratulations to the Postgraduate Institute of Medical Sciences (PGIMS), University of Peradeniya, on the occasion of its Inaugural Research Congress.

Research plays a pivotal role in advancing knowledge, addressing emerging challenges, and improving the well-being of society. In the field of health sciences in particular, research contributes significantly to enhancing patient care, informing policy decisions, and strengthening healthcare systems. The organization of this Research Congress reflects the commitment of PGIMS to fostering a vibrant research culture and promoting academic excellence among postgraduate scholars, researchers, and clinicians.

The University of Peradeniya has long been recognized as a center of academic excellence, often referred to as the "Cambridge of the Mahaweli." Initiatives such as this Congress further strengthen that legacy by providing a valuable platform for researchers to share their findings, exchange ideas, and build collaborative networks that advance scientific discovery and innovation.

I am especially pleased that the Inaugural Sir Ivor Jennings Oration will be delivered at this Congress. Sir Ivor Jennings, the founding Vice Chancellor of the University of Ceylon, laid the foundation for a strong academic tradition rooted in intellectual rigor, critical inquiry, and public service. Reflecting on his vision reminds us of our continuing responsibility to nurture a dynamic and forward-looking research environment.

I commend Prof. P. S. K. Nanayakkara, the Acting Director, the board members, the faculty members, and the organizing committee for making this inaugural event possible. I also congratulate all the paper presenters and authors, and I am confident that you will engage in fruitful and meaningful discussions. I am further confident that the Research Congress will serve as a significant milestone in strengthening postgraduate research and promoting interdisciplinary collaboration in the health sciences

I wish the organizers and participants every success and hope that the discussions and research presented will make meaningful contributions to the advancement of medical science and the betterment of society.

MESSAGE FROM THE DEPUTY VICE- CHANCELLOR

Professor Ranjith Pallegama
Deputy Vice Chancellor
University of Peradeniya

It is with great pleasure that I extend my warmest greetings to all participants of the Inaugural Research Congress of the Postgraduate Institute of Medical Sciences (PGIMS), University of Peradeniya.

The establishment of this research congress marks an important milestone in the academic journey of PGIMS and reflects the growing commitment of the University of Peradeniya towards advancing postgraduate medical education, scientific inquiry, and evidence-based healthcare. In today's rapidly evolving world, research is not merely an academic exercise; it is an essential foundation for innovation, policy development, and the improvement of human health and wellbeing.

I am particularly pleased that this inaugural congress is enriched by the Sir Ivor Jennings Oration titled *"The Jennings Paradigm: Cultivating a 21st-Century Research Culture in the Cambridge of the Mahaweli."* The theme is both timely and inspiring, reminding us of the enduring vision of Sir Ivor Jennings in shaping a university culture grounded in intellectual excellence, critical inquiry, and national relevance.

Research universities play a pivotal role in national development. The generation of new knowledge, interdisciplinary collaboration, and the translation of research into practice are essential for addressing emerging medical, social, and economic challenges facing Sri Lanka and the wider global community.

I commend the Director, academic staff, researchers, and organizing committee of PGIMS for initiating this important academic platform. I am confident that this congress will foster meaningful dialogue, inspire young researchers, and contribute significantly to the advancement of medical sciences in Sri Lanka.

I wish the congress every success.

MESSAGE FROM THE DIRECTOR

Professor P.S.K. Nanayakkara
Director
Postgraduate Institute of Medical Sciences
University of Peradeniya

It gives me great pleasure to extend my warm greetings to all participants of the Inaugural Research Congress 2026 of the Postgraduate Institute of Medical Sciences. This milestone event marks an important step in strengthening the research culture of our institute and providing a dedicated platform for postgraduate trainees, clinicians, academics, and researchers to present and discuss their scientific work.

PGIMS is the brainchild of the academic staff of Faculty of Medicine, University of Peradeniya, who introduced the concept of establishing a postgraduate medical institute in Peradeniya as early as 2012. I also wish to acknowledge and appreciate the valuable contributions made by Prof. M. D. Lamawansa, Prof. Chandrika Jayasinghe and Prof. R. M. Mudiyanse towards the development and early progress of the institute, including conceptualization, coordination, establishment of academic programmes, and guidance during its formative stages. My sincere appreciation is extended to Prof. Samath Dharmarathne, the first Director, whose dedication led to the establishment of the initial academic programmes, including the commencement of two Master's degree programmes.

Research and innovation remain fundamental pillars in advancing medical knowledge and improving the quality of healthcare. The establishment of this research congress reflects the commitment of PGIMS to promote scholarly inquiry, encourage evidence-based practice, and foster collaboration across diverse disciplines within the medical sciences. By bringing together researchers from different specialties, this forum provides a valuable opportunity to exchange ideas, share experiences, and inspire new directions in research.

This initiative is closely aligned with the vision of PGIMS to be an internationally recognized and accredited centre of excellence in postgraduate medical education in Sri Lanka, Asia, and the world, as well as our mission to develop and deliver high-quality postgraduate programmes that contribute to optimal healthcare for the people of Sri Lanka through sustainable research and innovation.

I wish to express my gratitude to the former Deans and members of the academic, administrative, financial and non-academic staff of the Faculty of Medicine, University of Peradeniya, for their support and contributions in shaping and strengthening the institute during the early stages of the institute.

I wish to commend the chairman, the members of the organizing committee and the staff of PGIMS for their dedication and hard work in organizing this inaugural congress. My sincere appreciation also goes to all presenters, reviewers, judges and participants whose contributions enrich this academic event and strengthen the research environment within our institute.

It has been my privilege to provide leadership for PGIMS Peradeniya and initiate annual research congress. I am confident that the Inaugural Research Congress 2026 of PGIMS will serve as an important forum for intellectual exchange and will inspire continued research excellence among our postgraduate community.

I wish the congress every success.

MESSAGE FROM THE CONGRESS CHAIR

Professor D. A. Gunawardane
Professor in Community Medicine
Dept. of Community Medicine
Faculty of Medicine
University of Peradeniya

It is with great pleasure and honour that I welcome you to the Inaugural Research Congress of the Postgraduate Institute of Medical Sciences (PGIMS), University of Peradeniya. As the Chairperson of this historic event, I am delighted to extend my warm greetings to all participants, including researchers, clinicians, academics, postgraduate trainees, and distinguished guests who have joined us for this important occasion.

The establishment of this inaugural congress marks a significant milestone in the academic journey of the PGIMS. As an institution dedicated to advancing postgraduate medical education, and research excellence, PGIMS recognizes the vital role that scientific inquiry and evidence-based practice play in strengthening healthcare systems and improving public health. Through this congress, we aim to create a dynamic platform for sharing innovative research, fostering interdisciplinary collaboration, and promoting scholarly dialogue among professionals from diverse fields of medicine and health sciences.

The theme of this year's congress reflects our commitment to addressing contemporary healthcare challenges through research, innovation, and academic leadership. In an era of rapid scientific advancement, evolving disease patterns, and increasing global health challenges, it is essential that we cultivate a strong research culture capable of generating knowledge that is both locally relevant and globally impactful.

This congress showcases the dedication, creativity, and scientific rigor of our researchers and trainees. I am confident that the presentations and discussions throughout this event will stimulate new ideas, encourage meaningful collaborations, and inspire future research endeavors that contribute to the advancement of healthcare and medical education in Sri Lanka and beyond.

I wish to express my sincere gratitude to all members of the organizing committee, reviewers, presenters, and supporters whose invaluable contributions made this congress possible. I also thank all participants for being part of this landmark event.

I wish you all a productive, enriching, and inspiring congress.

ORGANIZING COMMITTEE

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Professor Damitha Gunawardane

Chair of the Scientific Sessions

Senior Professor C.N.R.A.Alles

Secretary of the Congress

Dr.Gayathri Aruppola

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CONGRESS PROGRAMME

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INTRODUCTION TO THE ORATOR

Professor Indika Bandara Gawarammana
MBBS,MD, FRCPE, PhD
Senior Professor in Medicine
Department of Medicine
faculty of Medicine, University of Peradeniya
Consultant Physician, Teaching Hospital Peradeniya

Professor Indika Bandara Gawarammana (MBBS,MD,MRCP,FRCPE, PhD) a proud alumnus of St Thomas's College, Guruthalawa and Ananda College, Colombo, Professor Gawarammana began his medical journey at the University of Peradeniya where he obtained his MBBS in 1996 with Honours. He earned his MD at The University of Colombo in 2003. After his post MD training at teaching Hospital Peradeniya, he pursued specialist post-graduate training at the world-renowned Guy's and St Thomas's Hospitals, London in the United Kingdom. Upon his return to Sri Lanka, he ventured into the world of research in pesticide poisoning in Sri Lanka. He was then awarded the prestigious Australian Leadership Award to embark upon his PhD at the Australian National University. His PhD focussed on developing a new antidote for paraquat poisoning. This study is still the largest randomized controlled clinical trial in toxicology to date. Today, Professor Gawarammana is a Fellow of the Royal College of Physicians and a Senior Professor attached to the Department of Medicine, University of Peradeniya. He provides leadership to South Asian Clinical Toxicology Research Collaboration (SACTRC), which is an international research collaboration that has published over 600, peer reviewed publications and trained over 50 PhD and MPhil graduates. Work of his collaboration has brought about significant policy changes in pesticide use in Sri Lanka. These policy changes have saved well over 150,000 lives of farmers of Sri Lanka. He has been a prolific contributor to global medical literature. With an exceptional H-index of 37, his career in research spans 2 decades, including over 130 peer-reviewed papers to date, cited more than 5000 times by the global scientific community. Locally, he has consistently won presidential awards for scientific research since 2003. He has been a co applicant of multiple international research grants over the years. He is the co- director of a UK pounds six million grant by NIHR of UK. This grant conducts research in Sri Lanka, Bangladesh and India and has recruited 17 post graduate researchers globally. He also serves as a member of numerous national and international organizations and is a reviewer for many international journals.

Along with his collaborators, he pioneered the production of species- specific antivenom for Sri Lankan snake bite victims. The true weight of his career is measured in the large number of postgraduates he trained in Sri Lanka. Beyond his own research, Professor Gawarammana has been instrumental in laying the foundations for clinical research in Sri Lanka, ensuring future generations of physician-scientists are equipped to continue his vital legacy.

ORATION

The Jennings Paradigm: Cultivating a 21st-Century Research Culture in the "Cambridge of the Mahaweli"

Professor Indika Bandara Gawarammana
MBBS,MD, FRCPE, PhD

As this oration is dedicated to Sir Jennings, it becomes a vital duty to describe, at least superficially, his pioneering steps as a researcher. Perusal of his work revealed the true nature of this master, hence, I have dedicated a large part of this message to his legacy.

He was one of the leading lights in 20th-century constitutional and public law, who was well-known for his extensive work, which shaped academic debates and had a major impact on how governments, especially in Commonwealth countries, functioned. His groundbreaking research marked a bold departure from the rigid legal positivism dominant at the time, supporting a practical, real world approach, over theory alone. Instead of treating constitutions as fixed legal texts, Jennings used a realist perspective, influenced by American legal realism—focusing on how institutions actually operate through power dynamics, daily practices, and political realities rather than on abstract principles. This methodological shift, developed during his time at the London School of Economics alongside William Robson, made a vast body of influential works on core British public law themes like sovereignty, delegated legislation, administrative discretion, judicial review, public corporations, tribunals, and local government, laying foundational templates for modern scholarship.

At the core of Jennings's enduring research contributions lies his pioneering analysis of constitutional conventions—the unwritten rules essential to democratic governance. He devised a straightforward yet powerful three-part test to identify them: Are there clear precedents? Do the key actors believe they are bound by it? And does it serve a valid purpose? This framework transformed scholarly understanding by showing that conventions are more than mere habits. They are binding norms followed because they help ensure the smooth functioning of democracy, and this test continues to be widely referenced in academic studies and also in judicial decisions. His landmark book, The Law and the Constitution, masterfully underscored the indispensable role of these conventions in the British system, cementing his status as a cornerstone of constitutional research.

Jennings's impact extended far beyond Britain through his comparative research and practical constitutional advising in emerging nations across Asia and Africa, including Ceylon, Nepal, Malaya, Pakistan, and Sudan, which earned him the title 'The Oriental Jennings.These practical engagements were more than just side projects; they significantly informed and supported his theoretical work, providing empirical evidence for his study of the complex relationship between constitutionalism and democracy in postcolonial contexts, and helping to shape global constitutional scholarship.
All told, through his extensive writings—including enduring texts like Cabinet Government, Parliament, and The Approach to Self-Government—and his advisory roles, Jennings not only

advanced theoretical insights but also set lasting research agendas in constitutional law throughout profound global transformations.

My oration will describe how unique problems of a nation can be identified and solved through dedicated research and collaboration. It will also elaborate the difficulties of conducting research in Sri Lanka.

Once my uncle, Mr. Wimal Dissnayake, former registrar of University of Peradeniya referred to a quote by Sir Jennings: “If you recruit second grade lectures as academics, we will bread fourth grade graduates”. Though I have not been able to verify his claim, this quote holds its value. Academic posts at universities are certainly not attractive and therefore the best of the best are very reluctant to join university academia. The value of a university is not its students but its academics. May I make this an opportunity to plea the authorities to make academic posts very attractive so only the best of best can join the universities.

ANNUAL RESEARCH SYMPOSIUM OF THE PGIMS 2026
LIST OF ABSTRACTS – Oral Presentations

Session I

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LIST OF ABSTRACTS – Poster Presentations

Oral Presentations

OP03

Development and field implementation of a digital BMI tool for school medical inspection in Sri Lanka

Y.M.L. Kumara

Public Health Inspector, Regional Director of Health Services Office, Rathnapura.

Introduction:

The Child Health Development Record (CHDR) is the national standard for nutritional assessment of children under 19 years of age in Sri Lanka. During School Medical Inspections (SMI), Public Health Inspectors manually calculate body mass index (BMI), determine age, plot values on growth charts, and interpret the results. This process is time-consuming and prone to calculation, interpretation, and plotting errors. Currently available mobile applications are not aligned with national standards and fail to generate CHDR-required indicators.

Objective:

To develop and evaluate a cross-platform digital tool to improve the efficiency and accuracy of nutritional assessment during school medical inspections

Methods:

A field-based implementation study was conducted following the development of a Progressive Web Application (PWA) named "BMI Simulator" using Angular with offline capability and multiplatform compatibility. The system incorporates WHO growth reference z-score data tables for calculations and chart generation.
Users enter sex, date of birth, height, and weight. The system automatically generates age in years, months, and days, BMI, and nutritional status with standard cut-offs (obesity >+2SD, overweight >+1SD, wasting <-2SD, severe wasting <-3SD, moderate stunting <-2SD, and severe stunting <?3SD), plotted real-time values on CHDR-recommended growth charts, and estimated deviation from the normal range with the required weight/height adjustment. The application was distributed island-wide among Public Health Inspectors. No personal identifiers were collected; only anonymized system analytics were analyzed.

Results:

From 29 January 2026 within the initial implementation period, 20,000 BMI calculations were recorded across 495 user sessions with 261 first-time users. High engagement and repeated standalone PWA usage indicate field adoption. The tool reduced assessment time compared to manual age calculation, BMI computation, and chart plotting, improving workflow efficiency during SMI.

Conclusion:

The BMI simulator is a reliable, nationally aligned digital solution that enhances the efficiency and accuracy of school-based nutritional assessment and demonstrates strong feasibility for public health implementation in Sri Lanka.

Keywords: BMI, SMI, Nutritional assessment, Digital health

OP04

Relationship between physical activity level and insomnia among pregnant women at Yatinuwara MOH area, Kandy,Sri Lanka.

Karunathilaka H.M.A.N.[1]

[1] *Department of Nursing, Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka*

Introduction:

Pregnancy is one of the most significant and critical life events for women. During pregnancy, women experience many physiological and psychological changes. These changes lead to different somatic symptoms, including sleep disturbance and insomnia. Reduced physical activity can potentially worsen sleep problems.

Objective:

This study aimed to assess the relationship between physical activity level and insomnia among pregnant women.

Methods:

This study was conducted as a descriptive cross-sectional study. This quantitative study was conducted among 117 pregnant women at five antenatal clinics in Yatinuwara MOH area, Kandy, Sri Lanka, from June to September 2025. Data were collected using pre-tested, interviewer-administered questionnaires in three languages: Sinhala, English, and Tamil. The collected data were entered into a Microsoft Excel spreadsheet and exported to SPSS.

Results:

Most pregnant women (91.5%) were physically active according to ACOG guidelines, engaging in > 30 min of moderate-intensity activity per day. Poor sleep quality, as measured by the Pittsburgh Sleep Quality Index (PSQI > 5), was reported by 79.5% of participants, with a median sleep duration of six hours. Employment status and number of children were significantly associated with physical activity ($p < 0.001$), while previous delivery type also showed a significant association ($p < 0.001$). Insomnia was significantly associated with employment status alone ($p = 0.043$). No significant relationship was found between overall physical activity levels and sleep quality ($p = 0.437$).

Conclusion:

Although most participants in this study were physically active, a large proportion suffered from poor sleep quality. Employment status was a common factor significantly associated with both physical activity and insomnia. No significant association was found between physical activity and insomnia, suggesting that not all forms of physical activity equally benefit sleep.

Keywords: Physical Activity, Insomnia, Pregnancy

OP05

Health-related quality of life (HRQoL) and associated factors in patients with acute coronary syndrome (ACS) managed non-invasively: A cross-sectional in a tertiary care hospital

Thilaxsana S[1], Mayurathan G[2], Prasadini P[3]

[1]Department of Nursing, Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka
[2]National Hospital Kandy, Sri Lanka
[3]Department of Pharmacy, Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka

Introduction:

Although many patients diagnosed with acute coronary syndrome (ACS) are managed non-invasively, the assessment of health-related quality of life (HRQoL) among these patients is limited. HRQoL helps identify patient needs and prioritise supportive interventions to enhance it.

Objective:

To assess HRQoL in non-invasively managed patients with ACS within one year of diagnosis and to explore factors associated with HRQoL.

Methods:

A cross-sectional study was conducted among 135 non-invasively managed patients with ACS who were recruited from the cardiology clinic at the National Hospital Kandy. Data were collected using the Seattle Angina Questionnaire (SAQ). Patients aged 30–70 years with a confirmed ACS diagnosis between 3 and 12 months at the time of data collection and who were exclusively managed with medications without major procedural interventions were included. The SAQ was scored using standard methods. Data were analyzed using descriptive statistics and associations between SAQ scores and socio-demographic factors, clinical factors and duration since diagnosis (<6 months, >6 months) were assessed using One-way ANOVA or Kruskal-Wallis test. Significance was assessed at $\alpha = 0.05$.

Results:

Patients were, on average, 59(±9.43) years old and predominantly male (n=97, 72%). Scores for treatment satisfaction (62.8) and QoL (72.2) were lower compared to other domains (physical limitation: 77.9, angina stability: 82.9, and angina frequency: 88.7). Time since ACS diagnosis of >6 months compared to <6 months had significantly ($p<0.05$) better QoL (75.4, 65.7, respectively), angina stability (85.9, 76.7, respectively), and angina frequency (90.7, 84.8, respectively). No associations were found between age, sex, income, education level, and the Charlson comorbidity index and the different SAQ domains ($p>0.05$).

Conclusion:

Higher HRQoL scores among patients with an ACS diagnosis of >6 months are likely due to improved understanding of managing their condition and adapting to living with the condition. Greater support following an ACS diagnosis is recommended to help patients adapt.

Keywords: HRQoL, ACS, Non-invasive management

OP06

Retrospective audit of airway management practices in oral cancer surgery in Teaching Hospital Peradeniya

Dharmasena DGVSK[1], Ratnayake A[1], Kularatne WTD[1], Nanayakkara PSK[1], Medawela RMSHB[2]

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[2]Department of Oral and Maxillofacial Surgery, Faculty of Dental Sciences, University of Peradeniya, Sri Lanka

Introduction:

Intraoperative airway management in patients with oral cancer can be challenging because of various patient and tumour factors and anatomical distortions. However, there is a lack of global and local guidelines for these practices and local data describing management patterns and complications. This audit aimed to address these gaps.

Objective:

To analyse airway management practices used in oral cancer surgeries, identify patient- and surgical-specific factors influencing them, and describe perioperative airway-related complications.

Methods:

A retrospective observational audit was conducted using the medical records of all patients who underwent surgery for oral cancer in 2025. Consecutive sampling yielded a sample size of 58. Data were analysed using descriptive statistics, chi-square tests, t-tests, and ANOVA.

Results:

Most (81%) patients underwent reconstruction. Conventional nasotracheal intubation was the major intraoperative airway technique (79.3%), followed by fiberoptic nasal intubation (17.2%), orotracheal intubation, and elective tracheostomy was used least often (1.7%). Delayed extubation was the most common postoperative method (74.1%), with 17.2% requiring tracheostomy. Higher Mallampati grades (III-IV) and trismus showed significant associations with airway option selection (p=0.029, p=0.002).
Twenty-nine point three percent of patients experienced the following airway-related complications: infection (10.3%), difficult nasotracheal intubation (6.9%), haematoma (5.2%), and delayed wound healing (5.2%). ASA score, Mallampati score, trismus, intraoperative and postoperative airway method were not significantly associated with complications (p=0.973, p=0.398, p=0.379, p=0.738,0.130).

Conclusion:

Conventional laryngoscopic nasotracheal intubation remains the main airway option, with fiberoptic intubation used in patients with trismus and higher Mallampati scores. Infection was the most frequent airway-related complication. These findings highlight the need for standardised protocols from preoperative assessment to postoperative airway management to optimise outcomes in patients undergoing these procedures.

Keywords: Oral Cancer, Airway Management, Complications

OP07

Comprehensive analysis of physio-chemical properties of saliva in oral ulcer patients and healthy individuals in Sri Lanka

Senanayaka E[1,2], Jayasinghe E[1], Herath T[3], Rajapakse G[2], Jaysinghe R[1]

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[2]Department of Chemistry, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka
[3]Department of Basic Science, Faculty of Allied Health Sciences, University of Peradeniya, Peradeniya, Sri Lanka

Introduction:

Oral ulcers are the most common oral mucosal disease, affecting 20%–25% of the population, with a 50% recurrence rate. Human saliva, a critical biological fluid, maintains oral health and reflects local and systemic changes; thus, it is a valuable diagnostic tool for assessing ulcer progression and healing.

Objective:

To analyse and compare the physicochemical properties of saliva in patients with oral ulcers and healthy individuals in Sri Lanka and to identify potential salivary factors associated with oral ulcer formation and healing.

Methods:

The study included 63 patients in each of the control and ulcer groups, who were selected from the Diagnostic Clinic, University Dental Hospital, Peradeniya, Sri Lanka, with ethical approval. Participants were ?18 years. Salivary samples were collected in the morning time, every 30?s for 5?min and immediately analyzed. The parameters measured included pH, conductivity, flow rate, buffering capacity, and colour, using calibrated instruments and standardised procedures.

Results:

Analysis of saliva parameters revealed significant differences between patients and healthy individuals. Patients had lower salivary pH (6.55± 0.42 vs. 7.18± 0.26, $p<0.001$), higher conductivity (4.77± 1.39 vs. 2.65± 0.91 mS/cm, $p<0.001$), reduced flow rate (0.449± 0.158 vs. 0.579± 0.213 mL/min, $p=0.0001$), and lower buffer capacity (6.60± 0.43 pH vs. 7.09± 0.29 pH, $p<0.001$). Saliva colour was predominantly colourless in healthy individuals, and colour variations were observed among patients.

Conclusion:

In this study, patients with oral ulcers exhibited significantly altered saliva, including lower pH, reduced flow rate, decreased buffer capacity, and higher conductivity, reflecting disrupted oral homeostasis, weakened defense mechanisms, and potential microbiome changes that may contribute to ulcer formation and delayed healing. Saliva analysis therefore represents a valuable noninvasive biomarker for monitoring oral health and disease progression.

Keywords: Oral ulcer, Saliva, Physiochemical properties,

OP08

Clinicopathological Differences between Oral Squamous Cell Carcinoma with and without Oral Submucous Fibrosis: A Retrospective Study

Chandrasekara RMRU[1], Wickramasinghe WMSN[2], Raasiya MRF[1], Jayasooriya PR[2]

[1]Center for Research in Oral Cancer, Faculty of Dental Sciences, University of Peradeniya, Sri Lanka
[2]Department of Oral Pathology, Faculty of Dental Sciences, University of Peradeniya, Sri Lanka

Introduction:

Oral submucous fibrosis (OSMF) is a chronic potentially malignant disorder frequently associated with oral squamous cell carcinoma (OSCC). Whether OSCC arising from an OSMF background represents a distinct clinicopathological entity remains uncertain, despite reports that up to 48% of patients with oral cancer have histological evidence of an undiagnosed OSMF at diagnosis.

Objective:

To compare the clinicopathological characteristics of OSCC with and without coexisting OSMF

Methods:

A retrospective comparative study was conducted on 99 histopathologically confirmed OSCC excision biopsy specimens diagnosed at the Department of Oral Pathology, Faculty of Dental Sciences, University of Peradeniya, during 2023–2024. The variables analysed included age, sex, tumour site, degree of differentiation, depth and pattern of invasion, host immune response, tumour stage, and nodal status. Statistical analyses were performed using Kruskal–Wallis tests and chi-square or Fisher's exact tests ($P < 0.05$).

Results:

Twenty-five cases (25.25%) showed coexistence of OSMF, whereas 74 cases (74.75%) did not. OSMF-associated OSCC demonstrated a significantly higher frequency of well-differentiated tumors compared to non-OSMF OSCC (70.83% vs 45.76%; $X^2 = 4.305$, $P = 0.038$). Patients aged >60 years were significantly more common in the OSMF group (68% vs 44.59%; $P = 0.043$). Although not statistically significant, OSMF-associated OSCC showed consistent trends toward less aggressive clinicopathological features, including lower median depth of invasion (4.75 mm vs 5.00 mm), a higher frequency of less aggressive invasion patterns (Type I–II: 48% vs 34.25%), and lower nodal metastasis rates (12% vs 25.68%). Male predominance was lower in the OSMF group (68%) than in the non-OSMF group (82.43%).

Conclusion:

OSCC arising from an OSMF background presents at an older age and shows a significantly higher frequency of well-differentiated tumours, with additional trends toward less aggressive clinicopathological behaviour. These findings suggest that OSMF-associated OSCC may represent a biologically distinct subset. Larger cohort studies are required to confirm these findings.

Keywords: OSMF, OSCC, Clinicopathology, Differentiation

OP09

A statistical investigation of antibiotic resistance in Staphylococcus aureus

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Introduction:

Antibiotic resistance in Staphylococcus aureus is a serious global health problem. Genome-based prediction methods can improve the early detection of resistant strains and strengthen antimicrobial surveillance.

Objective:

To identify significant genomic features associated with antibiotic resistance and to develop reliable statistical and machine learning models for resistance prediction.

Methods:

Two whole-genome datasets were analysed. Phase 1 consisted of 200 assembled genomes downloaded from the NCBI database (100 resistant and 100 susceptible). Phase 2 consisted of 177 genomes assembled from raw sequencing reads obtained from NCBI, comprising 91 resistant and 86 susceptible isolates with laboratory-confirmed resistance information. Differences in mononucleotide, dinucleotide, and trinucleotide composition between resistant and susceptible groups were evaluated using hypothesis testing with bootstrap validation. A pan-genome analysis was performed to construct gene presence–absence matrices. Logistic regression was used as an interpretable statistical model, whereas support vector machines and decision trees were used as machine learning classifiers. Model performance was evaluated using accuracy, sensitivity, and specificity.

Results:

In Phase 1, the differences among mononucleotide, dinucleotide, and trinucleotide were small and inconsistent. In Phase 2, statistically significant differences were detected, indicating the importance of high-quality resistance annotation. Gene presence–absence analysis showed stronger and more consistent associations with resistance in both datasets. The gene tagH2 was strongly associated with resistance in Phase 1, whereas glpP emerged as a key predictive marker in Phase 2. Models based on gene-level features performed better than nucleotide-based features. All models achieved high predictive accuracy (approximately 97%) with strong sensitivity and specificity.

Conclusion:

The combination of statistical inference and machine learning provides a robust and accurate framework for predicting antibiotic resistance in S. aureus. Gene presence–absence patterns provide stronger predictive power than nucleotide composition measures and may support genomic surveillance and diagnostic developments.

Keywords: Antibiotic resistance, statistical modelling

OP10

Assessment of Correlation between Patients' Age and the Dosimetry of High-Dose Rate Intracavitary Brachytherapy for Cervical Cancer

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Introduction:

High-dose rate (HDR) intercavitary brachytherapy (ICBT) plays an important role in the multimodal treatment of cervical cancer. The clinical outcomes of this treatment technique are largely dependent on the precision of the dose distribution, which is influenced by several patient- and disease-related factors. This study aimed to identify the effect of patient age on the pelvic dose distribution in HDR ICBT.

Objective:

This study evaluated the relationship between pelvic dose distribution and patient age during the first and second treatment fractions of HDR ICBT for cervical cancer.

Methods:

Sixty-nine participants were recruited for this prospective study, all of whom were diagnosed with cervical cancer and underwent HDR ICBT at the National Cancer Institute, Maharagama, from September to December 2024. Dose-volume histograms were used to analyse the radiation doses delivered to Manchester Point A, the rectum, and the bladder across the two treatment fractions. The statistical relationship between patient age and dose distribution was examined using Spearman's correlation analysis.

Results:

The first treatment fraction indicated a weak negative correlation between patient age and rectal dose ($r = -0.305$, $p = 0.019$). However, patient age showed no significant correlation with rectal dose in the second fraction or with Point A or bladder doses in either treatment fraction.

Conclusion:

In HDR ICBT, patient age showed a weak influence on the rectal dose distribution during the first treatment fraction. Older patients received a reduced radiation dose to the rectum in the first fraction, highlighting the importance of individualised treatment planning based on patient-specific parameters to ensure an optimal dose distribution. Future studies with advanced imaging techniques and larger sample sizes are warranted to validate these findings.

Keywords: Cervical cancer, Brachytherapy, Dosimetry, Age

OP11

Comparative evaluation of mammographic breast density in 2D and 3D mammography using machine learning

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Introduction:

3D mammography has been introduced as an alternative to 2D mammography to improve tissue visualisation. In the context of automated analysis, differences in breast density assessment between 2D and 3D mammography remain an area of active investigation.

Objective:

This study aimed to comparatively evaluate mammographic breast density in 2D and 3D mammographic images using machine learning techniques.

Methods:

Using an algorithm developed on the KNIME Analytics Platform, 2D and 3D mammographic images were analysed. For each imaging modality, image preprocessing and feature extraction steps were performed separately. Machine learning models were trained to assess breast density, and specific performance trends were evaluated.

Results:

The developed KNIME workflow enabled automated breast density assessment from 2D and 3D mammographic images of 300 subjects. Quantitative analysis showed a higher mean glandular tissue proportion in 3D mammography (43.1 ± 11.2%) than in 2D mammography (38.6 ± 10.5%, $p < 0.001$). The automated BI-RADS density classification method achieved an accuracy of 88.0% for 2D images and 92.3% for 3D images, with substantial agreement for 2D (Cohen's = 0.80) and near-perfect agreement for 3D mammography (? = 0.86). A positive correlation was demonstrated between 2D and 3D density measurements ($r = 0.83$, $p < 0.001$), with 3D mammography reporting higher density values, particularly in the BI-RADS C and D categories.

Conclusion:

In this study, a machine learning-based framework enabled a comparative assessment of mammographic breast density in 2D and 3D images, modality-related variations, and the importance of image modality.

Keywords: Breast Density, 2D, 3D , ML, BI-RADS

OP12

Biochemical Parameters in Saliva of Oral Cancer Patients Attending to Dental Teaching Hospital, Peradeniya, Sri Lanka

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Introduction:

Oral squamous cell carcinoma (OSCC) is the most common malignancy in men in Sri Lanka. Biochemical changes in saliva may reflect tumour-related, inflammatory, and glandular dysfunction in patients with OSCC and could provide insights into molecular derangements.

Objective:

This study aimed to investigate the relationship between salivary pH, total protein content, sociodemographic variations, and risk factors in patients with OSCC.

Methods:

Following ethical approval and informed written consent, patients attending the Dental Teaching Hospital, Peradeniya, were recruited for this study. Unstimulated whole saliva samples were collected between 8:00 a.m. and 12:00 noon, and data related to sociodemographic factors and risk habits were obtained using a questionnaire. Saliva samples were immediately processed, and pH was measured using a pH meter. Centrifugation was then performed at 2600 rpm for 15 min at 4 °C, and the supernatants were stored at -70 °C until analysis. Total protein content was quantified using the Biuret method, and absorbance was measured at 540 nm using a spectrophotometre. All data were entered and analysed using Jamovi software.

Results:

A total of 21 patients with OSCC were recruited for this study. The mean salivary pH was 7.17 ± 0.595 (IQR=0.790). The mean total protein concentration was 2.12 ± 0.363 mg/mL. A negative correlation, but not a statistically significant association, was observed between salivary pH and total protein (Spearman's correlation, p=0.991). Salivary pH and tobacco use (p=0.412), alcohol consumption(p=0.517), diet(p=.468), or oral hygiene practices(p=.468), between total protein content and tobacco use (p=0.339), alcohol consumption(p=0.964), diet(p=0.438), or oral hygiene practices(p=0.549), revealed statistically non-significant associations. The salivary pH level in patients with OSCC was within the neutral range.

Conclusion:

This pilot study revealed a negative association between salivary pH and total protein content. Risk factors and demographic characteristics showed no significant association with biochemical parameters. Further studies with larger samples are warranted to validate these findings.

Keywords: Oral cancer, saliva, Biochemical parameters, saliv

OP13

Myositis ossificans as a complication of native fracture treatment : a comparative pilot study

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Introduction:

In South Asian countries, native medical practices, including Ayurveda and indigenous medical techniques, are commonly used for fracture management. Some patients who have undergone primary native treatment present with hardening of the soft tissues at the fracture site. Our previous study demonstrated a tendency for the development of myositis ossificans (MO) at fracture sites in these patients, which is likely to be the cause of this presentation.

Objective:

This study aimed to compare histopathological changes at fracture sites among patients managed with native treatment, those managed with non-native treatment, and those managed with no treatment.

Methods:

We analysed 18 biopsies received by the Department of Pathology, Faculty of Medicine, Peradeniya, over 3 years since 2023 from adult patients who presented later for corrective surgeries following fractures. Among them, 13 had native treatment only, 3 had Western treatment, and 2 had no treatment. Histological slides were independently reviewed by two pathologists, and the observed changes were compared with the standard pathological features of fracture healing.

Results:

Of the 13 patients who had received native treatment, 9 (69.23%) demonstrated histological features of MO.. None from Western treatment or no treatment showed MO. All biopsies showed varying degrees of granulation tissue formation and fibrosis of soft tissues corresponding to the healing process. A statistically significant association suggesting a link between native treatment and the presence of MO was identified ($p = 0.029$).

Conclusion:

Myositis ossificans is a recognised complication of fracture healing due to aberrant healing mechanisms, which was observed exclusively among patients who received native treatment in our study, suggesting a biologically plausible association. Repeated soft tissue injury, local ischaemia, and prolonged cytokine-mediated local inflammation may have contributed. This study should be continued as a larger prospective study with a larger sample size to allow for a more robust comparative analysis.

Keywords: Myositis ossificans , Native treatment , Fracture

OP14

Psychological well-being and quality of life among patients with chronic diabetic wounds attending the surgical clinic at National Hospital Kandy, Sri Lanka

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Introduction:

Diabetic foot ulcers are serious complications of diabetes mellitus. Chronic diabetic wounds affect the quality of life and psychological well-being of patients.

Objective:

This study aimed to assess the psychological well-being and quality of life of patients with chronic diabetic wounds and identify associated factors.

Methods:

This cross-sectional descriptive quantitative study was conducted at the surgical clinic of the National Hospital Kandy, Sri Lanka, with 203 patients with chronic diabetic wounds completing a pretested interviewer-administered questionnaire. Depression and anxiety were measured using the Hospital Anxiety and Depression Scale, and quality of life was measured using the Cardiff Wound Impact Schedule. The data were analysed using the Statistical Package for the Social Sciences, version 27, applying descriptive statistics, Pearson's chi-square test, Fisher's exact test, and linear-by-linear association tests.

Results:

The sample consisted of 55.2% males and 44.8% females, with a mean age of 61.09 ± 11.75 years. Regarding the level of psychological well-being, 34.0% of participants reported normal anxiety levels, borderline in 20.2%, moderate in 32.5%, and severe in 13.3%. Depression levels were normal in 40.4% of participants, borderline in 37.9%, moderate in 19.2%, and severe in 2.5%.The factors associated with depression were age, sex, educational level, hypertension, and a combination of both dyslipidaemia and hypertension. The factors associated with anxiety were age, sex, educational level, wound duration, and the presence of comorbid diseases, such as hypertension and chronic heart disease. Among participants 51.2% of them showed poor quality of life and 48.8% of participants showed good level of quality of life. The factors associated with total quality of life were sex, educational level, chronic heart disease, and a combination of hypertension, dyslipidaemia, and chronic heart disease.

Conclusion:

Most participants experienced significant psychological distress and poor quality of life, which were associated with demographic factors, wound duration, education level, and comorbidities. Therefore, these clinics should add mental health screening methods and multidisciplinary care support.

Keywords: Anxiety, Depression, Quality of Life, Chronic diab

OP15

Correlation between self-perception of aging and functional mobility among older adults in elderly homes in Kandy district, Sri Lanka

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Introduction:

Self-perception of aging (SPA) refers to how older adults view their own aging processes. It is associated with physical health, mobility, and emotional well-being. Of these factors, functional mobility often declines with age. The correlation between these two factors has not been adequately examined among institutionalised older adults in Sri Lanka.

Objective:

This study aimed to determine the correlation between SPA and functional mobility in institutionalised older adults in the Kandy District, Sri Lanka.

Methods:

This descriptive cross-sectional study was conducted among 226 institutionalized older adults aged ?Sixty years in Kandy district registered under the department of social welfare, probation, and childcare services. SPA was measured using the Attitudes to Aging Questionnaire (AAQ-24), while functional mobility was assessed using the Timed Up and Go (TUG) test. Data were presented using descriptive statistics, and correlations were assessed using Spearman's correlation coefficient.

Results:

The mean age of the sample was 74.82 ± 7.86 years. The mean SPA score was 32.03 ± 16.52, with domain scores of 27.26 ± 6.88 for psychological growth, 26.15 ± 6.99 for physical change, and 21.38 ± 6.88 for psychosocial loss. The mean TUG time of participants was 17.50 ± 12.18 seconds. A moderate negative correlation (p= 0.427) was found between SPA scores and measures of functional mobility.

Conclusion:

The study showed a moderate negative correlation between SPA and functional mobility among institutionalized older adults. These findings suggest that positive attitudes toward aging may have a positive influence on functional mobility. Further, it may assist healthcare professionals in enhancing management strategies for healthy aging.

Keywords: Self-perception of aging, mobility, elderly homes

OP16

Prevalence of selected risk factors for adverse fetal outcomes and their associations in Teaching Hospital Batticaloa.

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Introduction:

Adverse foetal outcomes are a major public health concern in developing countries worldwide, with numerous risk factors contributing to neonatal morbidity and mortality. Identifying these risk factors and their relationship with neonatal outcomes is essential for enhancing neonatal health through targeted interventions.

Objective:

To assess the prevalence of selected risk factors for adverse fetal outcomes and evaluate their associations among postpartum mothers.

Methods:

A descriptive cross-sectional study was conducted among 260 postpartum mothers admitted to the postnatal wards of Teaching Hospital Batticaloa (THB) (August-September 2023). A validated, structured interviewer-administered questionnaire was used to collect data, and participants were selected using systematic sampling. Descriptive statistics determined the prevalence of risk factors and foetal outcomes, whereas the chi-square test assessed the associations between risk factors and foetal outcomes using SPSS version 25.0.

Results:

Maternal age between 25-30 years (29.6%), pregnancy-induced hypertension (PIH) (10.8%), gestational diabetes mellitus (GDM) (16.2%), anemia (11.9%), underweight (15.4%), overweight (24.2%), and poor weight gain (52.3%) were identified as most prevalent risk factors. Late-term delivery (16.9%), neonatal intensive care unit (NICU) admission (35.0%), low birth weight (5.8%), neonatal jaundice (6.2%), respiratory distress (5.4%), and intrauterine growth restriction (IUGR; 3.1%) were reported as the most prevalent adverse foetal outcomes. PIH was significantly associated with gestational age ($p=0.016$) and birth weight ($p=0.006$). Maternal age was significantly associated with gestational age ($p=0.001$), birth weight ($p=0.011$), and NICU admission ($p=0.024$). GDM showed a significant association with gestational age ($p=0.034$), neonatal hypoglycemia ($p<0.001$), NICU admission ($p=0.010$), and birth weight ($p=0.004$).

Conclusion:

This study revealed the significant burden of adverse foetal outcomes associated with risk factors at the time of birth. Significantly, the impact of PIH and GDM on fetal well-being highlights the importance of pre-pregnancy counseling, early identification, and management of risk factors to improve neonatal outcomes.

Keywords: Risk factors, adverse fetal outcomes

OP17

Influence of social media exposure on smokeless tobacco use among Sri Lankan youth

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Introduction:
Smokeless tobacco (SLT) use remains a significant public health concern among youth, particularly in South Asian countries. The rapid expansion of social media platforms has increased exposure to tobacco related content, which may influence attitudes and behaviors toward SLT use.

Objective:
To assess the association between exposure to tobacco related content on social media and smokeless tobacco usage among Sri Lankan youth.

Methods:
A cross sectional web-based survey was conducted among Sri Lankan youth aged 18 - 24 years using a convenience sampling method. A total of 300 consented participants were included in the final analysis. The questionnaire collected data on sociodemographic characteristics, social media usage, exposure to tobacco related content, SLT use patterns, knowledge, and attitudes. Descriptive statistics were used to summarize the data. Bivariate associations were assessed using chi-square tests, and variables with significant associations were included in the logistic regression analysis.

Results:
Of the 300 participants, 10.7% (n=32) reported current SLT use. WhatsApp (90.3%), YouTube (82.9%), Instagram (58.9%), Facebook (57.2%), and TikTok (40.5%) were the most frequently used social media platforms. About half of the respondents (50.4%) reported exposure to SLT related advertisements. Bivariate analysis showed that SLT use was significantly associated with gender, employment status, time spent on social media, and use of certain platforms. In the multivariate logistic regression, being male (AOR=10.20, 95% CI 2.30–45.16; p=0.002) and spending more than 4 hours per day on social media (AOR=3.05, 95% CI 1.35–6.86; p=0.007) were independently associated with SLT use.

Conclusion:
SLT use among Sri Lankan youth was associated with gender (male) and higher daily social media exposure. These findings suggest that social media may influence tobacco related behaviors and emphasize the need for targeted public health interventions, including youth focused awareness programs and digital tobacco control strategies.

Keywords: Smokeless tobacco; Social media; Youth; Sri Lanka

OP19

Impact of Field-in-Field (FIF) Radiotherapy on Ipsilateral Lung Dose in Whole Breast and Post-Mastectomy Radiotherapy

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Introduction:

The field-in-field (FF) technique has become the preferred method for delivering tangential whole breast radiation by reducing cold and hot areas in the treatment area, improving target coverage, and lowering radiation dose exposure to healthy tissues.

Objective:

To assess the impact of FIF radiotherapy technique on ipsilateral lung dose variation in Whole Breast radiotherapy (WBRT) and Post Mastectomy Radiotherapy (PMRT).

Methods:

All female breast cancer patients who had registered in the Varian Eclipse Treatment Planning System (Version 15.6.03) for FIF technique included breast cancer adjuvant radiotherapy treatment between January 2023 and May 2024 at the Department of Radiotherapy and Oncology, NCIM. Treatment strategy details, including the radiation field arrangement and V5%, V10%, and mean lung doses, were extracted from each radiotherapy plan. Descriptive statistics were performed to analyse the mean and standard deviation of the lung dose parameters, and an independent sample t-test and Leven's test were used as inferential statistics with a significance set to 0.05.

Results:

For V20 (%), PMRT: Levene's F = 0.026, p = 0.872; t = 0.309, p = 0.758, WBRT: Levene's F = 1.114, p = 0.295; t = 0.379, p = 0.706. For V5 (%), PMRT: Levene's F = 0.159, p = 0.691; t = 0.160, p = 0.873, WBRT: Levene's F = 0.082, p = 0.776; t = 1.448, p = 0.152. For Mean (Gy), PMRT: Levene's F = 0.679, p = 0.413; t = -0.472, p = 0.639, WBRT: Levene's F = 0.012, p = 0.914; t = 0.008, p = 0.994. These results indicate FF presence does not significantly affect lung doses.

Conclusion:

The presence of an FF does not significantly affect lung doses in PMRT or WBRT, indicating minimal clinical impact on lung exposure.
Key Words: Field in Field Technique, Breast Radiotherapy

Keywords: Field in Field Technique, Breast Radiotherapy

OP20

Influence of Patient-Related Factors on the Dosimetry of High Dose Rate Vaginal Cuff Brachytherapy for Endometrial Cancer

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Introduction:

High-dose rate (HDR) vaginal cuff brachytherapy (VCB) is a necessary adjuvant therapy for endometrial cancer following hysterectomy and requires the best possible coverage of the target dose with minimal radiation to the bladder and rectum.

Objective:

The purpose of this study was to assess the impact of patient-related factors: age, body mass index (BMI), number of vaginal deliveries, and bladder-rectum minimal distance (OAR gap) on radiation dose distribution to the bladder, rectum, and vaginal cuff

Methods:

This was a prospective observational study involving 61 endometrial cancer patients who were undergoing HDR VCB at the National Cancer Institute, Maharagama. All treatment plans were generated using 2D image-based planning. Age, body mass index (BMI), and the number of vaginal deliveries were documented; the OAR gap was determined by lateral radiographs; and the DVHs were processed to derive bladder, rectal, and vaginal cuff doses. Statistical evaluations were performed to assess the associations between patient factors and dose distribution.

Results:

The coverage of tumors was consistent. Age had a weak significant positive correlation with the rectal dose ($r = 0.255$, $p = 0.047$). A borderline effect on rectal dose ($r = 0.241$, $p = 0.061$) and a significant positive correlation with OAR gap ($r = 0.280$, $p = 0.029$) were observed for BMI. A borderline positive correlation was observed between the OAR gap and bladder dose ($r = 0.230$, $p = 0.074$). There was no significant effect of vaginal deliveries.

Conclusion:

Patient-related variables showed a weak influence on dose allocation in the instance of HDR VCB; age and BMI impacted slightly on anatomical and dosimetric variations, which depict the significance of individualized treatment planning. Volumetric imaging based on larger studies would help elucidate these effects.

Keywords: Endometrial cancer, Brachytherapy, patient factors

OP21

Psychological Bullying and Its Associated Factors among First Year Undergraduates of University of Peradeniya

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Introduction:

The phenomenon of psychological bullying among first-year students at the University of Peradeniya remains a pressing issue. These students often encounter different types of bullying experiences, prompting to conduct a study to determine the extent of psychological bullying and its associated factors.

Objective:

This study aimed to investigate the factors associated with psychological bullying among first-year undergraduate students at the University of Peradeniya. Specifically, it seeks to estimate the prevalence of victimization and analyze the underlying factors linked

Methods:

The study examined first-year students from the Faculties of Medicine, Dental Science and Allied Health Sciences through a descriptive cross-sectional approach with a total participant number of 293 subjects using an e-questionnaire through Google Forms to obtain data from 30 statements that covered physical, verbal, emotional, and cyberbullying. The questionnaire was completed by 277 students (91.5%) of the participant base. Analysis was conducted using a chi-square test, which Jamovi software executed.

Results:

The research investigation revealed that bullying affected 6.85% of the students, with verbal attacks and emotional mistreatment proving more prevalent than physical attacks and cyberbullying events. Most bullying victims were female medical undergraduates aged < 22 years. A significant statistical relationship was identified between students' bullying experiences and residing in boarding facilities, as well as their mental health status. Bullying resulted in multiple negative effects, especially academic deterioration, alongside anxiety development, frequent feelings of fear, and suicidal thoughts; however, help-seeking behaviour emerged in only 21.05% of those who were victims.

Conclusion:

The University of Peradeniya witnesses widespread psychological bullying of first-year students, which results in negative academic effects and mental health deterioration. This study underscores the urgent need for additional research to recognise the reasons behind limited help-seeking actions and their negative consequences.

Keywords: Psychological bullying, University students, Victi

OP22

Biochemical and hydration profiles relevant to performance and recovery in under-18 national-level school rugby players, Central Province, Sri Lanka

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Introduction:

Rugby is a high-intensity collision sport that places substantial physiological and nutritional demands on athletes. Subclinical biochemical and hydration abnormalities during this period may adversely affect performance, recovery, and long-term health. Data describing these parameters among school rugby players in South Asia, particularly at the school level, are limited.

Objective:

To describe biochemical and hydration profiles and prevalence of abnormalities relevant to performance and recovery among under-18 national-level school rugby players in Central Province, Sri Lanka.

Methods:

A descriptive cross-sectional study was conducted among 63 under-18 apparently healthy, male school rugby players competing at national level in Central Province, Sri Lanka. Laboratory assessments included random blood glucose (RBS), haemoglobin, red cell indices, platelet count, total leukocyte count, serum creatinine, serum calcium, magnesium, C-reactive protein (CRP), and urine specific gravity. Normal reference ranges provided by the reporting laboratory were used to classify values as low, normal, or high.

Results:

Low haemoglobin (<13 g/dL) was identified in four players (6.3%). Abnormal red cell indices suggestive of iron-restricted erythropoiesis (low mean corpuscular volume and/or mean corpuscular haemoglobin with normal haemoglobin) were present in 31 players (49.2%). Elevated CRP (?8 mg/L) was observed in three players (4.8%). Based on urine specific gravity, 49 players (77.8%) demonstrated inadequate hydration. None of the players had a low RBS (<65 mg/dL). Elevated serum creatinine levels were identified in one player (1.6%). Serum calcium levels were within the normal range in all assessed players, while magnesium deficiency (<1.7 mg/dL) was identified in one player (1.6%).

Conclusion:

A substantial proportion of under-18 national-level school rugby players from Central Province exhibited subclinical abnormalities in red cell indices and hydration status despite participation in games. These findings highlight the importance of routine biochemical monitoring and targeted nutrition and hydration strategies to support performance, recovery, and long-term athlete health, while indicating the need for further evaluation of underlying contributory factors.

Keywords: Rugby, adolescents, biomarkers, sports nutrition

OP23

The prevalence of malnutrition and its risk factors in chronic hemodialysis patients

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Introduction:

Malnutrition is a multifactorial health burden among chronic hemodialysis patients, associated with increased morbidity, mortality, and diminished quality of life. Although extensively studied globally, evidence from the Sri Lankan context remains limited.

Objective:

To determine the prevalence of malnutrition and identify its risk factors among chronic hemodialysis patients attending the National Hospital Kandy.

Methods:

A descriptive cross-sectional study was conducted at the National Hospital Kandy involving 235 chronic hemodialysis patients recruited through convenience sampling. Data were collected using a pretested interviewer-administered questionnaire and the validated Dialysis Malnutrition Score (DMS). Data analysis was performed using SPSS version 27, employing descriptive statistics and chi-square or modified Fisher's exact tests.

Results:

The sample comprised 68.1% males, with 41.3% aged >60 years. Malnutrition affected 96.2% of the participants; 80.9% had mild to moderate malnutrition, and 15.3% had severe malnutrition. Significant risk factors included older age, unemployment/retirement, taste alterations, dysphagia, catheter-related inflammation, diabetes mellitus, muscle cramps, special renal diet consumption, calcium/vitamin D supplements, and DMS components ($p<0.05$).

Conclusion:

This study demonstrates a high prevalence of malnutrition among hemodialysis patients, highlighting the urgent need for routine DMS-based nutritional assessment, particularly for elderly and unemployed/retired patients, to guide targeted interventions.

Keywords: Malnutrition, Hemodialysis, Risk factors, DMS

OP24

Impact of Duration & Type of Renal Replacement Therapy on severity of Pain Among Chronic Kidney Disease Patients

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Introduction:

Chronic Kidney Disease (CKD) is a progressive global health issue characterized by a gradual decline in kidney function, and it is increasingly affecting people in low- and middle-income countries. Patients with advanced stages of CKD often have to undergo Renal Replacement Therapy (RRT), and pain and discomfort are present in majority of patients, which affect their quality of life. This study aimed to assess the prevalence, nature, and determinants of pain and discomfort in adult patients with CKD receiving haemodialysis or peritoneal dialysis at two hospitals in the Kandy district of Sri Lanka.

Objective:

This study aimed to assess the prevalence of pain and discomfort among patients with chronic kidney disease receiving RRT at two centres in the Kandy district.

Methods:

This was a descriptive, cross-sectional, quantitative study. The study was conducted at the Teaching Hospital Peradeniya and the National Hospital Kandy among 217 patients. An interviewer-administered questionnaire was used, and the severity of pain was assessed using a numerical rating scale of 0-10. The data were analysed using statistical methods, including chi-square tests, t-tests, and regression.

Results:

Only 33% of the patients had no pain, while 41.93% had pain scores of four or less out of 10; 64.19% of haemodialysed patients and 72.45% of patients who underwent peritoneal dialysis reported pain. The results of this study revealed that approximately just over half (58.07%) of the participants experienced moderate and severe pain, and the type and duration of RRT were found to be the most significant factors associated with pain. This was more frequent in patients aged 30–44 years.

Conclusion:

Pain is a significant symptom among patients with CKD undergoing RRT, mainly affected by treatment factors such as the duration and type of RRT. It is important to assess pain and manage it appropriately to reduce the symptom burden and improve the quality of life.

Keywords: CKD,RRT,Pain,Discomfort, Prevalence

OP25

A prospective audit on heavy bupivacaine dosing trends with or without addition of fentanyl and block duration in surgeries under spinal anaesthesia

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Introduction:

Spinal anaesthesia using 0.5% heavy bupivacaine (0.5%HB), with or without adjuvants, is standard for lower torso surgeries. However, block duration varies, and dosing practices differ significantly among anesthetists despite the need for tailored anaesthesia per surgery1.

Objective:

To audit the motor and sensory block durations of SA in patients who underwent surgery under spinal block and to check the association of block duration with dose of 0.5% HB and with the use of intrathecal fentanyl as an additive.

Methods:

A prospective observational audit was conducted at the post operative wards of Teaching Hospital Peradeniya. Adult patients with ASA grade I or II who underwent elective or emergency surgery performed under SA using 0.5% HB with or without fentanyl were recruited for the study.

Results:

Out of the 39 cases included , the dose range of 0.5%HB was 20- 25mg. Mean Motor and sensory wear-off Times were 330.6 minutes and 356.7 minutes respectively. There was no statistically significant correlation between time taken for motor recovery versus dose of 0.5% HB used (pearson 0.334, spearman 0.52) . 0.5%HB Dose vs. sensory wear-off time showed moderately positive correlation (Pearson 0.035,Spearman 0.016). No statistical difference in motor and sensory recovery times between patients receiving fentanyl and not receiving fentanyl. (p-value: 0.323)

Conclusion:

Block durations achieved with SA using 0.5%HB showed significant variation. Our study results also demonstrated this. Intrathecal fentanyl is commonly used as an additive in SA for the bupivacaine sparing effect3. Time taken for recovery of motor function following SA showed no significant relationship with dose of 0.5%HB whereas , sensory wear-off time showed positive correlation. The use of intrathecal fentanyl as an additive to spinal anaesthesia did not show any statistically significant advantage in the duration of anaesthesia. However , further research is needed to assess recovery outcomes of SA .

Keywords: Spinal anaesthesia, sensory ,motor

OP26

Growth and distribution of research output on communicable and noncommunicable diseases in Sri Lanka (2017–2024)

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Introduction:

A systematic assessment of medical science research is essential for addressing national health challenges. Research output on communicable diseases (CDs) and noncommunicable diseases (NCDs) in Sri Lanka from 2017 to 2024 was analyzed in this study.

Objective:

Publications were analyzed to evaluate temporal trends, disciplinary distribution, alignment with the national health burden, institutional productivity, journal dispersion, and citation impact.

Methods:

A bibliometric descriptive analysis was conducted using national and international databases for studies published between 1 January 2017 and 31 December 2024. A PRISMA-2020 guided bibliometric search was done in PubMed/MEDLINE, ScienceDirect, and Sri Lankan Journal Online using MeSH-terms, keywords, and manual screening. Descriptive analyses were performed using R (version 4.2.0) and Microsoft Excel. A two-proportion Z-test was done to compare publication productivity between academic institutions and hospitals, and journal dispersion was assessed using Bradford's Law.

Results:

Research output has steadily increased annually, peaking in 2021. Case-reports and original research articles dominated the literature (46.9% and 39.4%, respectively), whereas systematic-reviews and meta-analyses remained scarce. Most publications fell within the field of medicine (61.6%), with a majority focused on NCDs (70.9%). Academic institutions made the greatest contribution (50.9%), whereas local journals were the major research dissemination outlets. Bradford analysis revealed three journal zones with a clear gradient in zone-wise citation performance. Zone-1 journals recorded very low visibility (mean citation 1.6; 65.7% uncited), Zone-2 journals presented a moderate impact (mean 8.1; 55.3% uncited), and globally indexed Zone-3 journals presented the highest visibility (mean 21.4; median 8; only 16.4% uncited).

Conclusion:

Sri Lanka's research output on CDs and NCDs has increased steadily but remains misaligned with national health priorities, with overrepresentation of cancer and metabolic disorders and underrepresentation of major mortality drivers and endemic infections, such as leptospirosis and rickettsiosis. Limited publication in indexed journals further reduces international visibility, highlighting the need for improved funding and collaborative research networks.

Keywords: Communicable diseases, Noncommunicable diseases

OP27

Comparison of Intraoperative Analgesic Techniques and Their Impact on Postoperative Analgesia Requirements Following Major Open Abdominal Surgery

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Introduction:

Background: Postoperative pain remains a major challenge after major open abdominal surgery, negatively affecting recovery, increasing morbidity, and prolonging hospital stay. Opioids are widely used intraoperatively but may cause adverse effects, such as nausea and vomiting. Regional anesthesia and multimodal analgesic techniques are effective alternatives; however, comparative evidence from Sri Lanka is limited.

Objective:

To compare the effectiveness of different intraoperative analgesic techniques on postoperative analgesic requirements among adult patients undergoing major open abdominal surgery

Methods:

A prospective observational cohort study was conducted in two tertiary care hospitals in the Kandy District, Sri Lanka. A total of 163 adult patients undergoing elective major open abdominal surgery were included. Participants were grouped based on the intraoperative analgesic technique used: opioids only, regional blocks, and multimodal analgesia. Postoperative pain was assessed at 6, 12, 24, and 48 hours. Secondary outcomes included postoperative opioid requirement, time to first analgesia request, and analgesia-related adverse effects. Data were analyzed using descriptive statistics and the Kruskal–Wallis test.

Results:

The study included 46.6% males and 53.4% females, with a mean age of 59.75 years. Pain scores decreased over time in all groups; however, patients receiving regional blocks reported consistently lower pain scores, followed by the multimodal group, while the opioid-only group had the highest scores at all time points. Time to first analgesia request was longest in the regional block group (2.46 ± 1.13 hours). Postoperative opioid consumption was significantly lower in both regional and multimodal groups compared to opioids alone. Opioid-related adverse effects, including nausea, vomiting, and respiratory depression, were more frequent in the opioid-only group.

Conclusion:

Regional blocks and multimodal analgesia were more effective than opioids alone in reducing postoperative pain and opioid requirements after major open abdominal surgery. Regional techniques provided the greatest benefit with fewer adverse effects, supporting their integration into routine perioperative pain management in tertiary care settings.

Keywords: postoperative,intraoperative,regional,opioid,pain

OP28

Anthropometric Indices as Predictors of Acute Coronary Syndrome among Sri Lankan Adults: A Hospital-Based Study at Teaching Hospital, Peradeniya

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Introduction:

Anthropometric indices are widely used to assess cardiovascular risk, but their effectiveness in predicting Acute Coronary Syndrome (ACS) among Sri Lankan adults remains unclear. Novel measures, such as A Body Shape Index (ABSI) and Body Roundness Index (BRI), may improve risk prediction; however, local data are limited.

Objective:

To assess the association between anthropometric indices and ACS among patients at the Teaching Hospital, Peradeniya, and to identify the indices with the highest predictive value for ACS risk.

Methods:

A hospital-based cross-sectional study at Teaching Hospital, Peradeniya, included 370 adults (185 ACS patients and 185 controls) aged 25-85 years, from 2024-2025. Participants with conditions affecting body composition, pregnancy, inflammatory diseases, or physical deformities were excluded. Sociodemographic, clinical, and anthropometric data were collected. Associations were assessed using the chi-square and Mann–Whitney U tests. Logistic regression evaluated ACS risk, while receiver operating characteristic (ROC) analysis assessed the predictive performance of anthropometric indices.

Results:

ACS patients (59.5% male) were older than controls (61.8 ± 11.8 vs. 53.8 ± 14.6 years) and had higher central obesity and body-shape indices: waist circumference 84.0 ± 10.6 vs. 82.3 ± 9.9 cm, WHR 0.897 ± 0.059 vs. 0.865 ± 0.092, WHtR 0.526 ± 0.071 vs. 0.521 ± 0.078, and ABSI 0.085 ± 0.009 vs. 0.081 ± 0.007, while BMI was similar. BMI correlated strongly with WHtR ($r = 0.745$) and BRI ($r = 0.700$). Hypertension (OR 6.46) and alcohol use (OR 11.64) were strongly associated with ACS. WHR (OR 2.32), WHtR (OR 2.99), ABSI (OR 3.42), and BRI (OR 0.16) predicted ACS, whereas BMI did not. ABSI showed the highest predictive value for ACS (AUC 0.683, 95% CI 0.628-0.738, $p < 0.001$).

Conclusion:

ACS risk was predicted by central obesity and body-shape indices, with ABSI showing the strongest predictive value as a practical tool to identify high-risk Sri Lankan adults.

Keywords: Acute Coronary Syndrome, Anthropometric Indices

OP29

An image-based tool to detect inter-fraction applicator variations and their dosimetric impact in HDR Co60 brachytherapy for cervical cancer

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Introduction:

In low- and middle-income countries, cervical cancer brachytherapy often relies on two-dimensional planning using orthogonal X-rays and point-dose normalization. Inter-fractional applicator displacement is a major but under-studied concern that can modify dose distributions to targets and organs at risk and may remain undetected with standard 2D quality assurance.

Objective:

To develop an image-based tool to quantify inter-fractional applicator displacement and to assess its dosimetric and radiobiological impact in 2D planned HDR Co60 cervical brachytherapy.

Methods:

A mixed retrospective–prospective study included 64 patients receiving two HDR brachytherapy fractions. A Python-based tool was developed to calculate the 3D inter-fractional displacement vectors of the tandem and ovoids from orthogonal radiographs. Associations between displacement and dosimetric (Point A bladder, rectum, Point B, total reference air kerma) and radiobiological (biologically effective dose and equivalent dose in 2 Gy fractions) parameters were assessed. The influence of patient age and BMI was also evaluated.

Results:

The mean inter-fractional displacements were 16.56 mm for the tandem, 19.24 mm for the right ovoid, and 18.87 mm for the left ovoid. Despite a constant prescribed Point A dose of 9 Gy, significant increases were observed in bladder dose ($p = 0.003$), TRAK ($p = 0.001$), and bladder EQD2 ($p = 0.03$) during the second fraction. Displacement magnitude showed no linear correlation with OAR dose changes. A significant inverse relationship between bladder and rectal dose variations ($r = -0.42$, $p = 0.001$) indicated a seesaw effect. Patient age and BMI were not predictive of applicator displacement.

Conclusion:

Inter-fractional applicator displacement in 2D HDR Co60 brachytherapy leads to clinically relevant dose fluctuations to organs at risk. The Python-based tool offers a straightforward and practical method for quantifying these variations using routine radiographs, thereby supporting more consistent and safer treatments.

Keywords: Cervical Cancer, HDR Brachytherapy, Applicators

OP30

Descriptive study on the types of sport-related injuries at a hospital in Sri Lanka

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Introduction:

Sport participation is associated with significant health benefits but also presents a risk of injury. Despite the growing participation in sports, epidemiological data on the types of sports injuries are limited. Understanding the types of sport-related injuries is essential for developing effective prevention, treatment, rehabilitation and return to play strategies.

Objective:

This study aimed to analyse the types of sport-related injuries to minimise injuries and improve performance.

Methods:

A prospective, descriptive observational study was conducted at Orthopedic Surgical and Sport unit of Teaching Hospital Peradeniya, Sri Lanka, from February 1, 2024 to January 31, 2025. Data collection was carried out through an interviewer-administered questionnaire.

Results:

Out of a total of 5,075 admissions, 205 (4.0%) were presented with sport-related injuries. Among these study participants, fractures were the most common type of injury, ($p<0.05$) accounting for 86 cases (41.95%). Contusions were the second most frequent injury, reported in 49 cases (23.90%), followed by dislocations and subluxations in 34 cases (16.59%). Tendon and ligament injuries constituted 31 cases (15.12%). Less frequently reported injuries included lacerations (2 cases, 0.98%), cuts (1 case, 0.49%), and muscle injuries (2 cases, 0.98%). No cases of abrasion were recorded.

Conclusion:

This epidemiological study highlights that sports-related injuries predominantly affect the musculoskeletal system. The high incidence of fractures suggests that contact sports and high impact activities pose a significant risk to athletes. The incidence of tendon and ligament injuries further emphasizes the need for improved conditioning programs to enhance joint stability and flexibility. Given the limited number of cases of lacerations, cuts, and muscle injuries, external trauma appears to play a lesser role in overall injury patterns. These findings underscore the importance of implementing targeted injury prevention strategies. Raising awareness among athletes, coaches, and healthcare providers about common injury types can help mitigate risks.

Keywords: Epidemiology, Sport injuries, Injury type

Poster Presentation

PP02

Full blood count (FBC) parameters and C-reactive protein (CRP) as diagnostic, prognostic and severity markers in sepsis in a tertiary-care hospital setting in Sri Lanka

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Introduction:

Sepsis remains a major cause of global morbidity and mortality, with a disproportionately higher burden in low- and middle-income countries, including Sri Lanka, where access to advanced biomarkers is limited. This study aimed to evaluate the diagnostic and prognostic utility of routinely available biomarkers, C-reactive protein (CRP) levels, and full blood count (FBC) parameters, neutrophil-to-lymphocyte ratio (NLR), and platelet count, in patients with sepsis.

Objective:

To evaluate the use of FBC parameters and CRP levels as diagnostic, prognostic and severity markers in sepsis among hospitalized patients in a tertiary-care setting.

Methods:

A retrospective observational study was conducted among 384 adults admitted with sepsis or septic shock to the National Hospital Kandy from April to August 2025. Data was collected from eligible patients using bed head tickets (BHTs). Statistical analysis included non-parametric tests, correlation analysis, ROC curves, and multivariable regression.

Results:

The mean age was 63 years; 66% were men, 91% had sepsis, and 9% had septic shock; the mortality rate was 18%, and 6% required ICU admission. Median admission values were, NLR 8.1, CRP 123.8 mg/dl, and platelet count 214 x $10^3/\mu L$. Patients with septic shock had higher NLR ($p = 0.009$) and maximum CRP levels ($p = 0.004$). NLR differed significantly between survivors and non-survivors ($p < 0.001$). In ROC analysis, maximum NLR had the highest predictive accuracy for mortality (AUC = 0.730), while CRP and platelet indices performed poorly. Logistic regression confirmed maximum NLR as the only independent predictor of mortality. None of the biomarkers independently predicted ICU admission. Maximum CRP showed a weak but significant association with prolonged hospital stay.

Conclusion:

NLR is the most useful biomarker in assessing severity and predicting mortality, outperforming CRP and platelets. As a simple, low-cost test available in all Sri Lankan hospitals, NLR can support early risk stratification and guide clinical decision-making in resource-limited settings.

Keywords: Sepsis, CRP, FBC, Biomarkers, Sri Lanka

PP03

C-reactive protein (CRP) and neutrophil-to-lymphocyte ratio as predictors of severity and outcome in community-acquired pneumonia in a tertiary care hospital in Sri Lanka

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Introduction:

Community-acquired pneumonia (CAP) is an acute infection of lung parenchyma remains a major global public health concern. It is the fourth leading cause of death in Sri Lanka. Pneumonia severity scores are currently used in hospitals to guide treatment decisions and predict patient outcomes but these cannot be used in routine clinical practice to explain the dynamic inflammatory response associated with CAP. In many countries, C-reactive protein (CRP) and neutrophil-to-lymphocyte ratio (NLR) are incorporated into routine assessment. But local evidence supporting their use is limited.

Objective:

To determine the association of CRP and NLR with disease severity and clinical outcome of CAP in a tertiary care hospital in Sri Lanka.

Methods:

This retrospective study analysed 385 adult patients with CAP who were admitted to the National Hospital Kandy (NHK) between January and August 2025. Demographic, clinical, and laboratory data were extracted from their bed head tickets (BHTs). These data were analyzed using descriptive statistics, correlation analysis, non-parametric group analysis, ROC curves and logistic regression of statistical package for the social sciences (SPSS).

Results:

The study population was predominantly male (72.7%), with the highest burden of disease occurring in patients aged 66–80 years. CRP levels showed a strong association with disease severity, complications, treatment location, duration of antibiotic therapy, and length of hospital stay. NLR demonstrated a weaker but significant association with severity and treatment location. CRP levels showed better predictive accuracy (AUC = 0.710) than NLR (AUC = 0.660). Combined modelling of CRP and NLR did not improve the predictive value beyond the individual markers.

Conclusion:

CRP and to a lesser extent NLR are practical, inexpensive biomarkers that can support early risk stratification, optimize resource allocation and improve clinical decision making in CAP. Health authorities should ensure that CRP testing is consistently available as a diagnostic biomarker in hospitals across the country.

Keywords: CAP, CRP, NLR, Outcomes, Pneumonia severity score

PP04

Prevalence of oral Candida in a cohort of patients treated for diabetic foot ulcer disease

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Introduction:

Oral candidiasis and diabetic foot ulcers (DFU) are common problems associated with uncontrolled diabetes. Patients with DFU may have high prevalence and carriage of oral Candida due to frequent antibiotic use and uncontrolled diabetic condition.

Objective:

This study assessed the prevalence and carriage of oral Candida and associated factors in a group of patients treated for DFU.

Methods:

A cross-sectional study was conducted among 124 adults undergoing treatment for DFU at two private medical institutes in Kandy. After obtaining the informed consent, data on socio-demographics, medical and oral health were collected through a validated questionnaire. Oral rinse samples were collected and cultured on SDA, and the prevalence of Candida was assessed based on colony morphology and Gram staining. Candida carriage was determined by counting colony-forming units per mL (CFU/mL). DFU severity was classified using Wagner's scoring system. Data were analyzed in IBM SPSS 30.0 using descriptive and comparative statistics. Oral Candida counts were classified as follows: no growth, commensal count, increased colony count, or counts with suspected oral candidiasis. Significance level was set at $P < 0.05$.

Results:

Oral Candida prevalence (exceeding the commensal count) was 38.9%. Oral Candida carriage with suspected oral candidiasis was 31.4%. DFU severity was significantly associated with oral Candida carriage ($p = 0.007$), with higher Wagner grades showing higher CFU counts. Recent antibiotic use was also linked to increased oral candida carriage ($p = 0.010$). Non-adherence to diabetic dietary advice showed a higher prevalence (38.9%) but was marginally non-significant ($p = 0.065$). No significant associations were observed with demographics, medication type, substance use, or oral hygiene.

Conclusion:

Oral Candida carriage is high in patients with DFU and is associated with greater ulcer severity and recent antibiotic use. This study emphasizes the need for integrated DFU care including oral health monitoring, antibiotic stewardship, dietary guidance, and patient education. Larger studies are recommended for conclusive findings.

Keywords: Oral Candida prevalence, Diabetic foot ulcers.

PP06

Validation and comparative accuracy of SOFA, APACHE II, and qSOFA scores in predicting ICU mortality: A prospective observational study

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Introduction:

To receive the highest patient care and outcomes, critically ill patients with various conditions are admitted to the intensive care unit (ICU). Different scoring systems are used to predict ICU mortality, but results are controversial when deciding on the best method, clinical setup (inside or outside the ICU), available facilities, facility income status, and patient factors.

Objective:

To evaluate and compare the performance of SOFA (Sequential Organ Failure Assessment), APACHE II (Acute Physiology and Chronic Health Evaluation II), and qSOFA (quick Sequential Organ Failure Assessment) scores in predicting ICU mortality.

Methods:

This prospective observational study was conducted in the ICU of the Teaching Hospital, Peradeniya, over a period of 3 months. All adult patients admitted to the ICU for at least 24 hours with complete data were included, while incomplete data and patients readmitted to the ICU within the same hospitalization, discharged, or deceased within 24hours of ICU admission were excluded.

Results:

Among the 96 included patients, ICU mortality occurred in 37(38.5%) of the patients. Comparing three scores, a higher SOFA score was significantly associated with ICU mortality ($p < 0.001$), while high qSOFA or APACHE II scores were not significantly associated with ICU mortality ($p = 0.123$ and 0.172, respectively). Multivariable logistic regression showed SOFA is an independent and significant predictor of ICU mortality, whereas qSOFA and APACHE II scores were not. Among the three scores, the qSOFA score was the most sensitive, while APACHE II was the most specific. The SOFA score had a balanced performance of specificity (56%) and sensitivity (78%). None of the scores significantly predicted ICU length of stay.

Conclusion:

The SOFA score had the best overall performance in predicting mortality with balanced specificity and sensitivity. While qSOFA showed the highest sensitivity and was useful as a screening tool, APACHE II had the highest specificity and was useful in confirming high mortality risk.

Keywords: SOFA score, qSOFA score, APACHE II, ICU mortality

PP07

Survey on awareness and practices of green operating theatre principles among theatre staff at three tertiary care hospitals in Sri Lanka- A cross-sectional study

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Introduction:

The operating theatre is one of the most important sectors in hospital facility management, where energy consumption, waste production, and potential environmental impact are higher. The "Green operating theatre" initiative advocates for the sustainable management of anaesthetic gases and efficient waste practices.

Objective:

This quality improvement study aimed to assess awareness and implementation of green operating theatre principles among theatre staff and identify obstacles and opportunities, addressing a notable deficiency of data in the country.

Methods:

A cross-sectional audit was conducted involving 62 theatre staff participants from three tertiary care hospitals: the Teaching Hospital Peradeniya, Dental Hospital Peradeniya, and National Hospital Kandy. A structured questionnaire comprising 20 questions was used for data collection, including five sections covering demographics, awareness of sustainable anaesthesia practices, current practices, institutional support and training, and attitudes with suggestions.

Results:

Among 62 participants, 32 were nurses, and 30 were medical officers, including anaesthetic team working in the operating theatre. Overall, 81% of participants demonstrated general knowledge of anaesthetic gases. Nitrous oxide was identified as a high-Global Warming Potential gas by 69%, while 50% recognized the impact of desflurane. Awareness of low-flow anaesthesia was 60%, and 77.4% had awareness of the environmental benefits of total intravenous anaesthesia. Compliance with low-flow anaesthesia techniques was 60%, while waste segregation was at 66%. The major barriers to implementation included a lack of awareness (82%), insufficient training (81%), and limited resources (60%).

Conclusion:

Awareness of environmentally sustainable practices varied significantly by professional role. Anesthetic teams and medical officers were found to be more knowledgeable than nursing staff. This gap highlights the need to improve education and resources to achieve consistent adoption of green principles and practices toward a more sustainable model.

Keywords: Green Operational theatre, Sustainable anaesthesia

PP08

Perioperative blood transfusion practices in patients undergoing surgery for oral malignancies in Teaching Hospital Peradeniya: A retrospective audit

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Introduction:

Oral malignancies are the leading type of cancer among men in Sri Lanka. Teaching Hospital Peradeniya reports around 100 oral maxillofacial surgeries carried out for the management of oral cancers annually. These procedures carry a high risk of bleeding since there is a complex anatomy, and reconstruction procedures are used. However, excessive perioperative blood transfusion has been linked to increased recurrence and reduced oncological survival.

Objective:

To assess the incidence and appropriateness of perioperative blood transfusion practices among patients with oral cancer undergoing surgery

Methods:

A retrospective observational audit was conducted at the Teaching Hospital Peradeniya utilising all available completed medical records of patients with oral cancer who underwent surgery between February and October 2025, resulting in a sample size of 53. The data were analysed using Excel and Jamovi. Statistical associations were examined using the Mann-Whitney U, Binomial Logistic Regression and Fishers exact tests.

Results:

83% of the patients had undergone reconstruction. Pre- and post-operative haemoglobin were 12.7g/dl and 11g/dl respectively, with the mean blood loss being 456ml. Incidence of perioperative transfusion was 37.7% of which 62.9% were intraoperative. Excessive transfusion (?3 units of blood) was only seen in 1.8%. Point of care assessment of Hemoglobin and Hematocrit was done in 35.8% of all patients and intraoperative use of Tranexamic acid was recorded in 51%. Intraoperative blood loss was found to be a strong predictor of the risk of blood transfusion ($p<0.001$). Associations between blood transfusion and infection ($p=0.715$) or length of hospital stay ($p=0.118$) were not statistically significant.

Conclusion:

The incidence of perioperative transfusion was higher than that recorded in other literature. Furthermore, there are inconsistencies in perioperative use of tranexamic acid and point of care assessment of haemoglobin. Pre-operative optimization of haemoglobin was also lacking in a few. Standardizing these practices is necessary to optimize perioperative blood transfusion.

Keywords: Oral cancer, blood transfusion

PP09

Oral Manifestations Across Anemia Severity, Morphological, and Chromic Subtypes in a Tertiary Care Hospital: A Retrospective Analysis

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Introduction:

Anemia is a condition in which the hemoglobin concentration is lower than the normal range. Oral manifestations, such as ulcers, pale mucosa, burning sensation, and angular cheilitis, may reflect underlying anemia. However, there is a research gap in linking oral signs with different types of anemia. Addressing this gap may aid in targeted treatment strategies.

Objective:

The current study aimed to assess the patterns of oral manifestations across anemia severity and subtypes.

Methods:

A retrospective analysis of 158 patient records with confirmed anemia from Dental Teaching Hospital, Peradeniya. Oral manifestations, including the presence of ulcer, burning sensation, glossiness, dry mouth, reduced taste, fissures, oral lesions, pigmentations, and angular cheilitis, were recorded and analyzed according to anemia subtypes using SPSS. Associations were evaluated using the chi-square test or Fisher's exact test. A p-value of < 0.05 is considered significant.

Results:

Among 158 patients, anemia severity was distributed as mild (70.9%), moderate (25.3%), and severe (3.8%). Overall, 41.8% had multiple oral signs, with burning sensation being the most common (44.9%). Although symptom burden showed a gradual increase with anemia severity, no statistically significant association was observed ($p = 0.674$). In contrast, the overall symptom burden was significantly associated with anaemia morphology ($p = 0.001$) and chromic types ($p = 0.040$). Oral ulcers and burning sensations were more frequently observed in patients with mild anaemia. Further, Glossitis and oral pigmentation were significantly associated with anemia morphology; $p = 0.009$ and $p = 0.034$, respectively. Among chromic subtypes, burning sensation ($p < 0.001$) and dry mouth ($p = 0.031$) were significantly associated with hypochromic anemia, while glossitis was significantly higher in normochromic patients ($p = 0.009$).

Conclusion:

This study revealed distinct patterns in oral manifestations across anaemia subtypes. While severity showed no significant link to individual signs, symptom burden escalated with severity and varied markedly by morphology and chromicity (normochromic > hypochromic for burning sensation, dry mouth, and glossiness).

Keywords: Anemia,Oral Signs, Severity, Morphology,Chromicity

PP10

A machine learning - based comparison of mammographic breast density between left and right breasts in 2D and 3D images

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Introduction:

In mammographic analysis, bilateral symmetry in breast tissue composition is an important consideration. For risk assessment and clinical interpretation, differences in mammographic breast density between the left and right breasts provide valuable information. In breast imaging, automated evaluation of bilateral breast density remains a challenging task.

Objective:

This ongoing study compares mammographic breast density between the left and right breasts using machine learning techniques applied to both 2D and 3D mammographic images.

Methods:

An automated bilateral analysis framework was developed using machine learning techniques. From left and right breast images, image processing, segmentation and quantitative features related to breast density were extracted. To assess density characteristics and evaluate bilateral differences, machine learning models were applied. In this study, two sets of ethically approved 2D and 3D mammographic images of 250 patients were collected.
Inclusion criteria: Normal mammographic images categorized as BI-RADS 1 on assessment, as other categories contain added densities which will adversely affect the breast density
Exclusion criteria: Mammographic images with artefacts will not be included

Results:

Preliminary analysis of a subset of the dataset demonstrated differences in extracted breast density features between the left and right breasts in both 2D and 3D mammographic images. The mean absolute bilateral density difference was higher in 3D mammography (5.6 ± 3.1%) than in 2D mammography (3.9 ± 2.4%). Initial comparisons identified bilateral asymmetric patterns with an accuracy of 86.2% for 2D images and 88.1% for 3D images.

Conclusion:

This study identified significant bilateral differences in mammographic breast density, with greater asymmetry observed in 3D than in 2D imaging. Indicating the potential of advanced computational approaches for enhancing breast density assessment, the analysis demonstrated reliable accuracy in identifying asymmetry. These findings suggest that 3D mammography may provide more sensitive detection of bilateral variations.

Keywords: Density, Bilateral, Mammography, ML, KNIME

PP11

Automated assessment of mammographic breast density using machine learning on the KNIME analytics platform

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Introduction:

Mammographic breast density is a recognized predictor of breast cancer and has a vital influence on image analysis and screening accuracy. Conventional breast density assessment relies heavily on subjective visual evaluation, causing variability across and within individual reviewers. Accordingly, standardized and automated techniques are needed to ensure impartial breast density measurement in clinical setting.

Objective:

This study aimed to develop an automated mammographic breast density assessment framework using machine learning techniques on the KNIME Analytics Platform.

Methods:

To process digital mammographic images, an automated workflow was developed on the KNIME Analytics Platform. Steps of image processing, breast region segmentation, feature extraction, and machine learning based classification included to this workflow. Quantitative features representing tissue composition were extracted from mammograms, and supervised learning algorithms were trained to assess breast density categories. The study utilizes an ethically approved dataset of mammographic images.

Results:

According to the Preliminary analysis, the developed workflow on the KNIME Analytics Platform enabled processing of mammographic images, from pre-processing to breast density assessment, with an initial processing success rate of approximately 84% across the analysed dataset. Feature extraction provided quantitative descriptors of breast tissue composition, including glandular tissue ratios, with good reproducibility (coefficient of variation< 5%). Initial classification achieved an overall accuracy in the range of 78–82% for separating BI-RADS breast density categories, demonstrating 79% sensitivity and 82% specificity for the classification of dense versus non dense breast tissue. Statistical analysis demonstrated a significant association between extracted image features and radiologist-assigned density categories ($p < 0.05$).

Conclusion:

This developed framework exhibits strong potential for effective application in mammographic breast density assessment.

Keywords: Breast, Density, ML, KNIME, Mammogram

PP15

Assessment of Parental Knowledge Regarding Pain Management in Postoperative Pediatric Patients in a Tertiary Care Hospital in Sri Lanka.

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Introduction:

Effective post-operative pain management is paramount for patient comfort and recuperation following surgery. Parents play an important role in identifying and managing post-operative pain although their level of knowledge may vary and can have a direct impact on care.

Objective:

To evaluate parental knowledge in postoperative pain management of paediatric patients undergoing surgery in a tertiary care hospital in Sri Lanka.

Methods:

This descriptive cross-sectional study was conducted in August 2025 at the surgical wards of the Sirimavo Bandaranayake Specialized Children's Hospital in Peradeniya, Sri Lanka. An interview-based questionnaire was used to gather information from 73 parents of children aged 3–12 years who had general anesthesia-assisted surgeries. While parental awareness of post-operative pain management of children was the dependent variable, demographic, child-related, parental, and other social and cultural factors were the independent variables used. Data analysis was performed using Statistical Package for Social Sciences (SPSS) version 27.

Results:

The results of this study revealed that most parents demonstrated poor (63 out of 73 participants) to moderate (9 participants out of 73) knowledge about paediatric postoperative pain management. Critical deficiencies were found in practical medication use and persistent misconceptions, especially regarding addiction to pain medication (42%). No significant links were found between knowledge level and parent demographics like age, gender, or education. Parents relied primarily on doctors for information, but only half felt adequately informed despite frequent verbal instructions from healthcare staff. While a third accessed online resources, confidence in their reliability was low (8.20%).

Conclusion:

The overall knowledge of parents about postoperative pain and pain medications were poor. Educational interventions for parents have to be implemented to improve their knowledge, in order to achieve better post-operative pain management in children.

Keywords: Pediatric postoperative pain, Parental knowledge

PP16

Perceptions toward digitalization of health sector among health care professionals in national hospital kandy.

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Introduction:

Digitalization has transformed sectors worldwide, with healthcare experiencing profound change." The adoption of digital technologies in the health sector— including video consultations, digital pathology, radiology, electronic patient management, and digital health records —is expected to enhance healthcare quality, efficiency, and accessibility. Given that healthcare professionals are central to the successful implementation of digital health systems, understanding their perceptions is crucial for effective digital transformation. This study was conducted at the National Hospital Kandy to explore the perceptions of healthcare professionals regarding the digitalization of the health sector.

Objective:

This study aimed to explore the perceptions of healthcare professionals regarding digital technologies in their routine work at the National Hospital, Kandy.

Methods:

Using a qualitative descriptive approach, semi-structured interviews were conducted with eight Health Care Professionals representing diverse roles at the National Hospital, Kandy. Purposive sampling was adopted to ensure the inclusion of information-rich cases. Thematic analysis of the qualitative data was performed using Braun and Clarke's six-phase framework, enabling systematic identification, analysis, and reporting of emergent themes.

Results:

Eight healthcare professionals participated in this study. (1) Strategies for optimizing digital transformation in healthcare, (2) The influence of digital health systems on the daily practices of healthcare professionals, (3) Challenges and barriers encountered during digitalization, and (4) Future perspectives and strategic recommendations to support digital health implementation.

Conclusion:

This study examined healthcare professionals' views on digitalization at the National Hospital Kandy, revealing predominantly positive perceptions of digitalization, tempered by concerns over infrastructure, training, and data security. Digitalization was seen to improve efficiency, quality of care, and patient outcomes. Yet, barriers such as weak infrastructure, insufficient training, and data security concerns remain. The findings stress the importance of user-friendly systems, workforce development, and institutional support. A gradual, inclusive approach will be vital to fully realize the potential of digital health in NHK.

Keywords: digitalization; health care professionals; percept

PP17

Impact of chronic unilateral lower leg lymphedema on functional mobility, balance, and quality of life - A cross-sectional study

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Introduction:

Chronic unilateral lower leg lymphedema (LLL) is a disabling condition that significantly affects activity of daily living and functional mobility. Even though it is a major global condition, only a few studies in Sri Lanka have looked at how it affects functional mobility, balance, and quality of life. A methodological gap exists in the current literature, as many studies have relied on circumferential measurements to assess the severity of lymphedema. In contrast, the present study utilized the water displacement method, which provides a more accurate and objective assessment of limb volume.

Objective:

To evaluate the impact of chronic unilateral lower leg lymphedema on functional mobility, balance, and quality of life, and to determine the correlation between the severity of lymphedema and these outcomes.

Methods:

This was a cross-sectional study investigating 35 patients of both sexes with unilateral LLL. Limb volume was assessed using plethysmography, the Lymphedema Quality of Life Questionnaire (LYMQOL) was used to assess quality of life, the Lower Extremity Functional Scale (LEFS) was used to assess functional mobility, and the Single Leg Stance Test (SLST) was used for balance assessment.

Results:

The mean age was 63.63 ± 12.95 years, with a majority being women. Lymphedema affected the left leg in 68.57% of cases. Mean BMI was 26.70 ± 5.24 kg/m2, and the mean duration of lymphedema was 108.34 ± 117.13 months. Lymphedema severity showed a significant moderate negative correlation with functional mobility ($r = -0.410$, $p = 0.014$) and balance ($r = 0.451$, $p = 0.007$). Additionally, a significant moderate positive correlation was observed with poorer quality of life ($r = +0.408$, $p = 0.015$), as higher LYMQL scores indicated worse quality of life.

Conclusion:

People with unilateral lower leg lymphedema exhibited significant moderate negative impacts on functional mobility, balance, and quality of life.

Keywords: Lymphedema,functional mobility,balance,QoL,ADLs

PP18

Awareness Of Emergency and Critical Care Nurses Working at National Hospitals of Sri Lanka on the Use of Therapeutic Hypothermia in Post Resuscitated Care

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Introduction:

Cardiac arrest (CA) is a critical medical emergency which has low survival rates. Neurological injury is the most common cause of mortality after resuscitation from CA. Therapeutic Hypothermia (TH) is considered as a neuroprotective intervention which improves survival and neurological outcomes and prevents further injury during the post-resuscitation phase. Emergency and Critical Care nurses play a major role in implementation of this life-saving intervention.

Objective:

To assess the level of awareness of emergency and critical care nurses working at Sri Lankan national hospitals regarding the use of therapeutic hypothermia for patients resuscitated from cardiac arrest.

Methods:

A descriptive cross-sectional study was conducted to investigate awareness and experience of Emergency and Critical Care nurses working at National Hospital of Sri Lanka (Colombo), National Hospital of Kandy, and National Hospital of Galle. A sample of 253 nurses who are working in ETU and Critical Care Settings from three national hospitals was recruited using convenience sampling method. Data were collected by an investigator administering questionnaires. IBM SPSS software was used to analyze.

Results:

Overall, awareness of therapeutic hypothermia among emergency and critical care nurses was notably low. Nearly two-thirds of participants (62.1%) demonstrated a low level of awareness, while 32.0% exhibited a moderate level of awareness. Only a small proportion of nurses (5.9%) achieved a high level of awareness, and the limited proportion of nurses with high awareness highlights a significant gap in comprehensive understanding.

Conclusion:

Awareness of therapeutic hypothermia among emergency and critical care nurses in Sri Lankan national hospitals is largely low. These findings highlight the urgent need for structured educational initiatives, regular in-service training, and the implementation of standardized clinical protocols to strengthen nurses' competence and promote evidence-based practice in emergency and critical care settings.

Keywords: Therapeutic Hypothermia, Cardiac Arrest, Awareness

PP19

Gadolinium-free differentiation of glioblastoma tumor core and edema using random forest radiomics on T1-weighted MRI

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Introduction:

Glioblastoma (GBM) requires precise delineation of the tumor core and peritumoral edema for effective surgical and radiotherapeutic planning. Currently, this differentiation relies heavily on Gadolinium-based contrast agents (GBCA) in T1-weighted MRI sequences. However, GBCA poses significant health risks, including nephrogenic systemic fibrosis in patients with renal impairment and potential long-term brain deposition, necessitating safer, non-invasive diagnostic alternatives.

Objective:

To develop a MATLAB-based Machine Learning (ML) interface that utilizes pixel-wise radiomic feature analysis to automatically distinguish between glioblastoma tumor core and edema on non-contrast T1-weighted MRI scans, reducing reliance on contrast agents

Methods:

A Random Forest (RF) classifier was trained on 100 radiomic features extracted from segmented GBM regions of 30 patients (240 slices). In model training process patient wise data splitting, feature preprocessing and stratified 5 k-fold cross validation were applied. Best performing model and the top 20 dominant features selected for the inference model. A custom MATLAB graphical user interface (GUI) was developed to load T1-weighted MRI sequences. Within a user-defined Region of Interest (ROI), a sliding window algorithm traverses the image. For each window, radiomic features were computed, and the central pixel was classified by the pre-trained RF model.

Results:

The Random Forest model outperformed other classifiers in distinguishing necrotic tumor core from edema based on textural heterogeneity (AUC 0.99 ±0.01 from stratified 5 k-fold cross validation). The MATLAB framework successfully generated semantic segmentation maps, visualizing the tumor core in red and edema in blue. This pixel-wise classification demonstrated morphological correlation with contrast-enhanced reference MRI images, validating the efficacy of using local radiomic texture as a surrogate for contrast enhancement.

Conclusion:

This study demonstrates that localized radiomic analysis of non-contrast T1-weighted MRI can effectively differentiate glioblastoma sub-regions. This computational approach offers a promising, kidney-safe alternative to Gadolinium contrast, potentially reducing clinical risk while maintaining diagnostic precision.

Keywords: Radiomics, Machine Learning, Glioblastoma

PP23

Correlation of cervical morphometric parameters with cervical canal stenosis and cervical spondylotic myelopathy- MRI based study

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Introduction:

Cervical Canal Stenosis (CCS) and Cervical Spondylotic Myelopathy (CSM) are common cause of spinal cord dysfunction resulting from degenerative changes of the cervical region. Accurate assessment of cervical dimensions is crucial for early diagnosis, management, and for predicting the severity of stenosis and neurological involvement. Magnetic Resonance Imaging (MRI) is considered the gold standard for evaluating these conditions.

Objective:

To assess the correlation of cervical spine morphometric measurements in patients with CCS and CSM. To determine whether age and gender a potential risk factor or a predictor of CSM and CCS.

Methods:

A retrospective case-control study was conducted using MRI images of cervical spine from 150 participants recruited from five selected hospitals, including 30 from each. Participants were equally allocated into case and control groups across age and gender. Cervical spine parameters such as Torg -Pavlov ratio (TPR), space available for cord (SAC), compression ratio (CR), cobb angle and cervicomedullary angle (CMA) were measured on the relevant images. Statistical analysis was performed using Jamovi statistical application.

Results:

Normality test revealed that only SAC and CMA followed a normal distribution while others not. Pearson's correlation analysis demonstrated significant positive relationships among TPR, SAC, and CR ($p<0.001$). Cobb angle and CMA showed a significant negative correlation ($p<0.001$), but no significant association with other parameters. Multivariate tests were done and revealed statistically significant overall effect of case control groups, age groups and gender on combined morphometric parameters. Binary logistic regression indicated that age and gender were not significant predictors for these conditions ($p>0.05$).

Conclusion:

MRI based cervical morphometric parameters particularly TPR, SAC and CR showed significant variation across disease groups and concluded that demographic characteristics alone may not be sufficient to explain the development of CCS and CSM. Focus on anatomical and morphometrics parameters are required for better clinical prediction and assessment.

Keywords: CCS, CSM, MRI, TPR, SAC

PP24

Molecular epidemiological investigations of gastro-intestinal parasites in chickens in Kandy District

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Introduction:

Parasitic infections remain a major challenge in poultry health and productivity in Sri Lanka. Poultry production in Sri Lanka primarily categorized as commercial farming and backyard farming. Assessing the prevalence of Gastro-intestinal (GI) parasites in different poultry management systems is essential for effective disease surveillance and control.

Objective:

This study aimed to compare GI parasites between the two farming practices, as backyard management systems have limited biosecurity measures.

Methods:

A total of 90 fresh faecal samples were collected between February 2025 and October 2025 from commercial (n=42) and backyard (n=48) farms in Kandy. GI parasitic eggs were identified using the modified salt floatation technique, followed by microscopic examination of eggs and cysts. Subsequently, PCR, sequencing and phylogenetic analysis was conducted. Species diversity, parasitic burden and infection intensity of chickens were compared between two farming systems.

Results:

From this study, five helminth species were identified including Capillaria spp. (12.22 %), Ascaridia spp. (12.22 %), Heterakis spp. (3.33 %), Raillietina spp. (22.22 %), and Taenia spp. (16.67 %), with cestodes (38.89 %) being more prevalent than nematodes (27.77 %). The Taenia spp. showed the highest parasitic burden (EPG= 10.33 ± 2.851), followed by Raillietina spp. (EPG= 9.67 ± 2.877), Ascaridia spp. (EPG= 9.33 ± 2.492), and Heterakis spp. (EPG= 4.33 ± 1.612). Backyard chickens demonstrated a significantly higher ($p < 0.001$) parasitic burden and higher infection intensities compared to commercial farm chickens.

Conclusion:

The findings from this study clearly emphasizes the impact of husbandry practices, biosecurity levels on parasitic disease transmission and exposure to the environment. This study highlights the critical need for enhanced surveillance and effective parasite control programmes in order to mitigate productivity losses and improve better health and sustainability of the poultry industry in Sri Lanka.

Keywords: Parasitic infections;Chickens;PCR;Sri Lanka

PP25

Sero-prevalence of anti-hepatitis E virus IgG in selected urban and estate populations in the Kandy District of Sri Lanka

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Introduction:

Hepatitis E virus (HEV) is one of the leading causes of acute viral hepatitis globally. HEV is transmitted via the contaminated food and water and that communities live under poor socio-economic conditions are more susceptible to HEV infection. In Sri Lanka, community-based sero-prevalence data on HEV infection are limited, and differences in exposure across urban and estate settings of the Kandy District is yet to be investigated.

Objective:

This study aimed to determine the anti-HEV IgG sero-prevalence of HEV infection and to assess the association between anti-HEV IgG sero-prevalence and socio-demographic factors in selected urban and estate settings of the Kandy District of Sri Lanka.

Methods:

A descriptive, cross-sectional study was done from May to October 2025 among 180 adults from selected from estate (44.4%, n=80/180) and urban (55.6%, n=100/180) populations. A convenient sampling was used to collect data and blood samples, which were tested for anti-HEV IgG using an ELISA (Wantai diagnostics, PRC). Statistical analysis was done using SPSS version 23 and Fisher's exact test was used to identify associations between socio-demographic variables and anti-HAV IgG sero-prevalence.

Results:

The mean age was 41.7±15.3 years and females accounted for 61.7% of the study population.The ethnic distribution was 46.7% Tamil, 27.2% Sinhalese, and 26.1% Muslim. The overall anti-HEV IgG sero-prevalence was 2.8 % with low exposure rates in urban (3.0%) and estate (2.5%) sectors. Fisher's exact test showed no statistically significant association between anti-HEV IgG sero-positivity and the gender, ethnicity, residence, marital status, education level or employment ($p>0.05$).

Conclusion:

The anti-HEV IgG sero-prevalence was very low among both estate and urban populations. This suggests limited exposure to HEV in these communities irrespective of sociodemographic differences. However, larger community-based studies are warranted to better understand HEV sero-epidemiology and potential risk factors.

Keywords: Sero-prevalence, anti-HEV IgG, Kandy District

PP26

Living with pain: the hidden burden of chronic pain in a semi-rural Sri Lankan community

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Introduction:

Background: This study examined the incidence of chronic pain among adults in a Grama Niladhari division in Sri Lanka with the goal of providing insights into a topic that has not been well-explored and also identifying sites of pain and associated factors.

Objective:

To determine the prevalence of chronic pain in adults (19 years and above) within the Embilmeegama Grama Niladhari division, in Central Province, identifying the commonest sites of pain, the most affected age group and to investigate the related demograph

Methods:

A total of 337 adult participants were involved in an interview-based questionnaire. The results were categorized into three main age groups for analysis: Category 1 (19-30 years), Category 2 (31- 45 years), and Category 3 (over 46 years). The data were analyzed using RStudio software.

Results:

The study revealed 44% of overall prevalence of chronic pain among the interviewed adults in the Embilmeegama Grama Niladhari division. A higher proportion of females reported experiencing chronic pain (72.5%) compared to males (27.5%). A strong correlation between chronic pain and increasing age, with the highest prevalence (63.2%) being observed in the category 3. Back pain was identified as the most frequently reported site of chronic pain. Diabetes mellitus and hypertension were revealed as the comorbidities most prevalent among individuals with chronic pain.

Conclusion:

There is a notable prevalence of chronic pain particularly among the older population, prevalence increased with advancing age. Back was the commonest site of pain, followed by lower limbs. Key comorbidities associated with chronic pain were diabetes mellitus and hypertension while females experienced a higher prevalence than males. This study highlights the need for age- and gender-sensitive, multidisciplinary pain management with a focus on prevention and early intervention to improve quality of life and guide healthcare planning.

Keywords: ChronicPain,Prevalence,Adults,RiskFactors,Comorbid

PP27

Antibacterial and Anticandidal Activity of Nickel(II) and Zinc(II) Schiff Base Complexes Derived from p-Hydroxybenzaldehyde

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Introduction:

Schiff base metal complexes have gained considerable attention as potential metallodrugs to combat the increasing resistance of pathogenic microorganisms to existing antimicrobial drugs.

Objective:

The objective of this study was to investigate the biological activity of Schiff bases coordinated to metal ions for their potential pharmacological applications.

Methods:

A Schiff base ligand was synthesized via condensation of p-hydroxybenzaldehyde and p-toluidine in a 1:1 molar ratio, followed by complexation with Ni(II) and Zn(II) ions in a 2:1 ligand-to-metal ratio. The synthesized ligand and its metal complexes were characterized using FT-IR and UV–visible spectroscopy, elemental analysis, powder X-ray diffraction, and melting point determination. FT-IR spectra confirmed the formation of the Schiff base through a characteristic azomethine ?(C=N) stretching band at 1690 cm?¹, while bands observed around 460 cm?¹ indicated metal–ligand coordination. The ligand and complexes were soluble in ethanol, DMSO, and acetonitrile. The antibacterial activity was investigated against Escherichia coli, Pseudomonas aeruginosa (Gram-negative) Enterococcus faecalis, Staphylococcus aureus (Gram-positive) reference strains, while anticandidal activity was assessed against Candida albicans through the agar well diffusion and agar dilution bioassay. The Minimum Inhibitory Concentrations (MICs) and Inhibitory Zone Diameters (IZDs) were determined using above mentioned methods in Muller Hinton Agar.

Results:

Both Ni(II) and Zn(II) complexes exhibited significantly enhanced antibacterial and anticandidal activities compared to the free ligand. The Zn(II) complex showed the highest activity against P. aeruginosa (IZD 13 mm; MIC 320 ppm), whereas the Ni(II) complex was most effective against E. faecalis. (IZD, 12 mm; MIC, 640 ppm).

Conclusion:

The enhanced activity is attributed to metal chelation, which likely facilitates improved membrane permeability and interaction with intracellular targets. Notably, the parent metal salts showed no inhibitory activity, confirming the essential role of coordination in antimicrobial efficacy. Toxicity and biocompatibility studies are being conducted to assess the clinical potential of these complexes as prospective antimicrobial agents.

Keywords: Inhibition, Schiff-base, Antibiotics

PP28

Self-assessment of core surgical skills competence among new medical graduates insights from the university of Peradeniya, Sri Lanka

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Introduction:

Although Sri Lankan Intern Medical Officers (IMOs) various teaching and assessment methods, opportunities for supervised hands-on practice remain limited. Previous studies have shown that students achieve proficiency in only a small number of basic procedures, highlighting a gap between theory and practical skills.

Objective:

The objective of this study was to evaluate graduates' self-perceived competency in clinical procedures to identify gaps in their training.

Methods:

This descriptive cross-sectional study involved 62 of 158 (39.24%) medical graduates from the Faculty of Medicine, University of Peradeniya, Sri Lanka, using a validated self-administered Google Form questionnaire. Confidence in 21 procedural skills was assessed on a 5-point Likert scale, and data were analyzed with SPSS version 22 using descriptive statistics, Chi-square tests, and Pearson correlation to examine associations between procedural exposure and confidence.

Results:

Participants demonstrated high proficiency in frequently performed ward-based procedures, including female urinary catheterization (100%), IV-line insertion (98.4%), and surgical scrubbing (98.4%). In contrast, very low levels of practice were observed in trauma-related procedures such as splinting (8.0%) and nursing-type skills, including stoma care (8.1%) and tracheostomy care (8.0%). Correspondingly, participants reported greater confidence in skills that were more commonly practiced. Pearson's correlation analysis showed a fairly positive association between the level of procedural practice and confidence.

Conclusion:

Graduates reported confidence in routine ward duties required for initial IMO roles, reflecting strong undergraduate preparation in these areas. However, deficiencies in trauma and specialized care skills highlight significant gaps that could affect emergency management. These findings emphasize the need for simulation training, supervised clinical exposure, and skills-based assessments programs. This approach will reduce practice gaps and better prepare graduates for independent practice.

Keywords: Interns,Competency,Training, Skills,Procedures

PP29

A Hospital Within A Monastery: An Examination of the Medical Remains from Alahana Parivena in Polonnaruva, Sri Lanka.

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Introduction:

The Alahana Parivena monastery in Polonnaruva gained wider public and scholarly attention through the "UNESCO- Sri Lanka Cultural Triangle Project." The excavation project of the Alahana Parivena monastery (1981-1999) was led by Prof. Leelananda Premathilleke, a prominent scholar in the field of archaeology in Sri Lanka. The ancient monks' hospital at the Alahana Parivena holds significant importance in Sri Lankan archaeology and medical history, as it is one of the few ancient hospitals where surgical and other medicinal storage and preparation equipments, closely resembling modern surgical equipment, have been discovered.

Objective:

To identify and analyse the inferred function of the excavated surgical instruments, which are metal applicators/hooks, probes, large scissors, small scissors, a lance, forceps with strong jaws, forceps with delicate structure, and a scalpel. Excavated no

Methods:

Fieldwork and archival excavation reports, along with expert analyses, informed a detailed functional study of the excavated artefacts. Supplementing this, ancient chronicles, epigraphic evidence, and Pali texts were referred to contextualise 12th century BC healthcare practices and their links to Buddhism.

Results:

Remarkably, the excavated surgical instruments closely resemble modern surgical instruments in both form and inferred function and are comparable to those found at Taxila in Pakistan, as well as ancient Greek and Roman surgical instruments.

Conclusion:

Built in the 12th century A.D., the monastery and the ancient monks were established under the royal patronage of King Parakramabahu I in a period defined by monastic expansion and reform of the Sangha, and the Alahana Parivena monastic hospital stands today as a testament to the advanced scientific knowledge and humanitarian priorities of early Sri Lanka.

Keywords: surgery, equipment, ancient, monastery, history

PP30

Improving Access to Breast Cancer Medical Information with an AI-Powered Clinical Research Chatbot

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Introduction:

In Sri Lanka, patients with cancer often experience difficulties accessing timely medical information and clinical support. Patients, healthcare professionals, and students frequently rely on digital clinical guidelines, textbooks, and research articles. However, traditional document search tools have limitations: they struggle with typographical errors, interpret natural language queries, and often fail to extract contextually relevant clinical information. These challenges can impede effective knowledge access in healthcare settings.

Objective:

The objective of this project was to create a prototype clinical research chatbot that uses artificial intelligence (AI) to handle user input errors effectively and retrieve precise, context-aware responses from medical Portable Document Format (PDF) docu

Methods:

The system extracts and pre-processes text from clinical PDF documents using natural language processing techniques. Rule-based and contextual analyses were used to identify question-answer patterns. To enable robust typo correction, edit distance, phonetic similarity, and sequence-matching algorithms are applied to a document-specific vocabulary. Intelligent question matching was accomplished by combining contextual relevance scoring, semantic similarity, and keyword overlap. When precise matches were unavailable, the chatbot analysed the most relevant portions of the document to produce clinically relevant responses. To improve transparency and reliability, each response was accompanied by a confidence score.

Results:

Typographical errors in user queries were corrected in approximately 95% of test cases. The system generated contextually appropriate responses directly from the source document, with an average confidence score of 0.86 (Range 0.72-0.94). Average response latency was less than 2 seconds per query, demonstrating suitability for real time clinical and educational use with improved precision and usability of document-based information access.

Conclusion:

The AI-based clinical research chatbot provides an efficient method for intelligently retrieving information from breast cancer-related medical documents. The system has strong potential to support clinical training, evidence-based practice, and healthcare education by improving document-based question-answering accuracy, usability, and confidence.

Keywords: Rule-based analysis,Contextual relevance scoring

PP31

Impact of ergonomic risk factors on wrist functions among female sewing machine operators

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Introduction:

Work-related musculoskeletal disorders (WMSD) are common among female sewing machine operators due to repetitive movements and awkward postures. However, studies lack in-depth examination of the involvement of the wrist, despite its role in repetitive and continuous fine motor tasks related to sewing and its impact on the quality of the activities of daily living.

Objective:

To investigate the impact of ergonomic risk factors on wrist functions such as wrist flexion and extension range of motion (ROM), wrist flexor strength, wrist extensor strength, and wrist grip strength among female sewing machine operators.

Methods:

An observational descriptive cross sectional study was conducted among 156 female sewing machine operators using convenience sampling from a garment factory in Nuwara Eliya District. Participants' risk levels were assessed using the Quick Exposure Check (QEC) questionnaire and categorized into four severity levels: low, moderate, high and very high. Wrist flexion and extension ROM, wrist flexor and extensor strength, and grip strength were measured using standardized instruments. All variables were assessed separately for the dominant and non-dominant hand. Data were categorized according to QEC severity levels for both the hands. For the analysis, the independent sample t-test and the Mann-Whitney U test were used.

Results:

Dominant hand showed a statistically significant difference in wrist flexor strength between high and moderate risk groups ($p = 0.036$) while no participants fell into low or very high-risk groups. All other wrist functions showed no statistically significant differences across QEC risk levels.

Conclusion:

Participants with higher risk were found to have significantly greater wrist flexor strength in the dominant hand compared to the moderate-risk group. This finding reflects the increased palmar-dominant forces, wrist deviations during sewing activities, and increased use of the dominant hand in activities of daily living.

Keywords: Ergonomic, Wrist, Garment industry, Sewing, Female

PP32

Establishment of an Online Multidisciplinary Preoperative Assessment System for Liver Transplant Waiting Patients at Teaching Hospital Peradeniya, Sri Lanka "Streamlining Pre-Op for Liver Transplants: A Digital MDT Solution"

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Introduction:

Liver transplantation is a complex, resource-intensive procedure requiring coordinated multidisciplinary preoperative assessment of both donors and recipients. At Teaching Hospital Peradeniya (THP), logistical challenges exist because hepatology referrals primarily originate from the National Hospital Kandy, and patients are reviewed by multiple specialties at different times and locations. This fragmented process leads to duplication of assessments, inefficient resources utilization, and undue patient delay. To address these challenges, a quality improvement initiative was undertaken to establish an online multidisciplinary team (MDT) preoperative assessment system to streamline evaluation and enhance coordination.

Objective:

To develop and implement a secure online MDT platform for liver transplant preoperative assessment, improve coordination among specialties, reduce duplication of evaluations, and enhance readiness for both planned and deceased donor transplant procedures.

Methods:

Following MDT approval, a secure, accessible, and cost-effective online system was developed using Google Workspace (Google Slides share). Patient data were stored confidentially within the THP Google Drive with password protection. MDT members, including hepatologists, anaesthetists, surgeons, psychiatrists, nutritionists, intensivists, and alliedspecialistst,s were granted controlled access via the hospital's Information and Resource Centre. Standardized assessment forms were completed by each specialty and organized by blood group category, prioritized according to the transplant waiting list. Updates, reviews, and new investigations were incorporated dynamically. Critical issues were flagged using a red-box marking system for rapid consultant visibility, particularly important during deceased donor transplant opportunities.

Results:

The system streamlined preoperative workflow, reduced duplication of clinic visits and investigations, and improved communication among specialties. It facilitated rapid retrieval of updated patient data, enabling timely clinical decision-making and better preparedness for urgent transplant scenarios.

Conclusion:

The online MDT assessment system proved to be a practical, resource-efficient model for improving preoperative liver transplant coordination in Sri Lanka. This approach aligns with global trends toward virtual transplant assessments and may be adaptable to other resource-limited healthcare settings.

Keywords: Liver Transplant, Multidisciplinary, Digitalised

PP33

Effects of Early Palliative Care on Pain Management and Quality of Life in Patients with Chronic Kidney Disease: A Systematic Review.

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Introduction:

Chronic Kidney Disease (CKD) is a progressive condition often accompanied by a high burden of pain and reduced quality of life. Despite advances in nephrology care, pain management and supportive care needs in CKD are often under recognized and inadequately addressed. Palliative care (PC), traditionally introduced late in the disease trajectory, has increasingly been recommended for earlier integration to improve symptom control and patient centered outcomes. Evidence regarding the early integration of palliative care in these patients is currently limited and fragmented.

Objective:

This systematic review aimed to evaluate the effect of early palliative care on pain management and quality of life in adults with CKD compared to standard or late/no palliative care.

Methods:

This systematic review will be conducted in accordance with the preferred reporting items for systematic review and meta-analysis (PRISMA) guidelines. Electronic searches will be performed in PubMed and Cochrane library to identified randomized and non-randomized studies, cohort studies, case-control studies, observational studies reporting outcomes, case reports and case series. Risk of bias will be assessed using RoB-2 and ROBINS-I Newcastle-Ottawa tools.

Results:

CKD causes severe physical, psychological, and social problems that significantly reduce patients' quality of life. Early PC integration is proposed to improve symptom management, decision-making, and patient-centered outcomes, however the evidence for its usefulness is uneven and varies. The purpose of this systematic review was to compare the impact of early palliative care on pain management and quality of life in CKD patients to that of standard or delayed care by examining available research at various stages and settings.

Conclusion:

The findings are expected to inform clinical practice, guide future research, and support the development of integrated care models that prioritize symptoms relief and overall well-being in this growing patient's population.

Keywords: Palliative care, Chronic Kidney Disease

PP34

Synthesis, Characterization, and Antimicrobial Activity of Novel Metal–Schiff Base Complexes as Potent Antimicrobial Agents against drug resistant pathogens

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Introduction:

Antimicrobial resistance (AMR) poses a serious global health threat due to the increasing prevalence of multidrug-resistant pathogens and declining efficacy of conventional antibiotics.

Objective:

The main objective of this research is to investigate the biological activity of Schiff bases coordinated to transition metal ions for their potential pharmacological applications to prevent and cure microbial (bacterial, candidal) diseases. In response, m

Methods:

In the current study, a novel tridentate Schiff base ligand, 2-((E)-((2-(((E)-benzylidene)amino)phenyl)imino)methyl)-naphthalene-1-ol, was synthesized via reflux condensation of o-phenylenediamine with 2-hydroxy-1-naphthaldehyde and benzaldehyde, and subsequently complexed with Cu(II), Ni(II), Mn(II), and V(IV) ions. The ligand and its metal complexes were characterized by FT-IR, UV–Vis spectroscopy, X-ray diffraction, and elemental analysis. Spectroscopic data confirmed coordination through azomethine nitrogen and phenolic oxygen atoms, with a characteristic ?(C=N) band at ~1611 cm?¹ and metal–ligand vibrations observed in the 400–700 cm?¹ region. The antimicrobial activity of the ligand and its complexes were evaluated against Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, Enterococcus faecalis, and Candida albicans using the agar well-diffusion bioassay, while the Minimum Inhibitory Concentrations (MICs) were determined through the agar dilution method.

Results:

Among the complexes, Cu(II) derivative showed the most potent and broad-spectrum activity, prominently against E. faecalis (17 mm inhibition zone; MIC 128ppm), while the Mn(II) complex exhibited the highest activity against S. aureus (22 mm inhibition zone; MIC 640 ppm).The free ligand and corresponding metal salts showed minimal or no antimicrobial activity, highlighting the critical role of chelation in enhancing biological efficacy.

Conclusion:

Toxicity studies are currently underway to assess the safety profile of these compounds. Overall, these findings identify the synthesized metal–Schiff base complexes as potential candidates for the development of new antimicrobial agents targeting resistant pathogens.

Keywords: Schiff base, metallodrug, anti-bacterial

PP35

Spatial distribution of sexually transmitted diseases and cervical carcinoma among the female population in Kandy district, Sri Lanka: a descriptive analysis.

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Introduction:

Cervical cancer is considered the fourth most common women's malignancy after breast and colorectal cancer worldwide. It was identified as one of the commonest reasons for cancer-related female mortality in low-and middle-income countries. Sexually transmitted diseases (STDs) play a significant role as a risk factor for the causation of cervical cancer, and the human papillomavirus is identified as the most significant risk factor.

Objective:

To associate the map of the STD prevalence with the geographic distribution map of cervical carcinoma and identify highly overlapping areas of them, called "hotspot" areas, using the technology of geographic information systems (GIS).

Methods:

A retrospective-descriptive study was conducted (2012-2022), including histopathologically confirmed cases resident in Sri Lanka. The prevalence of cervical cancer data was retrieved from the oncology units of the National Hospital, Kandy, and the prevalence of STDs was obtained from the National Center for STDs based on the divisional secretariat divisions (DSDs) in Kandy district. Descriptive statistics determined the prevalence of cervical cancer and STDs data using SPSS 26.0, while GIS technology mapped the prevalence of those based on DSD levels using ArcGIS 9.2 software.

Results:

Gagawata Korale DSD reported the 0.41 per 10,000 female population (n=31) of the highest prevalence of cervical carcinoma, while 1.72 per 10,000 female population (n=130) of the highest prevalence of viral STDs, the highest prevalence of other STDs (142, 1.88 per 10,000 female population), and the highest prevalence of 3.60 per 10,000 female population (n=272) of all STDs in Kandy district. Therefore, Gagawata Korale DSD was identified as a "hotspot" area in Kandy district.

Conclusion:

The study findings significantly highlight the burden of cervical cancer and STDs in Kandy district. The identified "hotspot" area in Kandy district emphasizes the need for public health strategies to minimize the disease burden.

Keywords: Sexually transmitted diseases, cervical cancer

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