تجمع الرياض الصحي الثاني
Riyadh Second Health Cluster

# Conference Booklet


ACCREDITED CME HOURS

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In collaboration with the R2 Research Center

# Content

# 19th Annual Research Conference

The 19th Annual Research Conference is a leading event that brings together health and healthcare experts, practitioners, and researchers. The conference provides a platform for sharing groundbreaking insights, exploring policy implications, and advancing scientific knowledge. Focusing on the intersection of translational Research, genetics, AI in clinical research, community health, and healthcare practices, this conference promises to be intellectually interesting and impactful.

## Welcome Message

### Conference President

**Dr. Adnan AlMaghlouth**
*Director, Research Service & Applied Clinical Administration*

**Dr. Dania AlJaroudi**
*Vice President of the Research Center*

Dear Valued Guests and Colleagues and conference participants, it is with great pleasure for all the research center family to welcome you again this year in the 19th Annual Research Conference. During the two days' conference you will be indulged on a variety of clinical and scientific research topics and ideas that will enlighten you with our services at the R2 research center. I am confident that you will also find great opportunities to support your current and future research ideas and open new channels for your networking and collaboration.
Thank you for joining us on this event and looking forward to welcoming you.

- **Connect and Collaborate:** Meet research leaders, schedule face-to-face meetings, and explore potential partnerships
- **Learn and Grow:** Gain valuable insights, acquire new skills, and boost your visibility within the research community
- **Discover Innovations:** Uncover groundbreaking technologies and solutions from different researchers.
- **Expand Your Network**: Forge strong connections with potential researchers

# 19th Annual Research Conference

## Welcome Message

**Dr. Leen Abu Safieh**
*Clinical Research Consultant*
*Chairperson of Organizing Committee*

We are joined by an extraordinary gathering of minds—renowned researchers, academics professionals, and young scholars—each contributing to the growing tapestry of scientific knowledge and innovation. This event is not only an opportunity to share groundbreaking ideas and foster intellectual discourse but also a celebration of curiosity, dedication, and progress.

Our program features panel discussion, keynote presentations, six interactive sessions, and poster presentations, carefully designed to encourage collaboration and inspire new perspectives. We are confident that the insights shared over the course of this conference will leave a lasting impact on scientific and clinical research.

I would like to extend my heartfelt gratitude to our sponsors, partners, and organizing committee members, whose unwavering support and hard work have made this event possible. A special thank you to all speakers and participants for bringing your expertise and enthusiasm to this forum.

As we embark on this journey of discovery and dialogue, I encourage each of you to make the most of the opportunities here—ask questions, share your insights, and connect with peers. Let us work together to explore new horizons and shape the future of clinical and scientific research.

Once again, welcome to the 19th Annual Research Conference. I wish you a productive, inspiring, and memorable experience.

Warm regards,
Dr. Leen Abu Safieh
Clinical Research Consultant
Organizing Chairperson

# 19th Annual Research Conference

## Welcome Message

**Dr. Saleh AlRajhi**

*Chairman, Epidemiology, public, and population health research Dept.*

*Chairperson of Scientific Committee*

With immense pride and honor, I welcome you all to the 19th Annual Research Conference of Health Cluster-2, Riyadh, Saudi Arabia. I begin by expressing my profound gratitude to our distinguished keynote speakers for their gracious acceptance of our invitation. Additionally, I extend my heartfelt appreciation to all the participants who submitted their abstracts, showcasing remarkable quality and innovation.

As we stand at the forefront of global health challenges, our collective responsibility is to innovate, research, and collaborate in our relentless pursuit of solutions. Scientists, clinicians, and healthcare professionals worldwide are dedicated to advancing the quality of patient care, enhancing community well-being, and alleviating the economic burden on governments through groundbreaking research.

The Scientific Committee for this conference has been truly inspired by the passion, depth of knowledge, and originality evident in the 140 submitted abstracts. Each contribution signifies a step forward in our shared mission to address the pressing health concerns of our time.

This year, our conference will delve into four research themes that span a diverse array of critical topics, including translational research, clinical trials, clinical research, bioinformatics, epidemiology, public health, and the innovative application of artificial intelligence in healthcare. I eagerly anticipate the rich discussions and insights that will emerge from these sessions, driving forward the frontiers of medical science and research.

Finally, I extend my deepest thanks to each of you for dedicating your valuable time and expertise to this esteemed event. Together, let us continue to support, inspire, and advocate for the growth of research that will pave the way for a healthier future for all.

Welcome to a gathering of minds committed to excellence and innovation in healthcare research.

# Organizing Committee

- **Dr. Leen Abo Safieh (*Chairperson of Organizing Committee )***
- **Ms. Maram Alshammari**
- **Dr. Maha Aldahash**
- **Dr. Razan Orfali**
- **Mr. Abdulaziz Alsaloom**
- **Ms. Monerah Alsaloum**
- **Mr. Saad bin Suwydan**

# Scientific Committee

- **Dr. Saleh Al Rajhi (*Chairperson of Scientific Committee )***
- **Dr. Mohammad Jazzar**
- **Mr. Saad Alamri**
- **Dr. Maaweya Awad Allah**

PMAH

تجمع الرياض الصحي الثاني
Riyadh Second Health Cluster

# Keynote Speakers

**Prof. Khalid Al Rubeaan**

- A Full Professor of Endocrinology and Internal Medicine
- Director of Research and Scientific Center at Sultan Bin Abdulaziz Humanitarian City.
- A Part-time WHO consultant at Regional Office for the
- Eastern Mediterranean region (EMRO)
- The chairman of board of trustee and founder of Diabetes
- Science International Foundation, Basal, Switzerland.
- Editor-in-Chief for International Journal of Diabetes Mellitus and Al-Sukhari Magazines

**Dr. Rasha Alfawaz**

- Director of Public Health Programs and policies at the Gulf Center For Disease Prevention and Control.
- A former Chief Officer for Health Improvement and Promotion at the Saudi Public Health Authority.
- Director of Non-Communicable Disease affairs.
- Headed the Support and Development Unit at the General Directorate of Health.
- Programs and Chronic Diseases, and the Director of Diet and Physical Activity National Program.

**Prof. Wadee Alhalabi**

- Professor, King Abdulaziz University.
- Prof. Alhalabi's expertise covers issues in virtual reality, rehabilitation engineering, and the use of virtual reality application in health science.
- Authored, Edited and co-edited as well as reviewed large number of books, articles, and journals.
- A vast experience in the industry, as he worked for Jeddah desalination and power generation plant, Saudi Arabia Monetary Agency, Makkah College of Tech., and King Abdulaziz University.

# Conference Program Day 1 (December 25, 2024)

| Day 1 | | Wednesday, 25 December, 2024 | |
|---|---|---|---|
| **From** | **To** | **Topics** | **Speakers** |
| **8:15** | **8:40** | Registration | |
| | | **Session 1:**<br>**Translational Virology Research**<br>**Moderator *(Dr. Sharafaldeen Bin Nafisah)*** | |
| **8:45** | **9:00** | Humoral and Cellular Immune Durability of Different COVID-19 Vaccine Platforms Following Homologous/Heterologous Boosters: One-Year Post Vaccination | **Dr. Maaweya Elaeed Hamed Awad Alla** |
| **9:00** | **9:15** | A 10 year long-lived cellular and humoral MERS-CoV immunity cross-recognizing the Wild-type and Variants of SARS-CoV-2 | **Dr. Bandar Alosaimi** |
| **9:15** | **10:15** | Opening Ceremony **discussion panel** & Welcome Remarks , Kingdom of Saudi Arabia Leap in clinical and Scientific Research; Towards 2030 and Beyond.<br>**(Moderator, Dr. Dayel Alshahrani)** | **Dr.Yazeed Al Alsheikh , Dr. Sultan Al Saudary , Dr. Ahmad Al Bader, Dr. Batoul Al Baz, & Dr. Mohammed Alwaidh** |
| **10:15** | **10:45** | Networking Coffee Break | |
| | | **Session 2:**<br>**Genetic Research and disease management,**<br>**Moderator *(Dr. Leen Abo Safieh)*** | |
| **10:45** | **11:00** | Three-year experience in genetic screening and prevention of primary congenital glaucoma (PCG) in Saudi Arabia: early results from a pilot program at King Khaled Eye Specialist Hospital (KKESH). | **Dr. Manal Alwazae** |
| **11:00** | **11:15** | Genetic screening and counselling for families with Primary Congenital Glaucoma (PCG): Three years of experience at King Khaled Eye Specialist Hospital (KKESH) in Saudi Arabia. | **Dr. Areej Alizary** |
| **11:15** | **11:30** | Dual Activation of TMEM16A and TRPV4 by Eact as Potential Therapeutic Target for Cystic Fibrosis | **Dr. Razan Orfali** |
| **11:30** | **11:45** | A novel homozygous splice site variant in the CLCN7 causes Osteopetrosis | **Dr. Zeinab Mohamed Klaab** |
| **11:45** | **12:15** | Posters viewing and Networking | |
| **12:15** | **13:30** | Prayer and Lunch Break | |
| | | **Session 3:**<br>**New Frontiers and Technologies in Clinical Research**<br>**Moderator *(Dr. Bandar Alosaimi)*** | |
| **13:30** | **13:45** | The Outcome of Intra-Operative Chest Tube Insertion in Esophageal Atresia Patients | **Dr. Yasir Alrashdan** |
| **13:45** | **14:00** | 'Transanal Endorectal Pull-through vs Duhamel Surgery in The Management of Hirschsprung Disease: A Retrospective Study' | **Dr. Mohammad Abdulatef Halawani** |
| **14:00** | **14:15** | Hybrid Mathieu Urethroplasty vs.Tubularized Incised Plate Urethroplasty for the Management of Distal Penile Hypospadias With a Small Glans | **Dr. Mohammad Gharieb Khirallah** |
| **14:15** | **14:45** | Efficacy and cost-effectiveness of 3D Printed Assistive devices for rehabilitation hospital beneficiaries | **Dr. Walaa Alammar** |
| **14:45** | **15:00** | Peri-Kasai portoenterostomy sutures anchoring the jejunal loop to Glisson capsule: A novel modification to reduce the incidence of cholangitis | **Dr. Mohammad Gharieb Khirallah** |
| **15:00** | **15:15** | Posters Viewing and Networking | |
| **15:15** | **15:30** | 1st Day Closing Remarks | |

# Conference Program Day 2 (December 26, 2024)

| Day 2 | | Thursday , 26 December, 2024 | |
|---|---|---|---|
| **From** | **To** | **Topics** | **Speakers** |
| **8:30** | **9:00** | Registration | |
| | | **Session 1:**<br>**Health and Wellbeing Research - part 1**<br>**Moderator (*Dr. Saleh Alrajhi*)** | |
| **9:00** | **9:30** | **Hakuna Matata between Old & New Medicine** | **Prof. Khalid Al Rubeaan** *Keynote Speaker* |
| **9:30** | **9:45** | Changes in consummatory behavior (liking) after liraglutide treatment in adult people with obesity | **Dr. Najla Alorayyidh** |
| **9:45** | **10:00** | Efficacy of Arabic Carbohydrate Counting /Bolus Calculator Mobile Application on Glycaemia Control among Type 1 diabetes subjects | **Dr. Sara Albabtain** |
| **10:00** | **10:15** | Investigation of the Effects of Support Matrices on the Structure and Folding of G6PD Enzymes from G6PD-deficient Patients | **Dr. Muawiyah Ahmad H. Ahmed** |
| **10:15** | **10:45** | Networking Coffee Break | |
| | | **Session 2:**<br>**Health and Wellbeing Research - part 2**<br>**Moderator (*Prof. Naji AlJohani*)** | |
| **10:45** | **11:00** | Evaluation of Treatment Parameters for Focused-Extracorporeal Shockwave Therapy in Knee Osteoarthritis Related Bone Marrow Lesion | **Dr. Hani Alabbad** |
| **11:00** | **11:30** | **Public Health Programs and Policies, towards better health care** | **Dr. Rasha Al Fawaz** *Keynote Speaker* |
| **11:30** | **11:45** | Calcium versus cabergoline for prevention of ovarian hyperstimulation syndrome: a systematic review and meta-analysis. | **Dr. Saeed Marzoq Baradwan** |
| **11:45** | **12:00** | Depressive Symptoms and Burden Among Caregiver of Adult Cancer Patients at KFMC, Riyadh, Saudi Arabia | **Dr. Razan Ahmad Aljudibi** |
| **12:00** | **12:30** | Posters viewing and Networking | |
| **12:30** | **13:30** | Prayer and Lunch Break | |
| | | **Session 3:**<br>**AI & Clinical Research, Gynecology Research**<br>**Moderator (*Dr. Ali AlFaiz*)** | |
| **13:30** | **14:00** | **Innovation AI Application in Clinical Research** | **Prof. Wadee Alhalbi** *Keynote Speaker* |
| **14:00** | **14:15** | A Rare Case of Herpes Simplex Meningoencephalitis and Seronegative Cerebral Toxoplasmosis Co-Infection in a Pregnant Saudi Woman | **Dr. Razan Almasuood** |
| **14:15** | **14:30** | Live Births After Vaginal Progesterone Cyclogest Suppository Versus Crinone Gel for Luteal Phase Support (LPS) | **Dr. Dania Aljaroudi** |
| **14:30** | **14:45** | Effect of mixed gonadotropins on pregnancy rate in comparison to mono gonadotropin in antagonist protocol ICSI cycles' stimulation | **Dr. Hind Aldabal** |
| **14:45** | **15:00** | Pap smear screening combined with human papillomavirus (HPV) test in subfertile women | **Dr. Ahmed Saleh** |
| **15:00** | **15:15** | 3D fibrin co-culture of human monocytes and mesenchymal stem/stromal cells induces a prorepair phenotype that enhances chondrogenesis | **Dr. Mohammad Nasser Alkhrayef** |
| **15:15** | **15:30** | Awarding Ceremony and Conference Closing Remarks | **Dr. Leen Abu Safieh** |

19th Annual Research

# Pre-Conference Workshop Schedule

## (December 24, 2024)

| Tuesday, 24/12/2024 | | | | | |
|---|---|---|---|---|---|
| **Workshop Topic** | **Time** | **Location** | **Moderator** | **Speakers** | **Titles** |
| **Questionnaire Design Workshop** | Morning **10:00** AM - **01:00** PM | Mohammad Bin Abdulaziz Hospital | **Dr. Raghda Al-Farhan** | | • Research quality in health and social science surveys.<br>• Validity and reliability in a questionnaire.<br>• Open ended Vs closed ended questions/ Qualitative Vs Quantitative Data.<br>• How to use qualitative data and mixed method in a questionnaire Survey.<br>• How to measure attitudes & use Lickert Scale. |
| **Academic Research Integrity** | Afternoon **1:00** PM- **3:00** PM | | **Dr. Nawal AlShammari** | **Dr. Muaawia Ahmed Hamza** | Academic integrity at the age of AI |
| | | | | **Amani AbuShaheen** | Predatory Publications |

**Register Here :**

# Conference Posters

| Poster Number | Poster Title | Researcher Name |
|---|---|---|
| 24-001 | REDUCING THE PREVALENCE OF HOSPITAL ACQUIRED PRESSURE ULCERS IN INTENSIVE CARE UNIT | Mukhtar Saleh Albuhumud |
| 24-002 | Prevalence of depression and anxiety in palliative care patients | Dr. Abdullah Alsuhail |
| 24-005 | Effect of premature luteinizing hormone surge on pregnancy outcomes in intracytoplasmic sperm injection or in-vitro fertilization cycles | Dr. Dania AlJaroudi |
| 24-006 | No Touch Hysteroscopic Vaginal Septum Resection OHVIRA Syndrome | Dr. Dania AlJaroudi |
| 24-008 | The Knowledge, Awareness, Perception, and Barriers of Human Papillomavirus (HPV)vaccine: A Cross-Sectional Study Among Healthcare Workers in King Fahd Medical City, Riyadh, Saudi Arabia | Najd Fawaz AlNojaidi |
| 24-009 | The relationship between internet addiction (IA) and sleep disturbance among Health Science University students at Riyadh, SA: a cross-sectional Study | Meshal Zuraie |
| 24-010 | Evaluating Kirschner Wire Fixation Versus Titanium Plating and Screws for Unstable Phalangeal Fractures: A Systematic Review and Meta-Analysis of Postoperative Outcomes | Taif Fawaz AlNojaidi |
| 24-012 | Assessing Telehealth in Palliative Care: Effectiveness and Challenges in Rural and Underserved Areas. A Systematic Review | Kamal Yousef K. Gazal |
| 24-013 | Promoting Speak Up Among Pediatric Intensive Care Team During Interdisciplinary Patient Care Rounding | Abdulrazaq Khaled Alanazi |
| 24-014 | Palliative Care in Saudi Arabia An Update Assessment Following 2030 Reform | Aziza Abdullah Barnawi |
| 24-016 | Palliative care pathway expansion in Riyadh Second Health Cluster hospitals | Aziza Abdullah Barnawi |
| 24-018 | Knowledge and awareness about human papilloma virus infection and its vaccination among college students in Alqassim university | Hanna Alhusaini |
| 24-019 | Exploring The Dynamics: Postpartum VTE Prophylaxis Between Guidelines Recommendations and the Prescribing Pattern, a mixed method approach | Mohammad M. Fetyani |
| 24-021 | BIOELECTRONIC NEUROMODULATION OF THE RENAL NERVES AS A NOVEL THERAPEUTIC MODALITY FOR HYPERTENSION TREATMENT: A LITERATURE REVIEW | Ghaith Khalid Mansour |
| 24-022 | Knowledge, Barriers and Facilitators of Oncofertility Among Oncology Nurses in Saudi Arabia | Issam AlFayyad |
| 24-023 | Prevalence of Common Respiratory Viruses in Children at A Tertiary Care Hospital in Saudi Arabia | Dr.Ahmad M. Saleh |
| 24-024 | Primary Cardiac Angiosarcoma | Khalid A. Alqarni |
| 24-025 | Effectiveness of Online Training Approach on Intervention for In-Hospital Stroke Codes in Saudi Arabia on the knowledge of Emergency Nurses | Alanoud K. Alsaffi |
| 24-026 | Exploring the lived experience of Arab male patients on intermittent catheterization after spinal cord injury: A phenomenological study | Yacoub S. Abuzied |
| 24-027 | In Vitro Oncogenic Effects of Glycated Albumin in Human Colorectal Cancer Cell lines HT29 and SW620 Revealing EpCAM and Galectin-3 Upregulation in Type 2 Diabetic Colorectal Cancer Tissues as Potential Biomarkers | Haitham Alkadi |
| 24-028 | Evolutionary analysis of LMP-1 genetic diversity in EBV-associated nasopharyngeal carcinoma: Bioinformatic insights into oncogenic potential | Abdullah Alenazi |
| 24-029 | ENHANCED PHARMACY SERVICE DELIVERY THROUGH HEALTH INFORMATICS INTEGRATION AS COMPARATIVE STUDY OF A SAUDI TERTIARY CARE HOSPITAL, IN RIYADH | Sarah Mabrouk G. AlEnizi |
| 24-030 | Point-of-Care Ultrasound in the Diagnosis of Active Hemorrhage within Intramuscular Hematoma | Ahlam Alfahmi |
| 24-031 | Contraindication and insufficient Response to Triptans among neurology clinic patients in Saudi Arabia: is there a place for new G-pants? A retrospective survey-based study | Leena H. Saeed |
| 24-032 | Intrathyroidal metastatic carcinoma from the breast | Dr. Hanadi A. Fatani |
| 24-034 | Tocolytic and Potentially Teratogenic Effects of Atosiban Acetate and Celecoxib in Pregnant Rats | Amirah Saleh H Almuhaylib |
| 24-035 | Fitness Applications and Wearables Use Among Young Saudi | Sarah Alhedaithy |
| 24-036 | Lead Screening in Children and Its Association with The Behavioral Problems in KSA | Hadel Alsaran |

# Conference Posters

| Poster Number | Poster Title | Researcher Name |
|---|---|---|
| 24-037 | Multi-Epitope Vaccine Design Against Human Respiratory Syncytial Virus Using Computational Means: A Study to Determine Immunogenicity, Antigenicity, Allergenicity, and Toxicity of Vaccine Construct | Hadeel Al Najran |
| 24-038 | Burnout Combating Strategies and the Contributing Factors Among Multinational Nurses in Saudi Arabia: A Multicenter, Mixed Methods Study | Abeer M. Alshedoukhi |
| 24-039 | Development and Validation of a Workflow Instrument to Evaluate the Success of Electronic Health Records Implementation from a Nursing Perspective: An Exploratory and Descriptive Study | Abeer M. Alshedoukhi |
| 24-040 | Obstacles and Challenges Affecting the Sustainability of Quality Indicators in a Complex, Tertiary Emergency Center | Abeer M. Alshedoukhi |
| 24-041 | Remodeling Sepsis Management in the Emergency Department by Adapting the Sepsis Tracking Process into EMR and Triggering an "Active Alert-Code Sepsis" | Abeer M. Alshedoukhi |
| 24-042 | Nurses' Views and Attitudes of the Performance Appraisal System Efficacy and Its Impact on Their Work Outcomes in a Tertiary Hospital: A Cross-Sectional Study | Abeer M. Alshedoukhi |
| 24-043 | Measuring the Effect of Clinical Workflows on the Quality and Safety of Nurses' Practice During the Transition from a Paper-based to Electronic-based Documentation: An Exploratory Study. | Abeer M. Alshedoukhi |
| 24-045 | Effective Usage of Supportive Courses in Healthcare Vocational Training Programs | Hilalah F. Alturkistani |
| 24-047 | Epidemiological Characteristics and Outcome of Open Globe Injuries in Saudi Arabia: Retrospective Cohort Study | Moustafa Magliyah |
| 24-048 | Transition to Ophthalmology Residency Program and the Role of Basic Science | Moustafa Magliyah |
| 24-049 | CO2 laser therapy for management of stress urinary incontinence in women: a systematic review and meta-analysis | Saeed Bardwan |
| 24-051 | The effects of low-dose aspirin on preterm birth: a systematic review and meta-analysis of randomized controlled trials | Saeed Bardwan |
| 24-052 | Prognostic Implication of t(1;19) in Pediatric Pre-B Acute Lymphoblastic Leukemia: A Nationwide Study | Ibrahim Sandoqjy |
| 24-053 | The Significance of Glaucoma Screening In Children Diagnosed with Singleton-Merten Syndrome. | Bayan Almasoudi |
| 24-055 | Personalized Medicine in the Genomic Era: Prospects and Challenges | Dr. Khaled Abu Amero |
| 24-056 | Impact of Two Distinct Cardiopulmonary Resuscitation (CPR) Learning Methods of Traditional and Blended on the Participants' Knowledge and Practice: An Interventional Study | Abeer M. Alshedoukhi |
| 24-057 | Association between the expression of toll-like receptors, cytokines, and homeostatic chemokines in SARS-CoV-2 infection and COVID-19 severity | BASHAYER Saeed |
| 24-059 | Comprehensive Transcriptome Analysis Reveals the Distinct Gene Expression Patterns of Tumor Microenvironment in HPV-Associated and HPV-Non-Associated Tonsillar Squamous Cell Carcinoma | Reham Alahmadi |
| 24-060 | The role of TBK1 mutations in amyotrophic lateral sclerosis and frontotemporal dementia | ALAA OSAMA |
| 24-061 | Benralizumab in the Treatment of Hyper-Eosinophilic Syndrome: A Case Series | Yahya Omar Asiri |
| 24-062 | DECORTICATION FOR ISOLATED IGG4-RELATED PLEURAL DISEASE: A CASE REPORT AND LITERATURE REVIEW | Yahya Omar Asiri |
| 24-063 | Outcomes of Post-Transplant Cyclophosphamide Prophylaxis in Matched Sibling Donor Allogeneic Hematopoietic Cell Transplant: A Retrospective Study at a Single Tertiary Center in Saudi Arabia | Alaa E. Hassan |
| 24-064 | Mutations at the conserved N-Terminal of the human Rhinovirus capsid gene VP4, and their impact on the immune response | Dr.Maaweya Awad Alla |
| 24-065 | Prevalence of Depressive Symptoms among children and Adolescent with Type 1 Diabetes. A cross-sectional study | Lamia Mutahar Almutahar |
| 24-066 | Moderately Low Effectiveness of the Influenza Quadrivalent Vaccine: Potential Mismatch between Circulating Strains and Vaccine Strains | Hala Alrawi |
| 24-067 | Sarcopenic obesity is a significant predictor of impaired respiratory function outcomes in adults: a systematic review and meta-analysis. | Tasneem Baabbad |
| 24-068 | Allogeneic CAR-T cell for T cell leukaemia | Hala Aldahshan |

# Conference Posters

| Poster Number | Poster Title | Researcher Name |
|---|---|---|
| 24-069 | Investigating Mitochondrial Gene Methylation as a Biomarker for Autism Spectrum Disorder | Noor Alaizari |
| 24-070 | Advancing Secondary Prevention in Stroke Patients through Telemedicine: A Comprehensive Updated Systematic Review and Meta-Analysis | Farah Alanazi |
| 24-071 | Prevalence, Clinical Characteristics and Determinants of Unsuccessful Treatment Outcomes Among Pulmonary Tuberculosis Patients: A 5-Year Registry-Based Retrospective Cohort Study | May Alanazi |
| 24-072 | Antimesenteric sleeve tapering enteroplasty with end-to-end anastomosis versus primary end–to–side anastomosis in the management of jejunalileal atresia | Mohammad Gharieb Khirallah |
| 24-073 | Delayed vs. early enteral feeding after repair of congenital recto-vestibular fistula The effect on perineal wound healing | Mohammad Gharieb Khirallah |
| 24-075 | Laparoscopic management of gastric trichobezoar in children a case series study | Mohammad Khirallah |
| 24-077 | Factors Influencing Critical Care Nurses' Intentions to Use Physical Restraints in an Acute Health Care Setting | Diana Selvamony Lalithabai |
| 24-078 | LIQUID BIOPSY: TOWARD A BETTER CANCER MANAGEMENT | MIRNA ASSOUM |
| 24-082 | Pediatric CSVT: Characterization of underlying etiologies, Neuroimaging, and Treatment Response. A two Center study | Saad G. Alghaneem |
| 24-084 | The Utilization of the Mean Platelet Volume to Platelet Count Ratio for the Detection of Colorectal Cancer | Atheer Abdullah Alsaleh |
| 24-085 | Evaluation of The Effectiveness and Outcomes of Implementing Outpatient Parenteral Antimicrobial Therapy in A Tertiary Hospital in Saudi Arabia: A retrospective single center study. | Abdullah Hamad Alasmar AlAnaz |
| 24-086 | The Burden of Bronchiolitis Post COVID-19 Pandemic in children less than 2 years 2021- 2023:Experience from a tertiary center in Saudi Arabia | Rawan Mohammed A. AlRashed |
| 24-087 | Cytotoxicity of Roundup® and Its Constituents on Human Skin Cells: Insights from Crystal Violet and MTT Assays | Reema Khalid Alhawas |
| 24-088 | Abstract -Assessment Of Muscle Strength, Physical Performance and Health Related Quality of Life in Post Covid-19 Syndrome | Salwa Humedi |
| 24-089 | Evaluating the Accuracy and Reliability of ChatGPT 4 in Providing Recommendations for Clinical Case Scenarios Based on IDSA and ESCMID infectious Disease Guidelines | Rana Imad Tleyjeh |
| 24-091 | Assessing disparities in medical students'knowledge and attitude about monkeypox: a cross-sectional study of 27 countries | Amjad fahid |
| 24-092 | Therapeutic Potential of Adenium obesum Compounds in Colorectal Cancer | Wafaa Agala |
| 24-093 | De Novo and Recurrent NF1 Mutations in Saudi Neurofibromatosis Type 1 | Najlaa Filimban |
| 24-094 | efficacy, safety and outcomes of Micropulse Cyclophotocoagulation (MP-CPC) with that of Ultrasound Cyclo-Plasty (UCP) in a tertiary eye center in Riyadh, Saudi Arabia | Abdulrahman AlAsqah |
| 24-095 | Motor and Autonomic Health with Neuromodulation and exercise with individuals with Spinal Cord Injury: A study Protocol for RCT | Dr. Abdullah A. Alrashidi |
| 24-096 | Evaluating Peroral Endoscopic Myotomy (POEM) Outcome Based on The Eckardt Symptom Score in patient with Achalasia | Abdullah Mohammed Bawazir |
| 24-097 | Coexisting autoimmune disorders among patients with inflammatory bowel disease at a tertiary care center in Riyadh | Abdullah Bawazir |
| 24-098 | Prevalence of Antibody Formation among Patients with IBD Using Anti-TNF Medication | Abdullah Bawazir |
| 24-100 | Evaluating Awareness of Diabetes Mellitus Complications Among Type 2 Diabetes Patients in Saudi Arabia: Findings from a Descriptive Study | Ghadeer Hassounah |
| 24-101 | Appropriate Use of Vancomycin in a Cardiac Surgical Unit | Dr. Sanaa Mekdad |
| 24-102 | Clinical implications and clinical Considerations of linac conversion to electron | Majed Mousili |
| 24-103 | Evaluation of Early Amniotomy in labor induction | Dalia Damor |
| 24-104 | Effects of Parental, Third/Second- Hand Hookah Smoking on Children's Respiratory Health in Saudi Arabia. | Renad Almutairi |
| 24-105 | A Review of Medication Errors Related to Antidepressants use Reported to the General Department of Pharmaceutical Care of the Ministry of Health of Saudi Arabia Between 2020 and 2022: A Descriptive Study | Amjad Alshehri |

# Oral presentation Abstracts

## Day 1

### Title: Humoral and Cellular Immune Durability of Different COVID-19 Vaccine Platforms Following Homologous/Heterologous Boosters: One-Year Post Vaccination

**Presenter: Dr. Maaweya Elaeed Hamed Awad Alla**

**Abstract:** The durability of Hybrid immunity induced by natural infection and/or COVID-19 vaccines and evidence supporting further booster vaccination are crucial factors for pandemic response yet remain poorly understood. Here, we measured the durability of immune response and neutralizing capacity of antibodies following Homologous/Heterologous vaccination by mRNA-based vaccines (Pfizer-BioNTech BNT162b2) or (Moderna mRNA-1273) and viral vector-based vaccines (ChAdox1 nCoV-19-Oxford-AstraZeneca) in infected and non-infected patients. We also evaluated the long-lasting specific humoral IgG levels and T-cell immunity of the Memory CD8 cells. We compared the two groups and found that the heterologous prime boosters induced significantly higher IgG antibody levels )9.09( compared to their homologous counterparts )5.236) at one-year post-vaccination. We measured SARS-CoV-2 anti-S IgG antibodies and then assessed their neutralizing capacity to inhibit the receptor-binding domain (RBD) of the SARS-CoV-2 wild-type strain and omicron B.1.1.529/ BA.2 variants from binding to the ACE2 receptors. The heterologous regiment demonstrated superior ACE2-binding inhibition and consistently had higher mean ACE2-receptor binding inhibition across all dose regimens without the need for further doses. The CD8+ T cells producing IFN-γ to various COVID-19 vaccine dose regimens were evaluated. We found that robust T cell mediated immune responses were preserved and largely induced by a heterogeneous vaccination eliciting a significantly higher CD8+ T cells IFN-γ response in 100% of vaccinees regardless of previous natural infection. Indeed, the difference between infected and naïve groups was less pronounced suggesting a reduced infection-related response. Overall, across three layers of evidence, the clinical significance of this study identified that heterologous vaccination would result in a renewed durability that endures for a longer time than the period of immunity conferred by homologous doses regardless of previous natural infection.

### Title: A 10 year long-lived cellular and humoral MERS-CoV immunity cross-recognizing the Wild-type and Variants of SARS-CoV-2

**Presenter: Dr. Bandar Alosaimi**

**Abstract:** The Middle East respiratory syndrome (MERS) is a respiratory disease caused by the highly pathogenic MERS coronavirus with 35% mortality rate. Since it was discovered in Saudi Arabia in 2012, the country has experienced multiple outbreaks of MERS-CoV. Saudi accounts for most of the MERS cases with more than 83% of total cases. It is not known how long the immune responses last, how effective MERS-CoV memory humoral and cellular immunity, and whether MERS-CoV memory immunity can cross-react and neutralize SARS-CoV-2. It is, therefore, important to study the long-term persistence of MERS-CoV humoral and cellular immunity over 10 years post-infection and explore the potential for cross-reactive immune response to SARS-CoV-2. This study investigates the long-lasting cellular and humoral immunity against MERS-CoV and its potential cross-recognition of SARS-CoV-2 and its variants. We conducted a comprehensive study involving two cohorts of individuals with a history of MERS-CoV

(with or without COVID-19 vaccination) spanning 10 years. We assessed the persistence of IgG antibodies, memory CD4+ and CD8+ T cells specific to MERS-CoV, and their cross-reactivity against different variants of SARS-CoV-2. Additionally, we examined the neutralizing antibodies against different strains of MERS-CoV. Our findings reveal a remarkable longevity of cellular and humoral immunity against MERS-CoV. MERS-CoV-specific cellular and humoral memory immunity were detected a decade after infection. Importantly, this immunity exhibited cross-recognition of SARS-CoV-2 and its variants, suggesting a potential one-way cross-protection from MERS-CoV towards SARS-CoV-2. Furthermore, we found that MERS-CoV survivors vaccinated against SARS-CoV-2 had significantly higher anti-MERS IgG, cellular immune response and neutralization than unvaccinated survivors. MERS-CoV immune responses can persist for a decade. Our findings indicate that the COVID-19 vaccination boosted and reshaped the long-term humoral and cellular immune memory established from the MERS-CoV infection. Our findings may have significant implications for the development of a pan-coronavirus vaccine.

## Title: Three-year experience in genetic screening and prevention of primary congenital glaucoma (PCG) in Saudi Arabia: early results from a pilot program at King Khaled Eye Specialist Hospital (KKESH)


## Presenter: Dr. Manal Alwazae



**Abstract:** Purpose: The incidence of PCG is among the highest globally and 80% are attributed to CYP1B1 mutations. We describe our experience with a pilot genetic screening program in index patients (IC) with CYP1B1 variants and their relatives, followed by counseling to reduce the disease burden in the Kingdom of Saudi Arabia (KSA). The project's key long-term goal is the reduction of new PCG cases at KKESH, monitored through a PCG database. Methods: The program recruited PCG patients seeking care at KKESH. Index patients were screened for the CYP1B1 variants using Sanger sequencing for 14 variants. The parents, CYP1B1 patients above 18, and relatives who were CYP1B1 carriers were counseled, with follow-up spouse testing planned. Other counseling included premarital testing and preimplantation genetic diagnosis if needed. Results: We recruited 409 ICs to date, of which 64% were from central and southern KSA. Of these, 220 (58%) were of marriageable age (>18 years old), and 59 (15.6%) had a history of parental consanguinity. Also, 114 (30.1%) ICs came from families with more than one affected individual. The majority of IC were CYP1B1 variants (n= 325; 79.5%). The p.Gly61Glu variant was the most common variant (n= 266; 65%). A total of 247/ 314 potential carriers from 234 families were genotyped. About 211 (67%) were heterozygous for the CYP1B1 variant, and 36 were homozygous. To date, 3 families with IC were referred for PGD and 23 spouses were tested for carrier status. Conclusion: Preliminary results of this pilot program suggest that the high rates of mutation in a single gene with limited variants will make a larger national program cost-effective. Also, family locations in specific KSA regions call for a focused national screening and counseling program. The program's early results on counseling rates and acceptance outcomes are encouraging and offer justification for its nationwide expansion through targeted screening and counseling. There were 20% non-CYP1B1 patients, the genetic basis of which needs exploration.

## Title: Genetic screening and counselling for families with Primary Congenital Glaucoma (PCG): Three years of experience at King Khaled Eye Specialist Hospital (KKESH) in Saudi Arabia

### Presenter: Dr. Areej Alizary

**Abstract:** Purpose: The incidence of PCG in Saudi Arabia is among the highest globally. This study describes our initial experience with a pilot genetic screening and counselling for Primary Congenital Glaucoma (PCG) as a public health intervention initiative in Saudi Arabia, targeting index patients and relatives. Notably, 75% of patients with PCG in Saudi Arabia were previously found to have mutations in the CYP1B1 gene. Design: In this pilot cross-sectional study conducted at KKESH, index patients and their families were screened for the common pathogenic variants in CYP1B1 using Sanger sequencing. The patients and carriers were then offered a counseling for PCG. During counselling sessions, we evaluated the first 100 patients' comprehension of genetic concepts, attitudes to counselling and prenatal genetic screening. Results: A total of 388 index cases with PCG were tested for the CYP1B1 variants. Out of the total, 306 (78.9%) patients had CYP1B1 variants, including 284 who were homozygous and 22 who were compound heterozygous. Additionally, 13 cases were heterozygous and 82 (21.1%) had no CYP1B1 variants. Among the 288 relatives tested, 190 (66%) were identified as carriers. While most participants understood the implications of autosomal recessive diseases such as PCG, one-third 33 (33%) struggled with the concept of the recurrent risk, which triggered the creation of an informative and educational brochure. The majority (98%) were in favour of the premarital genetic testing, and all participants endorsed genetic counselling for families with a history of affected family member(s). However, only 61% of the parents agreed to prenatal genetic screening, while the remainder were hesitant citing concerns of potential grief and religious consideration, if they had to terminate a pregnancy. Patients who were negative for the common CYP1B1 gene variants will be tested for other variants in known or candidate PCG-associated genes. Conclusion: This pilot study confirms the high prevalence of CYP1B1 variants in PCG patients in the Kingdom, describes the high carrier rate in relatives and the high rate of acceptance of genetic counseling. These findings suggests that the "genetic testing and counselling approach" for prevention of PCG is feasible, acceptable, and clinically useful for patients and their families, and may lead to preventive measures to reduce disease burden in future generations. The result from this model also suggests that this approach might be helpful for developing similar prevention programs for other ophthalmic genetic diseases.

## Title: Dual Activation of TMEM16A and TRPV4 by Eact as Potential Therapeutic Target for Cystic Fibrosis

### Presenter: Dr. Razan Orfali

**Abstract:** Cystic fibrosis (CF) is a chronic, progressive, and often fatal genetic disease primarily affecting the respiratory systems of children. The loss of CFTR function in CF results in airway surface dehydration and impaired mucociliary clearance. While no cure exists for CF, several treatments can alleviate symptoms and slow disease progression. This study examines EACT, a compound with the potential to offer a novel therapeutic approach for CF .EACT is known to activate TMEM16A, a calcium-activated chloride channel (CaCC). Recent findings indicate that EACT also activates the $Ca^{2+}$-permeable TRPV4 channel, which is essential for mucociliary clearance in ciliated epithelia and has multiple effects on CF pathogenesis. Our research aims to characterize the binding of EACT at the TRPV4 and TMEM16A channels using molecular docking simulations .The binding energy for TRPV4 with EACT was -6.9 kcal/mol, compared to -6.3 kcal/mol for TMEM16A with EACT, indicating comparable binding affinities. The dual activation of EACT, targeting both TMEM16A and TRPV4 channels, presents a promising "2-in-1"

therapeutic approach for CF treatment. This study provides new insights into the therapeutic potential of EACT, highlighting its dual mechanism of action as a significant step toward developing more effective treatments for cystic fibrosis.

## Title: A novel homozygous splice site variant in the CLCN7 causes Osteopetrosis

## Presenter: Dr. Zeinab Mohamed Klaab

**Abstract:** Objectives: Osteopetrosis is a monogenic disorder characterized by defective osteoclast resorption or osteoclast differentiation. Clinical symptoms include dense but brittle bones, recurrent fractures, thrombocytopenia, impaired immune function, optic nerve compression, and anemia. Several osteopetrosis-causing genes have been identified. Methods: This study describes two consanguineous Saudi families affected by severe autosomal recessive osteopetrosis. In family A, one proband (II-2), and in family B, two probands (II-2 and II-4), exhibited increased bone density, multiple fractures, teeth abnormalities, bilateral optic atrophy with nystagmus, and progressive blindness. DNA from the affected individuals underwent whole-exome sequencing (WES) and Sanger sequencing. Additionally, reverse transcriptase-polymerase chain reaction (RT-PCR) and western blot analyses were performed to investigate the effects of the identified mutation. Results: WES revealed a novel homozygous splice site variant (c.739-18G>A) in the *CLCN7* gene on chromosome 16p13.3, which co-segregated with the disease phenotype. RT-PCR showed retention of a 50bp sequence of intron 8 in the mutated sequence, resulting in a larger exon 9 compared to the wild type. Western blot analysis demonstrated that the heteromeric form of ClC-7 disappeared in the patients' fibroblasts compared to the control, confirming the pathogenicity of the variant. Conclusion: This study provides strong evidence that homozygous variants in the *CLCN7* gene are responsible for severe osteopetrosis with variable phenotypes. These findings have significant implications for clinical therapeutic decisions, prognosis, and antenatal diagnosis.

## Title: The Outcome of Intra-Operative Chest Tube Insertion in Esophageal Atresia Patients

## Presenter: Dr. Yasir Alrashdan

**Abstract:** Introduction: Traditionally, during esophageal atresia (EA) repair procedures, a prophylactic intraoperative chest tube (IOCT) is placed near the anastomosis to drain fluids and air via a one-way channel. However, the necessity of routinely utilizing prophylactic IOCTs is currently being debated. This study aims to critically evaluate the outcomes of IOCT insertion in patients undergoing surgery for EA at a tertiary care center. Methods: It must be detailed enough to judge the validity of the work. For most clinical research abstracts, the following areas are specifically mentioned: research design; research setting; number of patients enrolled in the study and how they were selected; a description of the intervention (if appropriate); and a listing of the outcome variables and how they were measured. Finally, the statistical methods used to analyze the data are described. Based on our review of the pediatric surgery department census, we estimate that the number of charts will be reviewed falls between 70 – 90 charts. We will adopt a convenience sampling technique to include all patietns who met our crateria
Results: This study involving 41 patients with EA highlights several key factors influencing surgical outcomes and complications. The predominant EA type was Type C, with many patients having cardiovascular anomalies. Most surgeries were one-stage and open, with a higher risk of postoperative leaks associated with two-stage surgeries. The findings of our study highlight that chest tube insertion did not significantly affect intraoperative complications (7.1% vs. 7.1%, p = 1.000), postoperative complications (35.5% vs. 42.9%, p = 1.000), or leak rates (10.7% vs. 33.3%, p = 0.422). Moreover, chest

tube insertion had no significant impact on surgical outcomes or complications. Pre-definitive surgery was strongly linked to postoperative complications, and a larger gap length between esophageal segments increased the risk of complications. Conclusion: These findings underscore the importance of surgical approach and preoperative factors in determining outcomes while indicating that chest tube insertion does not significantly impact these outcomes. Future research should include larger, multi-center studies to validate these findings across diverse settings and explore alternative management strategies.

## Title: 'Transanal Endorectal Pull-through vs Duhamel Surgery in The Management of Hirschsprung Disease: A Retrospective Study'


## Presenter: Dr. Mohammad Abdulatef Halawani



**Abstract**: Introduction: Congenital aganglionic megacolon also known as Hirschsprung disease (HD) is a congenital condition in which there is absence of ganglion cells in both the submucosal and myenteric plexuses of the distal intestine, leading to formation of a rigid aganglionic segment of the colon which subsequently leads to functional obstruction. The most commonly used surgical procedures are transanal endorectal pull-through (TERPT) and Duhamel procedure. Our study will be comparing the two most common surgical procedures to treat Hirschsprung disease, that makes the results of the study significant in choosing the procedure with minimal complications to the patients. This study aims to compare between transanal endorectal pull-through procedure and Duhamel procedure in the management of patients with Hirschsprung disease during the past ten years at King Fahad Medical City, Riyadh, Saudi Arabia. Materials and Methods: Study Design: Retrospective Study. Study Setting and duration of study: At King Fahad Medical City (KFMC) in Riyadh, Saudi Arabia, in the past ten years (from 2012-2022).
Study subjects/participants: Pediatric patients with Hirschsprung disease who underwent transanal endorectal pull-through procedure or Duhamel procedure. Inclusion Criteria: Pediatric patients with Hirschsprung disease who underwent transanal endorectal pull-through procedure or Duhamel procedure at King Fahad Medical City (KFMC) in Riyadh, Saudi Arabia, in the past ten years (from 2012-2022). Exclusion Criteria: Patients with incomplete medical records or those who failed to follow up for more than a year will be excluded. Medical records will be reviewed for the patient's demographics (age, gender, nationality), age of diagnosis and extent of the disease, details of the procedure (type of procedure, age at the time of operation, duration, preoperative colostomy), outcomes and complications (fecal incontinence/soiling, constipation, enterocolitis, anastomotic stricture, leak, or others), and duration of hospital stay.


## Title: Hybrid Mathieu Urethroplasty vs.Tubularized Incised Plate Urethroplasty for the Management of Distal Penile Hypospadias With a Small Glans


## Presenter: Dr. Mohammad Gharieb Khirallah



**Abstract:** Introduction: Distal hypospadias is a common anomaly. Different surgical techniques have evolved through the years to manage this anomaly. Several factors may affect the prognosis. One of them is glans size. We compared the hybrid Mathieu urethroplasty (HMU) and the tubularized incised plate urethroplasty (TIPU) for the management of distal hypospadias with a small glans. Methods: Sixty-eight patients with distal hypospadias were included and categorized into two groups. Group A ( n = 33) and group B ( n = 35) patients were treated by HMU and TIPU, respectively. All patients had a small glans. In group A, the patients underwent Mathieu urethroplasty plus a deep incision of the urethral plate. In group B, the patients underwent TIPU. Urethral stents were used in all cases. Hypospadias objective

score evaluation (HOSE) was used to assess the results. Results: Urethrocutaneous fistulae developed in two cases in group A and six cases in group B. Meatal stenosis was significantly lower (one case in group A vs. eight cases in group B). Glanular dehiscence occurred in two cases in group A and five cases in group B. The small glans strongly correlated with the development of both urethrocutaneous fistulae and meatal stenosis where the odd ratios were 3.500 (1.383–7.879) and 9.481 (1.114–12.669), respectively. Conclusion: Both techniques showed efficacy during management of patients with a small glans. HMU had better outcomes, shorter duration of stent and lesser incidence of complications than TIPU. Small glans was significantly related to urethrocutaneous fistulae and meatal stenosis in group B.

## Title: Efficacy and cost-effectiveness of 3D Printed Assistive devices for rehabilitation hospital beneficiaries

**Presenter: Dr. Walaa Alammar**

**Abstract:** Background: 3D printing offers personalized, cost-effective assistive devices that enhance rehabilitation outcomes. This study evaluates the impact of 3D-printed devices on patient independence, focusing on eating, grooming, lower body dressing, toileting, and wheelchair mobility. Method: Thirty-three participants in a rehabilitation hospital received custom 3D-printed devices. Pre- and post intervention functional independence measure was conducted, and a paired sample t-test was used to analyze the data. Result: The analysis showed significant improvement in participants' functional independence ($t = -8.7$, $p = 0.001$) following the use of 3D-printed devices. Conclusion: 3D-printed assistive devices significantly enhance patient independence in key activities of daily living, supporting their integration into rehabilitation practices.

## Title: Peri-Kasai portoenterostomy sutures anchoring the jejunal loop to Glisson capsule: A novel modification to reduce the incidence of cholangitis

**Presenter: Dr. Mohammad Gharieb Khirallah**

**Abstract:** Background: Kasai portoenterostomy (KPE) is the standard surgical management for biliary atresia (BA). To improve the outcome these infants were operated on within the first two months of life. The success of the procedure is reflected by clearance of jaundice and either absence or occurrence of fewer attacks of cholangitis. The failure of the procedure indicates liver transplantation (LT). Objective to reduce the incidence of the recurrent attacks of cholangitis by peri-KPE sutures anchoring the jejunal loop to the Glisson capsule. Methods: It is a retrospective study that included 45 infants diagnosed with BA and who were operated on at an age younger than 60 days. They were categorized into two groups, Group A (n = 23) included infants treated with the classic KPE, and Group B (n = 22) included infants treated in the same way plus peri KPE sutures anchoring the jejunal loop to the Glisson capsule. Results: The mean operative time in Group A was 149.3 min versus 164.8 min in Group B (p-value 0.039). The mean level of bilirubin was 2.2 versus 2.1 in Group A and Group B respectively at two years follow up. The total attacks of cholangitis per patient were significantly lower in Group B than in Group A (cutoff value = 3), which was reflected by the significant reduction of the incidence of LT in Group B. Conclusion: peri KPE sutures anchoring the jejunal loop to the Glisson capsule significantly reduced the incidence of recurrent attacks of cholangitis and subsequently decreased the requirement of LT on the short-term follow-up.

# Day 2

## Title: Changes in consummatory behavior (liking) after liraglutide treatment in adult people with obesity

### Presenter: Dr. Najla Alorayyidh

**Abstract:** Introduction: Bariatric surgery alters sweetness perception, but the impact of liraglutide treatment on taste and therefore consummatory behavior liking remains unknown. This study aims to explore how liraglutide influences liking behavior in adult people with obesity. Method: This is a prospective cohort study nested from a clinical trial that studies the impact of lirglutide. A total of 19 people with obesity underwent daily subcutaneous liraglutide administration, with gradual escalation to a maximum of 3 mg following prescribed guidelines. Taste reactivity test, involving the ingestion of complex chocolate stimuli, were conducted at three key points: baseline, 12 weeks, and after 52 weeks. Visual analog scales were employed to subjectively measure taste changes before and after the ingestion of the stimuli. Facial expressions were captured via camera during the experiment and analyzed to identify hedonic aversive reactions. Results: All 19 participants completed the study, showing significant weight loss (12.8 ± 9.4 kgs, 11%) and body mass changes (3.77 ± 2.03 kg/m2, $P < 0.001$). Nausea increased significantly before the taste reactivity test at all three visits ($P < 0.001$). Hunger difference before and after ingestion was observed in the third visit ($P < 0.01$). Negative reactions, turning off stimuli, were reported by 45% and 63% participants in the second and third visits respectively ($P < 0.05$). Conclusion: This study demonstrates that liraglutid significantly influences liking behavior in adult people with obesity. The observed alterations in sweet/high dense stimuli perception suggest clinical implications for managing obesity through liraglutide treatment.

## Title: Efficacy of Arabic Carbohydrate Counting /Bolus Calculator Mobile Application on Glycaemia Control among Type 1 diabetes subjects

### Presenter: Dr. Sara Albabtain

**Abstract**: Background/Aim: Type 1 diabetes mellitus (T1DM) is a common disorder in young adults that requires lifelong insulin administration. Accurate insulin bolusing requires advanced knowledge of carbohydrate counting and correction doses.. This study aimed to evaluate the effectiveness and safety of an Arabic carbohydrate counting and bolus calculator (CHOC-BC) smartphone application in adults with T1DM. Methods: A 12-weeks randomized controlled trial was conducted at King Fahad Medical City, Riyadh, Saudi Arabia. Participants with T1DM using multiple insulin injection and Libre flash glucose monitor were randomly assigned to either the CHOC-BC application group (n = 64) or the control group (n = 63) to continue conventional treatment. The primary end point was time in range (TIR) (70 to 180 mg/dl). The secondary end points were time above range (TAR) (180 and 250 mg/dl), coefficient of variation (CV) as indicator of glucose variability, HbA1c and time below range (TBR) of 70 mg/dl, body weight as safety outcomes. Additionally, a validated Arabic Diabetes Treatment Satisfaction Questioner (DTSQ) was administered before and after application use in the intervention group. Results: 127 participants (70 female and 57 male) were recruited with mean age was the intervention is 26.56 ± 4.8 and control 26.74 ± 6.52. After 3 months follow up, CHOC-BC application users had better TIR compared to those in control group (51.20 ± 11.61% vs. 46.17 ± 13.02%, mean difference (MD) 5.03; 95% CI, 0.70 to 9.36, $p = 0.023$). Furthermore, application users showed a significant reduction in time above 250 mg/dl (17.25 ± 11.61% vs. 24.10 ± 15.74%, MD -6.85; 95% CI, -11.70 to -1.99, $p = 0.006$). CV was better in CHOC-BC application group compared to controls (39.83 ± 5.50% vs 41.94 ± 5.78%, respectively;

p=0.037) and HbA1c levels did not differ significantly between groups ($p > 0.05$). Additionally, time spent in hypoglycemia and body weight were not significantly different between both groups assuring the safety of the application. Finally, DTSQs scores showed significantly greater satisfaction after the application used. Conclusion: The Arabic CHOC-BC mobile application was associated with better glycemia control and lower variability without increasing the risk of hypoglycemia and weight gain.

## Title: Investigation of the Effects of Support Matrices on the Structure and Folding of G6PD Enzymes from G6PD-deficient Patients

### Presenter: Dr. Muawiyah Ahmad H. Ahmed

**Abstract:** Background: Glucose-6-phosphate dehydrogenase (G6PD) deficiency is the most common X-linked genetic disorder which renders individual carriers susceptible to intravascular haemolysis after ingestion of many environmental triggers inducing fava beans and some anti-malarial drugs. The inherited defect of metabolism, was discovered first in exposed soldier from the US Army to primaquine an anti-malaria drug. To date, more than 186 mutations were reported causing this disease and diagnosis of G6PD deficiency includes qualitative and quantitative enzymatic assays and DNA-based PCR analysis. Objective: To compare between two quantitative methods used for measuring G6PD activity. Methods: The present comparative study done in the outpatient clinics of the Children's Specialised Hospital, King Fahad Medical City, Riyadh, Saudi Arabia. Two different quantitative methods were employed to measure G6PD activities in30 subjects with established G6PD deficiency and compared with 16 healthy controls. Enzyme activities dried blood spots (DBS) on filter papers and liquid format were assessed using with the quantitative G6PD kit from Trinity Biotech (Cat. No. 345-B; Trinity Biotech PLC, Bray, Ireland). DNA samples were extracted and were Sanger sequenced to establish the type of mutation. Results: Enzymatic activities were significantly different on fresh blood samples and those from DBS, specifically the mean activity of G6PD readings recorded in subjects with G6PDMed (Mean difference = -0.68, $p = 0.003$) and control group (mean difference= 6.48, $p < 0.001$). Sequencing results revealed that Mediterranean variant G6PDMed with a S188F substitution was the predominant mutation in half of the G6PD-deficient participants, followed by the G6PDAures(25%) and the rest were less frequent mutations namely, A-, Hamburg, Chatham and Riley. Conclusion: In conclusion, the present study suggests that the use of DBS to measure G6PD activity may likely result in false negative in persons with G6PDMed variant, but these findings need to be confirmed using a larger sample size.

## Title: Evaluation of Treatment Parameters for Focused-Extracorporeal Shockwave Therapy in Knee Osteoarthritis Related Bone Marrow Lesion

### Presenter: Dr. Hani Alabbad

**Abstract**: Objectives: To evaluate the effect of different dosage parameters of focused-extracorporeal shockwave therapy on pain and physical function in knee osteoarthritis patients with bone marrow lesions. In addition, to investigate pathophysiological changes based on imaging and biomarker measures. Methods: Using a single-case experimental design, a total of 12 participants were randomly allocated in 4 equal groups of 3 to receive different dosages of focused-extracorporeal shock wave therapy. Each group received either 4 or 6 sessions of 1500 or 3000 shocks over 4 or 6 weekly sessions. Participants underwent repeated measurements during the baseline, intervention, and post-intervention phases for Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score, aggregated locomotor function score and pressure pain threshold. Imaging and inflammatory biomarker outcomes

were measured at baseline and 3 months following the intervention. Results: The group receiving the highest dosage of focused-extracorporeal shock wave therapy showed clinical improvements superior to those of participants in the other 3 groups. Statistically significant changes during the follow-up phase in contrast to baseline measurements for the WOMAC score (Tau-U= –0.88, $p < 0.001$), aggregated locomotor function score (Tau-U= –0.77, $p = 0.002$), and pressure pain threshold (Tau-U= 0.54, $p = 0.03$) were observed. Bone marrow lesion and inflammatory cytokines demonstrated no change. Conclusion: A dose-dependent effect for focused-extracorporeal shock wave therapy on osteoarthritis related symptoms was suggested. However, these improvements were not associated with changes in the underlying pathophysiological mechanisms.

## Title: Calcium versus cabergoline for prevention of ovarian hyperstimulation syndrome: a systematic review and meta-analysis

### Presenter: Dr. Saeed Marzoq Baradwan

**Abstract:** Aim: To conduct the first-ever systematic review and meta-analysis evaluating calcium infusion versus cabergoline in preventing ovarian hyperstimulation syndrome (OHSS) among high-risk women undergoing assisted reproductive technology. Methods: Six databases were screened from inception until April 1st, 2024. The included randomized and non-randomized controlled studies were checked for quality assessment. The endpoints included the severity of OHSS and select pregnancy-related outcomes. The endpoints were summarized as risk ratio (RR) and 95% confidence interval (CI) in a random-effects model. Results: Six studies were analyzed, comprising 1,687 patients (calcium group=828 and cabergoline group=859). The quality of studies varied and comprised low and high risk in two and four studies, respectively. There was no significant difference between both groups regarding the rates of the overall (n=5, RR=0.65, 95% CI [0.39, 1.07], p=0.09), mild (n=4, RR=1.05, 95% CI [0.59, 1.89], p=0.86), moderate (n=5, RR=0.41, 95% CI [0.15, 1.08], p=0.07), and severe (n=6, RR=0.36, 95% CI [0.11, 1.22], p=0.1) cases of OHSS. Leave-one-out sensitivity analysis of an outlier study revealed that calcium significantly reduced the occurrence of severe OHSS compared with cabergoline (n=5, RR=0.16, 95% CI [0.09, 0.43], p<0.001, Higgins I2=0%). There was no significant difference between both groups regarding the rates of clinical pregnancy (n=4, RR=0.97, 95% CI [0.88, 1.07], p=0.57), ongoing pregnancy, live birth, and spontaneous abortion (all Higgins I2<50%). Conclusion: Both agents yielded similar pregnancy-related outcomes. However, calcium infusion could potentially be more effective than cabergoline in reducing the rate of severe OHSS. Additional high-quality and well-controlled are essential to draw firm conclusions.

## Title: A Study to Assess the Depressive Symptoms and Burden Among Caregiver of Adult Cancer Patients at KFMC, Riyadh, Saudi Arabia

### Presenter: Dr. Razan Ahmad Aljudibi

**Abstract:** Background: Family caregivers (FCs) of cancer patients often suffer from impaired quality of life (QOL) due to increase in stress level from the added responsibility of caregiving. Stress level varies depends on cancer patient condition and caregiver personal responsibility. Most research on such QOL impairments was conducted in Western populations. Thus, sought to study in Middle East Region.
Patients and Methods: This study examines depressive symptoms and burden among family caregivers (FCs) of adult cancer patients in Saudi Arabia, focusing on the quality-of-life impacts assessed using the Caregiver Quality of Life Index-Cancer (CQoLC) questionnaire. Results: We recruited 145 FCs, with 127

meeting the inclusion criteria. The results reveal that most patients were female (67.3%), while most FCs were male (63.5%). Patients predominantly had breast and head & neck cancers, with 58.7% diagnosed within last year. Radical treatment was prevalent (90.3%), with a median radiotherapy dose of 50 Gy. The CQoLC scores indicate moderate psychological distress and daily life disruption among FCs, with significant financial concerns noted. Breast cancer diagnosis and radiotherapy intensity were crucial factors affecting CQoLC scores, suggesting a strong link between cancer type, treatment, and caregiver burden. Interestingly, spirituality showed a positive correlation with patient age, hinting at potential cultural or contextual influences on coping mechanisms. Our findings underscore the need for targeted interventions to support FCs, emphasizing mental health support and financial assistance to alleviate the multifaceted burdens faced by caregivers. This study provides valuable insights into the caregiver experience in a Saudi Arabian context, contributing to the global discourse on cancer care and caregiver support. Conclusion: The findings of this study highlighted possible areas in which support can be provided for family caregivers of cancer patients. There is need to do larger population to understand and to develop support group for this area.

## Title: A Rare Case of Herpes Simplex Meningoencephalitis and Seronegative Cerebral Toxoplasmosis Co-Infection in a Pregnant Saudi Woman


## Presenter: Dr. Razan Almasuood



**Abstract:** Case Description: A 39-year-old female patient, 29 weeks gestational age, presented with a rapid onset of progressive neurological symptoms, including fever, altered mental status, and seizures. Initially diagnosed with Herpes Simplex Virus (HSV) meningoencephalitis, she was administered intravenous acyclovir, the standard therapeutic regimen for this viral infection. Despite antiviral intervention, the patient experienced recurrent exacerbations, and subsequent imaging studies revealed the emergence of new intracranial lesions, raising concerns regarding an underlying multifactorial pathology. A comprehensive diagnostic evaluation was conducted, which included routine serological assays for a range of infectious agents. However, these tests returned negative results for Toxoplasma gondii and other relevant pathogens. Given the persistence and deterioration of her clinical condition, the clinical team pursued advanced diagnostic modalities, including metagenomic sequencing of cerebral tissue samples. This innovative approach elucidated the presence of Toxoplasma gondii, despite the initial serological negativity, indicating a case of seronegative cerebral toxoplasmosis, which is particularly prevalent in immunocompromised individuals or during significant physiological changes associated with pregnancy. Upon confirming the diagnosis, the patient was treated with Trimethoprim/Sulfamethoxazole, an effective antimicrobial agent for toxoplasmosis. The treatment yielded a favorable response, resulting in clinical stabilization. Due to concerns regarding both maternal and fetal safety, the patient underwent a cesarean section, which facilitated the successful delivery of a healthy infant. Postpartum, both mother and child were reported to be in stable condition, with no congenital anomalies noted. This case underscores the imperative for a thorough and proactive diagnostic approach in complex neurological presentations, particularly in pregnant populations. It highlights the necessity of employing advanced diagnostic techniques such as metagenomic sequencing when traditional serological assessments yield inconclusive results. Furthermore, this case emphasizes the potential risks associated with opportunistic infections during pregnancy and the importance of a multidisciplinary approach to optimize outcomes for both the mother and the neonate.

## Title: Live Births After Vaginal Progesterone Cyclogest Suppository Versus Crinone Gel for Luteal Phase Support (LPS)

### Presenter: Dr. Dania Aljaroudi

Abstract: Background: Progesterone is a crucial hormone for the establishment and support of early pregnancy. It is available for LPS in different routes: vaginal, Intra-Muscular Progesterone (IMP), Subcutaneous (SC) injection, oral, and rectal. During the FET process, the corpus luteum does not form naturally due to the absence of ovulation. There is a knowledge gap in the literature concerning the difference in the outcomes of Vaginal Progesterone Cyclogest Suppository vs. Crinone Gel as LPS in FET in either Blastocyst Cleavage stage embryos. Objective: To compare the clinical outcomes between vaginal progesterone Cyclogest suppository and Crinone vaginal progesterone gel as LPS in frozen-thawed embryo transfer in Intra-Cytoplasmic Sperm Injection (ICSI) cycles. The investigated outcomes are Pregnancy Rate, Live Birth Rate, and Miscarriage Rates. Methods: Data were obtained from the Reproductive Endocrine and Infertility Medicine Department (REIMD) at King Fahad Medical City, Riyadh Second Health Cluster from the Electronic Patient Information Chart (EPIC) and Health Information Management (HIM) electronic databases from January 2022 to December 2022. 283 women who had frozen-thawed embryo transfer were reviewed. The patients were divided into two groups based on the route of progesterone administration used as LPS. When the endometrial thickness reached ≥ 8 mm, vaginal progesterone Cyclogest® (LDCollins, UK) 400 mg/twice daily suppository was administered in one group; in another group, vaginal progesterone Crinone® (Merck Serono, Germany) 8% 90 mg daily was administrated until a positive pregnancy test was confirmed. This was continued for 10–12 weeks after embryo transfer when fetal heart activity was detected by ultrasonography. Results: The patients' characteristics in the two groups were matched and there was no significant difference. The biochemical and clinical pregnancy, miscarriage, and live birth rates were similar—4.7% vs. 2.7%, p = 0.464; 26.1% vs. 23.3%, p = 0.638; 13.3% vs. 9.6%, p = 0.410; 15.6% vs. 16.4%, p = 0.872, respectively; there was no statistically significant difference between the vaginal progesterone Cyclogest group and the Crinone progesterone group. Conclusion: Clinical pregnancy, biochemical pregnancy, miscarriage, and live birth rates were similar between both groups. Moreover, vaginal progesterone Cyclogest and Crinone 8% gel are equally effective in providing support during the luteal phase for both blastocysts and cleavage-stage embryos in CET.

## Title: Effect of mixed gonadotropins on pregnancy rate in comparison to mono gonadotropin in antagonist protocol ICSI cycles' stimulation

### Presenter: Dr. Hind Aldabal

**Abstract:** Background: Intracytoplasmic sperm injection (ICSI) is a cornerstone procedure within assisted reproductive technologies (ART). The choice of gonadotropins for ovarian stimulation, whether mixed or mono, is pivotal in this process. The nuances of how different gonadotropin types influence outcomes in antagonist protocol ICSI cycles' stimulation are still being explored. Aim: The study endeavored to discern the differential impacts of mono versus mixed gonadotropin administration on the pregnancy rate within antagonist protocol ICSI cycles' stimulation. Methods: A retrospective chart review was undertaken at the Reproductive Endocrinology and Infertility Medicine Department, Women Specialized Hospital, King Fahad Medical City, Riyadh, Saudi Arabia. Data spanning from January to December 2022, pertaining to ICSI cycles, were meticulously analyzed. Results: The average age and BMI for the cohort stood at 34.4 years and 27.8 Kg/m2, respectively. Infertility's primary causative factors were predominantly unexplained (31.7%) and male factor (33.6%). From a clinical vantage point, the lion's share of patients

(97.1%) underwent the antagonist protocol, with a significant segment being administered a combination of rFSH/hMG (45.9%) as their chosen gonadotropin. On average, 6.7 oocytes were harvested, with typically 1.6 embryos being transferred around day three. An encouraging 33.4% from the 595 assessed showcased positive pregnancy outcomes. An in-depth comparison between different FSH drugs revealed Gonal F's preeminence in multiple domains, such as the number of follicles, oocyte retrieval, and the day of embryo transfer. Yet, the pregnancy outcomes differed significantly across the three drug categories in favor of the Gonal F. Conclusion: The study underscores that the choice between mixed and mono gonadotropin for ovarian stimulation in antagonist protocol ICSI cycles doesn't pivotally dictate pregnancy success rates. Nonetheless, Gonal F seems to foster a more robust ovarian response, which, while influential, may not directly translate to enhanced pregnancy outcomes.

## Title: Pap smear screening combined with human papillomavirus (HPV) test in subfertile women

### Presenter: Dr. Ahmed Saleh

**Abstract**: Objective: To compare the frequency of abnormal cervical cytology combined with HPV test in women with infertility versus women without infertility. Materials and Methods: A retrospective case–control study was conducted over a 4-year period from January 2020 to December 2023 for Pap smear data for women presenting to infertility clinics and women presenting to general gynecology clinics. Demographic, current and previous Pap smear result, family history of cancer, previous and current cervical infection including HPV DNA testing and cause of infertility were collected. The age range for both groups was limited between 22 and 44 years. Results: Cervical smear data for a total of 667 patients were available for analysis. cases (n = 254) and controls; (n = 413). There was a statistical significant lower mean age and parity in cases versus controls (P< 0.001). There was statistical significant higher prevalence of positive smear abnormalities in controls versus cases, (31.5% vs 9.8%, P < 0.001). This include higher prevalence of epithelial cell abnormalities (27.8% vs 3.9%, P < 0.001), inflammations and infections (13.8% vs 9.0%, P < 0.001). There were no statistical significant differences between both groups with regard to family history of cancer (0.4% vs 3.9%, P = 0.4). Conclusion: The prevalence of Pap smear abnormalities and HPV infection is less common in sub fertile patients compared to the general gynecology patients.

## Title: 3D fibrin co-culture of human monocytes and mesenchymal stem/stromal cells induces a prorepair phenotype that enhances chondrogenesis

### Presenter: Dr. Mohammad Nasser Alkhrayef

**Abstract:** Objectives: Tissue repair is believed to rely on tissue-resident progenitor cell populations proliferating, migrating, and undergoing differentiation at the site of injury. During these processes, the crosstalk between mesenchymal stromal/stem cells (MSCs) and macrophages has been shown to play a pivotal role. However, the influence of extracellular matrix (ECM) remodelling in this crosstalk, remains elusive. Methods: Human MSCs cultured on tissue culture plastic (TCP) and encased within fibrin in vitro were treated with/without TNFα and IFNγ. Human monocytes were cocultured with untreated/pretreated MSCs on TCP or within fibrin. After seven days, the conditioned media (CM) were collected. Human chondrocytes were exposed to CM in a migration assay. The impact of TGFβ was assessed by adding an inhibitor (TGFβRi). Cell activity was assessed using RT-qPCR and XL-proteinprofiler-array. Results: Previously, we demonstrated that culturing human MSCs within 3D-environments significantly enhances their immunoregulatory activity in response to pro-inflammatory stimuli. In this study, monocytes were co-cultured with MSCs within fibrin, acquiring a distinct M2-like repair

macrophage phenotype in contrast to TCP co-cultures. MSC/macrophage CM characterization using a protein array demonstrated differences in release of several factors, including chemokines, growth factors and ECM components. Chondrocyte migration was significantly reduced in CM from untreated MSC/monocytes co-cultures in fibrin compared to CM of untreated MSCs/monocytes on TCP. This impact on migration was not seen with chondrocytes cultured in CM of monocytes co-cultured with pretreated MSCs in fibrin. The CM of monocytes co-cultured with pretreated MSCs in fibrin up-regulates COL2A1 and SOX9 compared to TCP. Chondrogenesis and migration were TGFβ dependent. Conclusion: MSC/macrophage crosstalk and responsiveness to cytokines are influenced by the ECM environment, which subsequently impacts tissue-resident cell migration and chondrogenesis. The direct effects of ECM on MSC/macrophage secretory phenotype is complemented by the dynamic ECM binding and release of growth factors such as TGFβ.

## Conference Location

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**To learn more about the shuttle timing, contact us at 0539417293**

# Acknowledgment


- ATA PMAH
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