



Keynote Speakers:



Prof. Alex Tonks
Department of Haematology,
Division of Cancer and Genetics
School of Medicine
Cardiff University



Dr. Mohammed Bafaqeh
Consultant Neurosurgery,
National Neuroscience Institute
Neurosurgery, Skull base,
Neurovascular and peripheral
nerve surgery

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Message from the Executive Director of the Research Center

Dear Colleagues,

Dear Valued Guests and Colleagues,

The COVID-19 global pandemic has shown that the benefits of scientific research is not limited to an entity, a city, or a country, but is of great value globally. We have witnessed firsthand during this year, the partnerships and collaborations forged worldwide to conduct scientific research to stop this pandemic. Thus, As the leader of Riyadh's Second Health Cluster Research and the Executive director of the Research Center in KFMC, I would like to thank you for joining us these two days in highlighting scientific progress and showcasing different scientific strides that we have made. We are determined to promote research culture, collaboration, and facilitating the task of conducting scientific research that will ultimately feed into the provision of higher quality healthcare to our patients and benefit the international community.

Sincerely Yours,

Dr. Dania Aljaroudi

Executive Director—Research Center



Welcome Message from Academic and Training Affairs Executive Director

I would like to welcome you all to KFMC Annual Research Symposium which will be hold on November 24-25, 2021.

This endeavor is part of KFMC commitment to continuing professional education. The symposium aims to enhance and focus on latest researches, trends, knowledge and skills, which are of global concerns in this area. This event promises to be high quality practical training to all participants.

I thank the scientific and organizing committee for their efforts to make this event a great success. I would like also to warmly thank our distinguished speakers and researchers for their contributions to make this symposium successful and informative and to our delegates for their participation.

I look forward to see these activates reflect favorably in providing better services, care, and hope to our patients.

Dr. Osama AlShaya

Executive Director of Academic and Training Affairs

Welcome Address

It is an honor and pleasure to welcome all participants and researchers from King Fahad Medical City (KFMC) and Riyadh's Second Health Cluster to the 2021 KFMC Annual Research Symposium. In this annual research event we celebrate our research outcomes and exchange our clinical findings in an enthusiastic environment. The annual research symposium goal is to bring together, a multi-disciplinary group of physicians, scientists, and allied health professionals from KFMC, Riyadh's 2nd Health Cluster, and all over the kingdom to present and exchange break-through ideas and findings relating to the translational clinical research. As part of KFMC mission; *to provide value-based healthcare services empowered by innovation and research*, thus, the theme of this year's symposium will be "**Towards Translational Impact on Clinical Practices**". Hence, the symposium will focus on the translational potential of research presented in this symposium that can be translated into clinical practices at KFMC and worldwide.

The KFMC annual research symposium will be held on the 24th & 25th of November, 2021 virtually via Zoom online platform due to COVID-19 pandemic health restrictions. These two days will be dedicated to cover a wide spectrum of clinical themes related to "Translational Clinical Research". The annual symposium, composed of 7 main research lecture sessions, tackling important topics on oncology, cardiology, COVID-19, clinical pharmacy, neuroscience, and other translational applications as well as 4 specialized workshops. In addition, in this year's symposium, we introduced a new element to the scientific program called: "**Poster Pitch**" a promotional ONE-minute speech to attract the symposium audience to featured posters.

We're looking forward to an excellent symposium with great researchers from different clinical disciplines and sharing new and exciting results in translational clinical research. We hope that you enjoy and actively enrich the discussion sessions with your valuable questions and comments.

Last but not least, we are grateful for all the support we have received, and therefore extend our sincerest thanks to KFMC and Riyadh's Second Health Cluster CEO, CPD Director and Staff, and the RC executive management and staff for their continuous support during our preparation throughout the year.

Chairperson of Organizing Committee

Chairperson of Scientific Committee

Event Director

Dr. Ali AlFaiz

*Chairperson, Automation and IT Support Research
Chairperson, Bioinformatics and Computational Biology*

Organizing Committee

Chairperson

Ms. Hala AlJishi

*Clinical Research Specialist
Automation and IT Support Research Department*

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Dr. Dania AlJaroudi, *Executive Director, Research Center*

Dr. Adnan AlMaghlouth, *Director, Research Services Administration*

Dr. Dayel Al Shahrani, *Executive Director, Clinical Care Excellence*

Dr. Saleh AlRajhi, *Chairperson, Epidemiology and Public Health*

Dr. Nimah I. Alsomali, *Senior Clinical Research Specialist, Neuroscience Research Department*

Ms. Pahima A. Mabandes, *Medical Secretary II*

Keynote Speakers

Professor Alex Tonks

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Division of Cancer and Genetics
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Cardiff University
Heath Park
Cardiff CF14 4XN
E-mail: tonksa@cardiff.ac.uk

Alex Tonks (BSc, PhD, FHEA) is currently a Professor in Haematology, Cardiff University. He obtained his PhD from the University of Wales, UK in 2000 following his studies into lung inflammation and monocyte development. He subsequently moved to the Department of Haematology, School of Medicine, Cardiff University, UK as a post-doctoral research fellow where he investigated the role of RUNX1-ETO in acute myeloid leukaemia (AML) under the mentorship of Prof Darley and Prof Burnett. In 2003 he obtained a lectureship in the Department of Haematology, Cardiff and began to establish his own group investigating molecular abnormalities in AML. More recently (2020), Alex was promoted to full professor following successful Blood Cancer UK funded programmes of research, where he leads a multi-disciplinary and preclinical translational research group focused on abnormalities affecting haematopoietic (blood cell) development.



Through the funding of three consecutive Blood Cancer UK Programme grants, project grants supported by Charities and UKRI, Alex's work has focused on the identification of novel targets, biomarkers, and potential drug targets for the treatment of acute myeloid leukaemia (AML). Alex investigates the role of a number of candidate genes including RUNX1-ETO, metabolic proteins, S100 proteins, Wnt signalling, CD200 and the production of reactive oxygen species (ROS) in leukaemogenesis. Alex is interested in how the process of haematopoietic development in stem and progenitor populations is dysregulated by these genes, proteins and pathways in AML.

In addition to his research, Alex is a strong supporter of postgraduate research (PGR) and development of early career researchers. He is the lead for PGR within the Division of Cancer & Genetics, School of Medicine Cardiff University and is responsible for several aspects of the PhD/MD student life cycle, including monitoring, training, and examinations.

Website

<https://www.cardiff.ac.uk/people/view/126791-tonks-alex>

Twitter

@alex_tonks

DR. MOHAMMED SAEED BAFARQEEH

Consultant Neurosurgery, National Neuroscience Institute

He is an expert and specializes in Neurosurgery, Skull base, Neurovascular, and peripheral nerve surgery.

He graduated Bachelor of Science (Microbiology) from King Saud University, Riyadh, Saudi Arabia. Took Bachelor of Science (Nursing) in George Mason University, Fair Fax, Va, the USA with Honors. Had his Doctorate in Medicine (MD) with the award, from the University of Ottawa, Ontario, Canada. His Residencies in Royal College of Physicians and Surgeon of Canada. Also, he did Research Fellowship in minimally invasive brain surgery. And Fellowship in conventional and complex cranial surgery, the University of Ottawa Neurosurgery Program.



During his studies, he also got awards and honors such as Dean's List (George Mason University, Fair Fax, VA, USA); highest performance award, Surgical block (University of Ottawa, Ottawa, ON, Canada); and the best Resident as a teacher award (University of Ottawa, Ottawa, ON, Canada).

He has memberships on Canadian Neurosurgical Society (CCNS); American Association of Neurological surgery; the European Association of Neurosurgical Societies; the Walter E. Dandy Neurosurgical Society; and Students Working Against Tobacco (SWAT).

Few of his research and publications were (1) The pathogenesis of ankylosing spondylitis (review article) Neurosurgery focus 2008; (2) the diffusion tensor imaging (DTI) guided Transulcul Exoscopic radial corridor approach for the resection of lesions in the sensorimotor area. 2013; and (3) Part I: the challenge of functional preservation: an integrated systems approach using diffusion-weighted, image-guided, Exoscopic-assisted, transulcal radial corridors, Department of Surgery, Division of Neurosurgery, Civic Hospital, Ottawa, Ontario, Canada and Aurora Neuroscience Innovation Institute, Aurora St. Luke's Medical Center, Milwaukee, WI, USA. Innovative Neurosurg. 2015. Part II: the challenge of functional preservation: an integrated systems approach using diffusion-weighted, image-guided, Exoscopic-assisted, transulcal radial corridors, Department of Surgery, Division of Neurosurgery, Civic Hospital, Ottawa, Ontario, Canada and Aurora Neuroscience Innovation Institute, Aurora St. Luke's Medical Center, Milwaukee, WI, USA. Innovative Neurosurg. 2015.

16th KFMC Annual Research Symposium November 24 – 25, 2021

Day 1		Wednesday, 24 November, 2021	
Time		Topics	Speakers
From	To		
7:30	8:00	Registration: https://zoom.us/webinar/register/WN_3FtmQlj6QsizPLIMd_gvAA	
8:00	8:07	Opening Ceremony & Welcome Remarks	Dr. Ali AlFaiz
8:07	8:15	Overview on Research Center Services	Dr. Dania AlJaroudi
8:15	8:23	CRESENT Research Services	Dr. Sawsan AlYousef
8:23	8:30	Research Center Services	Dr. Ali AlFaiz
Session # 1 (Moderator: Dr. Abdullah Alsharm) Theme: (Oncology)			
8:30	9:00	Keynote Speech: Target Discovery in Leukemia: The Road Towards Targeted Therapy	Prof. Alex Tonks
9:00	9:15	TPMT and NUDT15 Genotyping in Children Treated for Acute Leukemia in Saudi Arabia	Dr. Leen Abo Safieh
9:15	9:30	Ion reporter tool for identification of somatic mutations in colorectal cancer Saudi population	Dr. Ebtehal Alsolme
9:30	9:45	The Immune-genetics landscape of brain metastases compared to their primary Tumors in a Saudi population	Dr. Duna H. Barakeh
9:45	9:55	Questions & Discussion	
9:55	10:30	Coffee Break A TERTIARY CENTER IN SAUDI ARABIA	



Session # 2 (Moderator: Dr. Saleh AlRajhi) - Theme: (Cardiology)

10:30	10:32	Poster Pitch # 1: Whole Genome Analysis of 342 adult cases of Obesity and related metabolic disorders in highly consanguineous population: A Saudi Genome Study	Fatimah Alqubaishi
10:32	10:34	Poster Pitch # 2: Obesity and brain function: an MEG study	Vahe Poghosyan
10:35	10:50	Clinical features and outcome of Guillain–Barre syndrome in Saudi Arabia: a multicenter, retrospective study	Dr. Yousef S. Aldughaythir
10:50	11:05	Pressure Measurement in Echocardiography and Correlation with Right Heart Catheterization	Dr. Muhammad Azam Shah
11:05	11:20	Efficacy And Safety Of Mepolizumab In Severe Asthma: Real-Life Experience In A Tertiary Center In Saudi Arabia	Dr. Riyadh O. Al-Lehebi
11:20	11:35	Urinary Coproporphyrins Analysis is a Potential Diagnostic Test of Neonatal-Onset Dubin-Johnson Syndrome: A Diagnostic Algorithm is Proposed	Dr. Abdulrahman Al-Hussaini
11:35	11:50	Early Results of Surgical Atrial Fibrillation Correction with the CryoMaze Procedure in Patients undergoing concomitant cardiac surgery; Single Center Experience KFMC, KSHC	Dr. Ahmed Abdullah Alamri
11:50	12:00	Questions & Discussion	
12:00	13:00	Prayer and Lunch Break	

**Session # 3 (Moderator: Dr. Dayel AlShahran)
Theme: (COVID-19)**

13:00	13:15	Effect of Therapeutic Heparin vs Prophylactic Heparin on Death, Mechanical Ventilation or Intensive Care Unit Admission in Moderately Ill Ward Patients with COVID-19: The RAPID Randomized Clinical Trial	Dr. Mohammed AlSheef
13:15	13:30	Structural Mapping of Mutations in Spike, RdRp and Orf3a Genes of SARS-CoV-2 in Influenza Like Illness (ILI) Patients	Dr. Asif Naeem



13:30	13:45	Tocilizumab Effectiveness in Mechanically Ventilated COVID-19 Patients (T-MVC-19 Study): A Multicenter Retrospective Study with Survival Analysis Using Propensity Score-Based Methods	Ahmed Ali Alrashed
13:45	14:00	Outcome of Early Self-Prone and High Flow Nasal Oxygen Therapy in Patients with COVID-19 Pneumonia	Dr. Baseem T. Daoud
14:00	14:15	Coronavirus Invasive Disease 2019 (COVID-19) in Children: Clinical Characteristics, Laboratory Findings, Management, And Outcome at A Tertiary Care Center in Riyadh, Saudi Arabia, A Prospective Study	Dr. AbdulAziz A. AlMayouf
14:15	14:30	Amplicon and Metagenomic Analysis of Middle East Respiratory Syndrome (MERS) Coronavirus and the Microbiome in Patients with Severe MERS	Dr. Waleed Aljabr
14:30	14:40	Questions & Discussion	
14:40	15:00	Prayer and Coffee Break	
Session # 4 (Moderator: Dr. Abdullah I. Alsuhail) - Theme: (Clinical Pharmacy)			
15:00	15:15	The Role of Clinical Pharmacist Intervention in CDTM to Improve Outcomes and Decrease hospitalization in heart failure clinic	Dr. Sanaa Mekdad
15:15	15:30	Evaluate the Modified SAME-TT2R2 Score to Predict Good Anticoagulation Control with Warfarin Among non-valvular Atrial Fibrillation Patients	Dr. Jude Howaidi; Dr.Filwah AlMarzouq
15:30	15:45	Feasibility of Laparoscopic Sleeve Gastrectomy as a Hybrid Day Care Procedure: Case Series Pilot Study of 53 patients	Dr. Yussuf Alsuhaibani
15:45	16:00	Determination of Aluminum in Neonatal Parenteral Nutrition Solutions by using Inductively Coupled Plasma Mass Spectrometry ICP-MS Technique	Dr.Rania Ahmad Nawawi ; Dr.Nurah AlBanyan
16:00	16:10	Questions & Discussion	



Day 2

Thursday, 25 November, 2021

Time		Topics	Speakers
From	To		
7:30	8:00	Registration: https://zoom.us/webinar/register/WN_3FtmQlj6QsizPLIMd_gvAA	
Session # 5 (Moderator: Dr. Sufana AlMashadi) - Theme: (Neuroscience)			
8:00	8:30	Keynote Speech: Featured Talk in Nuerosurgery	Dr. Mohammed Bafaqeeh
8:30	8:45	A potential new brainstem reflex: The oculoglossal phenomenon	Dr. Arwa S. AlShamekh
8:45	9:00	Amelioration of Levetiracetam-Induced Behavioral Side Effects by Pyridoxine. A Randomized Double Blind Controlled Study	Dr. Sadia Tabassum
9:00	9:15	Minimally Invasive Brain Port Approach for Accessing Deep-Seated Lesions Using Simple Syringe	Dr. Meshari Muteb AlMutairi
9:15	9:30	ATP8P1, ABCB11, and ABCB4 Genes defects in Arabs: New Patients with wide spectrum of presentation, Outcome, and Novel Mutations	Dr. Abdulrahman Al-Hussaini
9:30	9:45	Application of magnetoencephalography in localizing epileptogenic zone and predicting seizure freedom after surgery	Dr. Vahe Poghosyan
9:45	10:00	Factors contributed to delay discharge from Rehabilitation Hospital at King Fahad Medical City, Riyadh	Dr. Bayan Adam Y. Gudal
10:00	10:10	Questions & Discussion	
10:10	10:30	Coffee Break	
Session # 6 (Moderator: Dr. Adnan AlMaghlouth) – Theme: (Clinical Translational Applications)			
10:30	10:32	Poster Pitch # 3: The Safety and Efficacy of Uterine Artery Embolization in the Treatment of Patients with Symptomatic Fibroids, Single Tertiary Hospital Experience	Dr. Abdullah Abdulrahman Muharib



K	10:32	10:34	Poster Pitch # 4: Elevated Expression Levels of Lung Complement Anaphylatoxin, Neutrophil Chemoattractant Chemokine IL-8, and RANTES in MERS-CoV-Infected Patients: Predictive Biomarkers for Disease Severity and Mortality.	Dr. Muawiyah Eleed Awadalla
	10:35	10:50	Evaluation of safety and effectiveness of Trans-arterial Chemo-Embolization for Hepatocellular Carcinoma and liver metastasis Utilizing Novel Radiopaque Bead (LC Bead LUMI™) Loaded with Doxorubicin: A Tertiary Center Experience in Saudi Arabia.	Dr. Radhi Alshehri
	10:50	11:05	The role of Ultrasound in symptomatic breast abnormalities in women at age of 30-year-old and below	Dr. Summer Almutawa
	11:05	11:20	Performance of Pediatric Risk of Mortality III and Pediatric Index of Mortality III Scores in Tertiary PICU in Saudi Arabia	Dr. Ahmad S. Alkhalifah
	11:35	11:50	Outcomes for Nasopharyngeal Cancer Patients Treated with Different Induction Chemotherapy Protocols –Single Institute Experience	Dr. Ali Matar Alzahrani
	11:50	12:00	Questions & Discussion	
	12:00	12:45	Poster Session, Prayer, and Lunch Break	



Session # 7 - Workshops

12:45	14:15	Contemporary practices in translational research	Dr. Muawiyah Ahmed Hamza; Dr. Bandar A. Alosaimi; Dr. Waleed AlJabr; Dr. Ali AlFaiz
		Introduction To Clinical Trials	Dr. Ibrahim Alsubaihi; Mr. Abdulhadi Alqahtani
14:15	15:45	Introduction to MRI Research Facility	Dr. Adnan Al Watban
		A Journey Towards Manuscript Writing	Ms. Amani Abu Shaheen
15:45	16:00	Prayer and Coffee Break	
16:00	16:30	Awarding & Closing Remarks	Ms. Hala AlJishi

Oral Presentations

Day 1

Session # 1

Target Discovery in Leukemia: The Road Towards Targeted Therapy

TPMT AND NUDT15 GENOTYPING IN CHILDREN TREATED FOR ACUTE LEUKEMIA IN SAUDI ARABIA

Leen Abu Safieh, Sara Hussain Nazer, May M. Al Rashed, Lama K. Albatti, Malak Abedalthagafi, Mohammed Waleed Ballourah

Introduction: The most common malignancy in children is Acute lymphoblastic leukemia (ALL) comprising 75% - 80% of acute leukemia occurring in those aged less than 15 years. Despite significant improvements in the treatment outcome, ALL continues to be the foremost cause of death in childhood cancer. In Saudi Arabia, Childhood leukemia represents the highest incidence comparing to other countries in the world for both sexes at ages 0-14 according to Bray et al., 2018. Thiopurine is a widely used effective chemotherapeutic agent in leukemia patients. Thiopurine methyltransferase (TPMT), and Nudix hydrolase (NUDT15) are enzymes that play a crucial role in the metabolism of thiopurine drugs by dephosphorylating the active metabolites of thiopurines, and reducing its cytotoxic effects. Patients with genetic polymorphism in the *TPMT* and *NUDT15* genes may impair the body's ability to metabolize the drug, causing its accumulation that could lead to severe adverse effects such as bone marrow suppression and impaired immunity during treatment with standard doses.

Objectives: Screening for *TPMT*, and *NUDT15* genetic polymorphisms in Saudi ALL patients and performing a haplotype analysis

Methods: a total of 20 Saudi ALL, and AML patients were recruited where Restriction fragment length polymorphism technique (RFLP), and Sanger sequencing were done.

Results: All patients (n=20) included in the study showed the wild type genes and there was not any variation in the genes coding for either TPMT or NUDT15 enzymes.

Conclusion: Designing a treatment based on the genetic background to achieve precision medicine is a challenging task since it is not integrated in the conventional routine care for patients. *TPMT* and *NUDT15* genotyping for patients treated for acute leukemia in Saudi Arabia has to become necessary before starting the treatment plan to improve the therapeutic approach and increase the survival rate for leukemia patients.

Ion reporter tool for identification of somatic mutations in colorectal cancer Saudi population

Introduction: Colorectal cancer (CRC) is a malignant tumor of the colon and rectum, for which no national policy of screening exists, despite its increasing incidence in the Saudi population. Advances in bioinformatics tools and softwares have revolutionized cancer therapy by identifying driver mutations that contribute to cancer development. Further exploration and identification of these mutations and gene rearrangement can aid in cancer diagnosis and guide precision-based therapy for cancer patients.

Materials and Methods: Using oncomine sequencing, we examined solid tumor of SA-CRC patients (n = 200). Saudi ethnic patients from KFMC. DNA & RNA will be extracted, oncomine sequencing protocol



Results: In this study, a total of 70 patients were recruited to date, we are reporting on genome sequencing results. We found genomic variants in many genes related to colorectal cancer. Most of patients have genetics variants in PIK3CA and TP53 which they play an important role of a signaling pathway of cancer. This will produce a list of recommendations for CRC diagnosis and also, provide a platform for the development of bespoke treatment regimens for SA-CRC patients.

Conclusion: The use of Ion reporter tool in clinical practice will benefit the detection, management, and treatment of CRC in SA. We believe our analysis will help in identifying some new, clinically actionable mutations. Our findings will guide optimal treatment regimens and CRC diagnosis.

The Immune-genetics landscape of brain metastases compared to their primary Tumors in a Saudi population.

Introduction: The most common central nervous tumors are metastatic tumors. Metastatic spread to the brain causes a significant drop in survival rates, and it usually occurs in patients with sufficiently controlled extracranial disease. Over half of the patients die within a few months following the diagnosis of brain metastasis.

Methods: We performed Oncomine Panel Next Generation sequencing (161 cancer genes) of 68 matched brain metastases, and primary tumors from multiple institutions in Saudi Arabia. We also performed PD-L1 IHC to compare its expressions in paired primary tumors.

Results: We found potentially clinically informative alterations in the brain metastases not detected in the matched primary-tumor sample. Rate of PD-L1 positivity varies by metastatic location. Decisions for individualized therapies in patients with brain metastasis are often made from primary-tumor biopsies. We demonstrate that clinically actionable alterations present in brain metastases are frequently not detected in primary biopsies, suggesting that sequencing of primary biopsies alone may miss a substantial number of opportunities for targeted therapy.

Session # 2

(POSTER) Whole Genome Analysis of 342 adult cases of Obesity and related metabolic disorders in highly consanguineous population: A Saudi Genome Study

Introduction: Recent advantages of whole genomes or exomes direct sequencing offers the most comprehensive approach for extending discovery efforts to the detection of rare sequence variants with large effects. Coupled with information about human disease and other traits, an unparalleled opportunity currently exists to identify rare coding variants within genes that cause disease. Metabolic disorders like Obesity, Polycystic and type-2-diabetes (T2D) represent a worldwide epidemic that impose an enormous burden on public health. The Saudi population with one of the highest rate of consanguineous unions and high prevalence of both obesity and /or T2D is ideal for identification, through whole-genome sequencing, of homozygous mutations with large effect on obesity and T2D.

Materials and Methods: A prospective study conducted at King Fahad Medical City (2019-2021) in Riyadh. All required ethical approval and consents obtained. Patients recruited from Obesity, and endocrinology clinics. DNA from 342 Saudi individuals (265 females and 83 males. Average age is 45-year-old. Average Body Mass Index (BMI) is 37.5) with high prevalence of obesity and/or T2D underwent whole-genome sequenced using illumina platform. 83 of the females also diagnosed with polycystic ovary syndrome (PCOS). Sequence variants called and annotated and screened for homozygous coding mutation that segregate with endocrinological disorders like obesity and/or T2D, PCOS within these patients



Results: Most samples show detectable inbreeding as expected. Average number of homozygous loss-of-function mutations per case is 0.9-1.2. Multiple known/expected pathogenic mutations identified in genes like

ABCC2, UPB1, HRG, FLT4, MSH3, TRAPPC2, CD36, CEL and other. Likely pathogenic variants include: PLIN1, LIPE, PAX4. Homozygous/Hemizygous loss-of-function (LOF: essential splice, frameshift, stop gained) also reported as “Private” for our cohort in multiple novel genes (not in OMIM) like: WDR54, ASB12, USP26, CTAG2, ZXDA, and others.

Conclusion: will be prepared. We identified somatic mutations in coding and non-coding regions, regulatory elements, and non-coding RNA. Mutational data extracted and clustered to reveal a panel of mutations that will be used to classify patients into specific treatment categories. Ion reporter Software analysis enables to create custom reports to link variants to a curated list of relevant labels, guidelines, and global clinical trials.

(POSTER) *Obesity and brain function: an MEG study*

Obesity presents a significant public health problem. Understanding brain mechanisms underlying obesogenic behavior may assist in developing effective weight-loss treatments. Previous neuroimaging studies have shown that food cues, such as advertisements, strongly activate brain’s reward system and induce craving, and that this neural reward activity and associated eating behavior are significantly altered in obesity. However, results of these studies have been inconsistent, and several key questions with important implications remain unresolved. Objectives of the present study were to identify spatiotemporal neural correlates of food image processing in obese and normal-weight individuals, and test the hypotheses that in obese individuals, the abnormal reward system reactivity to food cues occurs automatically and preconsciously, and that long-term personal goals such as losing weight and improving health can modulate this neural reactivity and influence eating behavior.

We recruited 24 patients with obesity, who were prescribed improved diet, and 24 normal-weight controls. Magnetoencephalography (MEG) was used to record brain activity during passive viewing of high-calorie and low-calorie food, and nonfood images. Standard MEG analysis methodology was employed to identify stimulus-evoked brain responses, and statistically contrast (two-tailed independent-samples t-test with false discovery rate corrected at $p < 0.05$) these responses between patients and controls, and between patients who lost weight and patients whose weight did not change

We identified a network of brain regions and their temporal dynamics that showed significant differences between obese and normal-weight individuals. In obese, we found reduced neural activity in response to food cues in brain systems of reward and cognitive control, and enhanced activity in brain regions involved in visual processing and attention. The abnormal hypoactivity in reward system appeared early, during preconscious processing (140 ms post-stimulus). Reduced activity in reward regions and elevated activity in visual and attentional regions were associated with eventual weight loss.

We have for the first time identified the temporal dynamics of neural food-cue reactivity in key brain regions affected in obesity. Our data show that abnormal reward system reactivity in obese individuals appears already in preconscious, automatic stage of information processing, and that this activity can be modulated by long-term personal goals, supporting both our hypotheses.



Clinical features and outcome of Guillain–Barre syndrome in Saudi Arabia: a multicenter, retrospective study

Introduction: Guillain–Barre syndrome (GBS) is an inflammatory polyradiculoneuropathy characterized by rapidly evolving weakness and areflexia, reaching nadir within 4 weeks. Data on the characteristic of GBS in Saudi Arabia are limited. This study aimed to describe the clinical, electrophysiological, and laboratory characteristics and outcome of a multicenter cohort of patients with GBS.

Materials and Methods: This is a retrospective multicenter nationwide study. Patients who had GBS, identified through Brighton Criteria, between January 2015 and December 2019 were included. Data collected included demographics, clinical features, cerebrospinal fluid profile, reported electrophysiological patterns, treatment, and outcome. Reported GBS subtypes were compared using chi-square, Fisher's exact, or Mann–Whitney U tests, as appropriate.

Results: A total of 156 patients with GBS were included (men, 61.5%), with a median age of 38 (interquartile range, 26.25–53.5) years. The most commonly reported antecedent illnesses were upper respiratory tract infection (39.1%) and diarrhea (27.8%). All but two patients (98.7%) had weakness, 64.1% had sensory symptoms, 43.1% had facial diplegia, 33.8% had oropharyngeal weakness, 12.4% had ophthalmoplegia, and 26.3% needed mechanical ventilation. Cytoalbuminological dissociation was observed in 69.1% of the patients.

GBS-specific therapy was administered in 96.8% of the patients, of whom 88.1% had intravenous immunoglobulin, and 11.9% had plasmapheresis. Approximately half of the patients were able to walk independently within 9 months after discharge, and a third regained the ability to walk independently thereafter. Death of one patient was caused by septicemia. Acute inflammatory demyelinating polyradiculoneuropathy was the most commonly reported GBS subtype (37.7%), followed by acute motor axonal neuropathy (29.5%), and acute motor-sensory axonal neuropathy (19.2%).

Conclusion: The clinical and laboratory characteristics and outcome of GBS in the Arab population of Saudi Arabia are similar to the international cohorts. The overall prognosis is favorable.

Pressure Measurement in Echocardiography and Correlation with Right Heart Catheterization

Objective: Echocardiography is helpful in the assessment of pulmonary hemodynamic, however, its correlation with Right heart catheterization (RHC) is conflicting. We conducted a study to evaluate the sensitivity and specificity of pulmonary hemodynamic parameters measured in echocardiography. Furthermore, its correlation with the values measured in RHC was assessed.

Method: Retrospective, cross-sectional study conducted at King Fahad Medical City, Riyadh, Saudi Arabia. 95 adult patients referred for right heart catheterization were enrolled in the study. All the patients had echocardiography and RHC within one week of each other.

Result: Diabetes mellitus, hypertension, and dyslipidemia were present among 55%, 66% and 41% of patients respectively. 85% of the study participants were diagnosed to have pulmonary hypertension and 79% of the study participants had postcapillary pulmonary hypertension. Sensitivity of pulmonary artery systolic pressure (PAPs), mean pulmonary artery pressure (PAPm) using PAPs and pulmonary artery acceleration velocity (PAcT) were 86%, 93%, and 89% respectively. Correlation of PAPs, PAPm using PAPs, and PAcT on echo with invasive hemodynamic in RHC were 0.56, 0.43, and 0.24 respectively. Among patients with moderate to



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severe Tricuspid Regurgitation (TR) and tricuspid annular plane systolic excursion (TAPSE) ≥ 1.5 cm correlation of PAPs, PAPm using PAPs and PAcT on echocardiography with right heart catheterization were 0.31, 0.24, and 0.42 respectively.

Conclusion: Echocardiographic assessment of PAPs and PAPm has high sensitivity and weak to moderate correlation with hemodynamic data in RHC. PAPs measurement on echocardiogram has the best correlation with invasive measurement followed by PAPm measurement using PAPs. Among patients with moderate to severe TR and TAPSE < 1.5 cm PAPm measurement using PAcT has better correlation than using PAPs.

Efficacy and Safety of Mepolizumab in Severe Asthma: Real-Life Experience In A Tertiary Center In Saudi Arabia

Mepolizumab is an anti-IL-5 antibody that has been used to treat severe asthma. Our study aims to evaluate the efficacy and safety of Mepolizumab for the treatment of severe asthma in a real-world severe asthma clinic in a tertiary hospital in Riyadh, Saudi Arabia.

METHODS: We did a chart review on severe asthma patients who were started on Mepolizumab in the past two years. Multiple outcomes were observed which include the rate of annual asthma exacerbation, reduction in Oral Corticosteroids (OCS) dose, and improvement in Asthma Control Test Score (ACT).

RESULTS: 53 severe asthma patients (75% females) were on mepolizumab for the past two years. Mepolizumab was switched to Dupilumab in 4 patients. 3 of them were due to lack of effectiveness and one

was due to significant headache post-injection. The average age was 45 +/- 13. 63.42% of patients were on Mepolizumab for one year or more. At baseline, patients had an average 18.46 Emergency Room (ER) visits due to asthma exacerbations and 12.8 short courses of Prednisone for asthma attacks. Their average ACT was 12 +/- 4.7 at baseline. 83% of patients were uncontrolled at baseline. 42% of patients were on daily OCS at baseline. After 12 months, the average ER visits dropped to 1.35 visits (reduction by 92.6%), and the need for short courses of prednisone was reduced to 2.4 courses (reduction of 81%). At 12 months, 8 patients were off daily steroids (53% of total patients who were of daily steroids at baseline). There was a 36% improvement in ACT score after one year of Mepolizumab (ACT score 17.57) compared to baseline. 42% of patients became controlled after one year of Mepolizumab compared to baseline.

CONCLUSIONS: In this retrospective real-life study, we have shown that Mepolizumab had a significant effect in reducing annual asthma exacerbations. It also helped in reducing daily OCS dose. Overall, Mepolizumab was a safe medication as we only had one patient who had one significant side effect that led to its discontinuation.

Urinary Coproporphyrins Analysis is a Potential Diagnostic Test of Neonatal-Onset Dubin-Johnson Syndrome: A Diagnostic Algorithm is Proposed

Background and Objectives: The reports on neonatal-onset Dubin-Johnson syndrome (DJS) are very few and limited to case reports and small case series. We conducted a case-control study 1) to characterize the clinical, laboratory, and molecular features and outcome of 28 gene-confirmed neonatal-onset DJS, in the largest case



series reported to date, and 2) investigate the utility of the urinary coproporphyrins (CP) I and III ratio (%) as a potential diagnostic biomarker. Based on the findings from our study, we have proposed a diagnostic algorithm to facilitate molecular diagnosis of DJS.

Methods: We retrospectively reviewed our database of 533 cases of neonatal cholestasis (NC) that presented to our center during the period from 2008 until 2019, and identified 28 neonates with a disease-causing variant in ABCC2 gene “Cases”. Another 20 neonates with cholestasis due to non-DJS diagnoses were included as a “control group”. Both groups underwent urinary CP analysis (UCPA) to measure CP isomer 1 %.

Results: Twenty-eight neonates with DJS (15 females) were diagnosed from 22 un-related families out of 533 cases with NC (5.3%). All of the 28 were full-term, well looking neonates without hepatosplenomegaly, with

direct hyperbilirubinemia and normal liver synthetic function since the first week of life that resolved within 3 to 6 months of age, followed by a benign course punctuated by recurrent episodes of jaundice in 43% during a median follow up period of 9.25 (range 2.5 – 14 years). Serum alanine aminotransferase (ALT) levels were

within normal range in 26 patients (92%) and mildly elevated in 2 patients (1.6 and 2 times the upper limit of normal). ALT levels were significantly lower in neonates with DJS than in other cases of NC from other causes ($P < 0.001$) [Figure 1]. The use of normal serum ALT level to predict DJS among neonates with cholestasis had a sensitivity of 93%, specificity = 90%, PPV = 34%, and NPV = 99.5%. The median UCP I % was significantly higher in DJS patients [88%, (IQ1-IQ3 = 84.2% - 92.7%)] than in infants with cholestasis from other causes [67%, (IQ1-IQ3 = 61% - 71.5%; Confidence interval = 0.18 - 0.28; $P < 0.001$) [Figure 2]. The use of UCP I % > 80% to predict DJS among neonates with cholestasis had a sensitivity, specificity, PPV, and NPV of 100% [Figure 2]. We identified 4 homozygous variants in the ABCC2 gene, one was splicing (c.3258+1G>A; p.?) and 3 were missense variants; two of which were novel missense variants [c.1594G>A (p.Glu532Lys); c.2439G>C (p.Lys813Asn)]. The p.Gly758Val variant has occurred in 23 patients (from 19 un-related families) originating from the Central region of Saudi Arabia, suggesting that this variant came from a common ancestor i.e “founder in nature”.

Conclusion: Based on results from our study, we propose sequencing of ABCC2 gene in neonates with normal ALT-cholestasis and UCP1% > 80%.

Title: Early Results of Surgical Atrial Fibrillation Correction with the CryoMaze Procedure in Patients undergoing concomitant cardiac surgery; Single Center Experience KFMC, KSHC

Introduction: Atrial fibrillation (AF) is the most common cardiac arrhythmia and associated with increased risk of morbidity and mortality. The prevalence of AF is increasing worldwide.

Several established options for the treatment of atrial fibrillation (AF) exist but with sub-optimal results. Cox-Maze IV surgery has become the gold standard surgical operation for AF and commonly used around the world.

(CryoMaze) procedure is rapidly emerging as a new therapy option for patients with AF undergoing concomitant cardiac surgery. In this study, we aimed to analyze the contemporary outcomes of the CryoMaze procedure and to examine the short-term outcomes and freedom from AF.

Materials and Methods: Between February 2020 and August 2021, we performed (26) CryoMaze procedures. The contemporary outcomes of the CryoMaze procedure concomitant with other cardiac procedures were analyzed. In-hospital mortality, 30-day mortality and 30-day freedom from atrial fibrillation were also assessed.



Results: The mean age was 50 (± 12) years and 43.3% were female. Mitral valve replacement was the predominant concomitant cardiac surgery in 73% of patient undergoing CryoMaze procedure. There was only one in-hospital death. No in-hospital or 30-day strokes occurred. Median length of stay was 15 days. Survival at 30-day was 96% with overall freedom from AF at 30 days follow up were 87.5%.
Conclusion: The CryoMaze procedure is safe and is associated with excellent short-term freedom from AF

Session # 3

Title: "Effect of Therapeutic Heparin Vs Prophylactic Heparin on Death, Mechanical Ventilation or Intensive Care Unit Admission in Moderately Ill Ward Patients with COVID-19: The RAPID Randomized Clinical Trial

Introduction: Heparin, in addition to its anticoagulant properties, has anti-inflammatory and potential anti-viral effects, and may improve endothelial function in patients with Covid-19. Early initiation of therapeutic heparin could decrease the thrombo-inflammatory process, and reduce the risk of critical illness or death.

Materials and Methods: We randomly assigned moderately ill hospitalized ward patients admitted for Covid-19 with elevated D- dimer level to therapeutic or prophylactic heparin. The primary outcome was a composite

of death, invasive mechanical ventilation, non-invasive mechanical ventilation or ICU admission. Safety outcomes included major bleeding. Analysis was by intention-to-treat.

Results: At 28 days, the primary composite outcome occurred in 37 of 228 patients (16.2%) assigned to therapeutic heparin, and 52 of 237 patients (21.9%) assigned to prophylactic heparin (odds ratio, 0.69; 95% confidence interval [CI], 0.43 to 1.10; $p=0.12$). Four patients (1.8%) assigned to therapeutic heparin died compared with 18 patients (7.6%) assigned to prophylactic heparin (odds ratio, 0.22; 95%-CI, 0.07 to 0.65). The composite of all-cause mortality or any mechanical ventilation occurred in 23 (10.1%) in the therapeutic heparin group and 38 (16.0%) in the prophylactic heparin group (odds ratio, 0.59; 95%- CI, 0.34 to 1.02). Major bleeding occurred in 2 patients (0.9%) with therapeutic heparin and 4 patients (1.7%) with prophylactic heparin (odds ratio, 0.52; 95%-CI, 0.09 to 2.85).

Conclusions: In moderately ill ward patients with Covid-19 and elevated D-dimer level, therapeutic heparin did not significantly reduce the primary outcome but decreased the odds of death at 28 days.

Title: Structural Mapping of Mutations in Spike, RdRp and Orf3a Genes of SARS-CoV-2 in Influenza Like Illness (ILI) Patients

Introduction: In December 2019, the emergence of SARS-CoV-2 virus in China led to a pandemic. Since both Influenza Like Illness (ILI) and COVID-19 case definitions overlap, we re-investigated the ILI cases using PCR for the presence of SARS-CoV-2.

Materials and Methods: We investigated 739 nasopharyngeal swabs collected from November 2019 to March 2020. SARS-CoV-2 RNA was found in 37 samples (5%) collected mostly during February 2020. It was followed by confirmation of evolutionary and spatial relationships using next generation sequencing (NGS).

Results: We observed that the overall incidence of ILI cases during 2019–2020 influenza season was considerably higher than previous years and was gradually replaced with SARS-CoV-2, which indicated a silent transmission among ambulatory patients. Sequencing of representative isolates confirmed independent introductions and silent transmission earlier than previously thought. Evolutionary and spatial analyses revealed clustering in the GH clade, characterized by three amino acid substitutions in spike gene (D614G), RdRp (P323L) and NS3 (Q57H). P323L causes conformational change near nsp8 binding site that might affect virus replication and transcription.



Conclusion: In conclusion, assessment of the community transmission among patients with mild COVID-19 illness, particularly those without epidemiological link for acquiring the virus, is of utmost importance to guide policy makers to optimize public health interventions. The detection of SARS-CoV-2 in ILI cases shows the importance of ILI surveillance systems and warrants its further strengthening to mitigate the ongoing transmission of SARS-CoV-2. The effect of NS3 substitutions on oligomerization or membrane channel function (intra- and extracellular) needs functional validation.

Title: Tocilizumab Effectiveness in Mechanically Ventilated COVID-19 Patients: A Multicenter Retrospective Study Using Propensity Score-Based Methods.

Introduction: The use of interleukin-6 blocker (i.e. tocilizumab) in critically ill patients with coronavirus disease 2019 (Covid-19) who are requiring mechanical ventilation is less well studied. This study attempts to determine the efficacy of tocilizumab in patients with COVID-19 requiring invasive mechanical ventilation. **Method:** This was a multicenter retrospective study conducted in six Saudi Arabian hospitals. Patients admitted between March 2020 to January 2021 were screened. Confirmed COVID-19 mechanically ventilated adult patients (≥ 18 years old) were included. Mortality after mechanical ventilation was the primary outcome and rate of extubation rate was the secondary outcome. To achieve balance in the data, we implemented inverse

propensity score weighting (IPSW) and propensity score matching (PSM) and survival analysis was conducted. In addition, cox proportional model with time dependency covariance was used to account for immortal bias. For secondary outcome, competing risk analysis was implemented where death while intubated was considered as a competing risk.

Results: A total of 889 patients were eligible for inclusion (tocilizumab, $n=193$, control, $n= 263$). The mean age (\pm SD) for tocilizumab arm was $59.3(\pm 14.2)$ and $58.5(\pm 13.7)$ for the control. Adequate balance in covariates of interest was achieved in the IPTW and PSM analyses. In the IPTW analysis, tocilizumab was associated with lower mortality with $HR=0.37(95\%CI 0.55 \text{ to } 0.96, P=0.026)$ but not in the PSM analysis with $HR=0.80(95\%CI 0.57 \text{ to } 1.12, P= 0.192)$. After accounting for immortal time bias both the IPTW ($HR=0.82, 95\%CI \text{ of } 0.62 \text{ to } 1.10, P=0.190$) and the PSM ($HR=0.86, 95\%CI \text{ of } 0.64 \text{ to } 1.16, P=0.349$) analyses showed no difference in overall mortality. Tocilizumab was associated with a higher rate of extubation (33.6%) versus the control arm (11.9%) with subdistributional hazards (SHR)= $3.1(95\%CI 1.86 \text{ to } 5.16, P<0.001)$.

Conclusion: Tocilizumab was not effective in reducing mortality in mechanically ventilated COVID-19 patients. However, a higher extubation rate was observed. A large RCT in this population is needed.

Title: Outcome of Early Self-Prone and High Flow Nasal Oxygen Therapy in Patients with COVID-19 Pneumonia

Introduction: Prone improves oxygenation and outcome in intubated patients with acute respiratory distress syndrome. COVID-19 case reports and series with moderate to severe hypoxemia indicated that awake prone may lead to clinical improvement and better outcome. We describe our experience of the impact of awake self prone (SPP) with high flow nasal oxygen (HFNO) in non-intubated COVID-19 patients on improved oxygenation & survival. We also evaluated other physiological and clinical outcomes associated with this intervention.

Materials and Methods: This is a retrospective study of all patients with COVID-19 pneumonia treated with HFNO and SPP who were admitted from May to July 2020 to ICU at King Fahad Medical City in Riyadh,



Saudi Arabia. Patients with moderate to severe respiratory distress due to COVID-19 pneumonia were included. The primary outcomes were the rate of avoidance of invasive or non-invasive ventilation and death. The secondary outcomes were improvement of oxygen saturation determined by pulse oximetry (SpO₂), reduction in respiratory rate (RR), and/or reduction in heart rate (HR) after at least 30 minutes of HFNO & SPP. The study was approved by the ethics committee

Results: A total of 110 ICU patients received HFNO and SPP during the study period. Thirty-eight were excluded for missing baseline data leaving 72 patients as the basis of this study. The median age was 55 years with male predominance at 86%. The success group had statistically significant lower APACHE II score

(12.47 + 3.34 vs. 16.97 + 8.14, p<0.001), lower ICU-LOS (6.21 + 4.63 vs. 13.19 + 9.44, p<0.001), higher pre and post SpO₂ (90.64 + 4.11 vs. 88.42 + 3.16, p=0.015 and 96.09 + 2.07 vs. 93.22 + 4.03, p<0.001 respectively), and lower pre-(HFNO & SPP) HR (91.03 + 18.24 vs. 99.08 + 12.97, p=0.04). The overall survival rate was much higher in HFNO & SPP successful group (97% vs. 51%, p<0.001)

Conclusion: Early awake HFNO and SPP in COVID-19 patients was associated with improved oxygenation, and survival benefit.

Title: Coronavirus Invasive Disease 2019 (COVID-19) in Children: Clinical Characteristics, Laboratory Findings, Management, And Outcome at A Tertiary Care Center in Riyadh, Saudi Arabia, A Prospective Study

Background: Coronavirus invasive disease 2019 (COVID-19) is responsible for the greatest pandemic worldwide. COVID-19 in children has been the subject of various descriptive publications published around the world but there are some limited studies had reported their clinical features and their outcome in children. We aimed to describe the clinical features and consequences of COVID-19 infection in children and the therapeutic interventions.

Methods: It is a prospective cohort study which we collected 101 patients with confirmed SARS-COV-2 infection with age of 14 years old or less who were admitted to Children Specialized Hospital, a tertiary governmental care hospital, in Riyadh, Saudi Arabia between March 2020 to November 2020. We collected data including demographic data, comorbidities, symptoms, imaging, laboratory, treatments and clinical outcomes of patients with COVID-19.

Results: Of 101 children admitted with a confirmed diagnosis of COVID-19 infection, only 96 were included, of whom 63.8% were ≤3 years, 52.1% male, 56.2% of them had unknown source of infection, and 51% had no comorbidities. Majority of our cases had severe infection (71.88%) as they required oxygen, 10,42% of whom been critical. The most common symptoms were respiratory (98%) and physical sign was fever (49%). High D-Dimer (90.7%) and C-reactive protein (72.09%) were found in most cases. Oxygen (71.88%) was the most common used treatment. Most of the patients were discharged home and fully recovered (97.92%). We reported only two deaths (2.08%).

Conclusion: Our findings showed that majority of the cases presented with severe illness, were less than 3 years old, and infected with unknown source but with favorable outcomes. However, some of the cases been critical and lead to death. Future studies will be crucial in better understanding the disease's spectrum and potential therapy options.



Title: Amplicon and Metagenomics Analysis of Middle East Respiratory Syndrome (MERS) Coronavirus and the Microbiome in Patients with Severe MERS

Abstract: Middle East respiratory syndrome coronavirus (MERS-CoV) is a zoonotic infection that emerged in the Middle East in 2012. Symptoms range from mild to severe and include both respiratory and gastrointestinal illnesses. The virus is mainly present in camel populations with occasional zoonotic spill over into humans. The severity of infection in humans is influenced by numerous factors, and similar to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), underlying health complications can play a major role. Currently, MERS-CoV and SARS-CoV-2 are coincident in the Middle East and thus a rapid way of sequencing MERS-CoV to derive genotype information for molecular epidemiology is needed. Additionally, complicating factors in MERS-CoV infections are coinfections that require clinical management. The ability to rapidly characterize

these infections would be advantageous. To rapidly sequence MERS-CoV, an amplicon-based approach was developed and coupled to Oxford Nanopore long read length sequencing. This and a metagenomic approach were evaluated with clinical samples from patients with MERS. The data illustrated that whole-genome or near-whole-genome information on MERS-CoV could be rapidly obtained. This approach provided data on both consensus genomes and the presence of minor variants, including deletion mutants. The metagenomics analysis provided information of the background microbiome. The advantage of this approach is that insertions and deletions can be identified, which are the major drivers of genotype change in coronaviruses.

Session # 4

Title: The Role of Clinical Pharmacist Intervention in CDTM to Improve Outcomes and Decrease hospitalization in heart failure clinic.

Introduction: Pharmacists play an important role in the Collaborative Drug Therapy Management (CDTM) in the care of patients with heart failure (HF). CDTM allows specialized, dedicated clinical pharmacists to engage in an agreement, formal collaborative practice with physicians.

Our objective: is to study the role of cardiology clinical pharmacist in CDTM in decreasing hospitalization and cost.

Materials and Methods: We studied patients with left ventricular systolic dysfunction in a cluster-randomized selection in tertiary care center. We allocated 296 patients to pharmacist intervention from 1480 patients .

Results: We documented 696 interventions done by cardiology clinical pharmacists with average of intervention 2.4 \ patient with acceptance rate of 86 %, admission after interventions was reduced from 0.79 to 0.24 (p value=0.001).

Conclusion: In heart failure CDTM, clinical pharmacists play an important role in improving medication management, patients 'education and life style modification of the patients which help in improving patients' outcome and help in decreasing hospitalization and cost.



Title: Evaluate the Modified SAME-TT2R2 Score to Predict Good Anticoagulation Control with Warfarin Among non-valvular Atrial Fibrillation Patients

Introduction: The SAME-TT2 R2 Score was developed to identify vitamin K antagonists control outliers before Afib patients started treatment. SAME-TT2 R2 Score was derived and validated using a primarily white Caucasian population to predict TTR. Given that non-Caucasian race already confers 2 points in this score, the SAME-TT2 R2 score requires validation and/or re-calibration in a non-Caucasian population. **Materials and Methods:** We conducted a cohort retrospective study and included all non-valvular AF patients who started on warfarin therapy from January to 2019 until the end of December 2019. Then we calculated the modified SAME-TT2-R2 and SAME-TT2-R2 for all study populations and we correlated the result with patients' TTR. The TTR was calculated through the Rosendaal's method

Results: We had 662 patient using warfarin therapy, among those 662, 60.9% were under cardiology and using it for cardiac indication, and only 18.1% diagnosed to have non-valvular atrial fibrillation. Modified SAME-TT2-R2 has good relation to original SAME-TT2-R2 as showed 75.71% (95% CI. 63.99 to 85.17%), 100% (95% CI. 92.89 to 100%) and 15% (95% CI. 3.21 to 77.95%); accuracy, sensitivity and specificity in relation to SAME-TT2-R2 respectively. In addition to that in this small cohort we found that there is universal relationship between SAME-TT2-R2, Modified SAME-TT2-R2 and TTR; TTR \geq 65% associate with low score (<2) of both SAME-TT2-R2, Modified SAME-TT2-R2

Title: Feasibility of Laparoscopic Sleeve Gastrectomy as a Hybrid Day Care Procedure: Case Series Pilot Study of 53 patients

Introduction: Laparoscopic sleeve gastrectomy (LSG) remains the most commonly performed bariatric procedure traditionally performed as an inpatient procedure. Outpatient LSG is gaining more popularity but the literature is conflicting about its safety. Innovative approaches to improve the access of obese patients to bariatric surgery are needed. In this pilot study, we are proposing an alternative approach to assess the safety and efficacy of conducting laparoscopic sleeve gastrectomy (LSG) for selected cases in Hybrid day-case surgery.

Materials and Methods: Data were collected retrospectively from 53 patients who underwent LSG between June 2017 to September 2020 as a Hybrid day-case approach involving admitting patients in day surgery unit two consecutive days, 18 and 6 hours, respectively. The study outcomes included patients' demographics, clinical characteristics, and the outcome variables, which are conversion to inpatient, visiting the emergency room after discharge and patient satisfaction.

Results: A total of 53 patients were included in the final data analysis. All procedures were primary LSG performed on 40 (75.5%) females and 13 (24.5%) males. The mean age was 36.43 ± 9.15 years. The mean preoperative BMI was 42.93 ± 2.78 . In terms of co-morbidities, the most common comorbidity was type 2 diabetes (28.30%), followed by hypertension (15.09%), bronchial Asthma (1.89%), dyslipidemia (13.21%), hypothyroidism (16.98%), and (7.55%) with non-complicated gall stone. When leaving the postoperative care unit, 98.11% of patients had no complaints or mild pain. One patient (1.89%) visited the ER due to abdominal pain and was managed and discharged with analgesia. Readmission within 24 hours after discharge was never required. One patient (1.89%) developed a stapler site leak two weeks after surgery and was managed successfully with gastric stent. There was no mortality in the series, with high patient and family satisfaction.



Conclusion: Our proposed approach to performing LSG in a hybrid day-case surgery was safe and feasible. Adopting this protocol will improve the utilization of resources while maintaining high levels of patient satisfaction with comparable safety outcomes to current practice.

Title: Determination of Aluminum in Neonatal Parenteral Nutrition Solutions by using Inductively Coupled Plasma Mass Spectrometry ICP-MS Technique

Abstract: Neonatal parenteral nutrition (PN) plays an essential role in the management of sick and growing preterm and term infants. PN has a wide range of applicability and it can be used as the only source of nutrition for infants who cannot be fed or as an adjunct to enteral feeding. Despite this, Aluminum (Al) is a significant contaminant of PN solutions that may cause serious complications in bone mineralization due to the accumulation of Al in tissues including bone, urine, and plasma of infants receiving PN. However, there are no regulations to effectively reduce Al contamination of various PN solutions in Saudi Arabia. Because of the toxic effects of Al and the lack of regulations on this issue, there is a need to monitor the presence of Al in PN solution on a regular base. The aims of this study are to determine Al content in solutions used to compose PN solutions in Saudi Arabia using Inductive Coupled Plasma-Mass Spectrometry (ICP-MS), and to equate our

findings with the FDA recommended aluminum content labelling in order to require manufacturers to measure aluminum content and note this content on the package label.

The objectives of this study are:

- To assess the quantity of Al content of all available products including local products used in the formulation of PN solutions using ICP-MS.
- To show how lack of regulations on the aluminum content of PN solutions can lead to vulnerability of infant patients to Al toxicity.
- To try to find out the least contaminated PN solutions that met the FDA “safe limit” of less than 5 mcg/kg/day of Al.

Samples taken from children’s hospital pharmacy in King Fahad Medical City KFMC with prior approval and to be analyzed were randomly chosen from vials of potassium acetate, sodium chloride, potassium phosphate, sodium acetate, sodium glycerophosphate, potassium chloride, magnesium sulfate, multivitamin solution, trace element, 10% amino acid solution, 20% Smoflipid emulsion, water for injection and 70% dextrose. Besides samples from 3 formulations of PN admixtures identical to the ones routinely prescribed for neonates, with defined patients weights so we can calculate total daily intakes of aluminum according to the volumes routinely prescribed to neonates.

The highest aluminum content was found in potassium phosphate and Calcium gluconate 14140 mcg/L and 469 mcg/L, respectively.

While the total amount of aluminum contained in the ingredients of the PN solution (Admixture-1) prepared for the infant weighing 670 g, the daily aluminum intake

The highest aluminum content was found in potassium phosphate and Calcium gluconate 14140 mcg/L and 469 mcg/L, respectively.

While the total amount of aluminum contained in the ingredients of the PN solution (Admixture-1) prepared for the infant weighing 670 g, the daily aluminum intake with PN was calculated as 778.1 mcg/kg.



Whereas the total amount of aluminum contained in the ingredients of the PN solution (Admixture-2) prepared for the infant weighing 540 g, the daily amount of aluminum intake through PN was calculated as 872.6 mcg/kg.

Furthermore, the total amount of aluminum contained in the ingredients of the PN solution (Admixture-3) prepared for the infant weighing 610 g, the daily amount of aluminum intake through PN was calculated as 709.9 mcg/kg.

Day 2

Session # 5

Title: A potential new brainstem reflex: The oculoglossal phenomenon

Introduction: A synchronized involuntary movement of the tongue to the same side as voluntary movements of the eyes, termed the oculoglossal phenomenon, has been observed. A description of the hypothesized pathway of this phenomenon could guide the development of a rapid clinical evaluation of the long segment of the brainstem and help facilitate further studies to establish a new reflex, if possible. The aim of this study is to describe and propose the simple concept of this pathway/phenomenon, the oculoglossal phenomenon.

Materials and Methods: This is an observational study. Of a newly observe brainstem phenomenon evaluated on a subject at the National Neuroscience Institute in king Fahad Medical City (KFMC), Riyadh, Saudi Arabia. After being observed incidentally in a single patient, 60 participants were tested between January and March 2020 to confirm the presence of the phenomenon. Each subject was instructed to protrude the tongue and then move their eyes horizontally to the side. If the tongue simultaneously and involuntarily moved to the same side as the eyes, the test was deemed confirmatory. A literature review was performed, and possible anatomical pathway was proposed.

Results: The oculoglossal reflex was present in most (50/60, 83.3%) of the subjects. Our proposed pathway begins at the frontal cortex, followed by a projection to the paramedian pontine reticular formation, then to the contralateral medial longitudinal fasciculus and bilaterally to the hypoglossal nuclei.

Conclusion: An accurate description of this phenomenon could lead to additional studies and possibly establishing it as a legitimate reflex, thus conceivably adding a new tool in the neurological examination to evaluate the brainstem's integrity.

Title: Amelioration of Levetiracetam-Induced Behavioral Side Effects by Pyridoxine. A Randomized Double Blind Controlled Study

Introduction: Levetiracetam is a relatively new-generation antiseizure drug approved for the treatment of focal and generalized seizures. Despite its favorable side effect profile and minimal drug-drug interactions,

neuropsychiatric side effects are reported in up to 13% of children. A few case series have suggested that supplementation of pyridoxine may mitigate these side effects, but controlled trials are lacking. To address this issue, a randomized interventional study was carried out in a pediatric tertiary hospital to qualify and quantify the potential beneficial effect of pyridoxine in attenuating the neuropsychiatric side effects of levetiracetam in children.



Materials and Methods: A total of 105 children with epilepsy who were taking levetiracetam (as a monotherapy or an adjunct) who showed behavioral symptoms coinciding with the start of levetiracetam, were included. تمريض الباطن الصحي الثاني
Riyadh General Health Cluster

Patients randomly and blindly received either a therapeutic (pyridoxine group, 46 of 105, 44%) or a homeopathic dose of pyridoxine (placebo, 59 of 105, 56%). A 30-item behavioral checklist was used to qualify and quantify the behavioral side effects at baseline and at different time points following initiation of treatment. Results: Both placebo and pyridoxine groups experienced a statistical reduction in behavioral scores when compared with baseline. Our study indicated that although there was a placebo effect, the improvement in neuropsychiatric symptoms was more prominent in children who received therapeutic doses of pyridoxine. Conclusion: These data provide clinicians with pertinent evidence-based information that suggests that a trial of pyridoxine in patients who experience behavioral side effects due to the use of levetiracetam may avoid unnecessary change of antiseizure medications.

Title: Minimally Invasive Brain Port Approach for Accessing Deep-Seated Lesions Using Simple Syringe.

Introduction: Retraction-related injury is a recognized complication in neurosurgery. Use of tubular retractors that distribute the pressure on brain tissue was introduced to minimize brain injury. We developed a modified technique using a simple plastic syringe with a Foley catheter to achieve atraumatic cannulation in accessing deep lesions.

METHOD: A retrospective pilot study was conducted to assess safety of the syringe transtubular technique for accessing deep lesions as a cost-effective substitute for commercial brain port methods and to identify retraction-related injury using diffusion-weighted magnetic resonance imaging postoperatively. Nine patients were operated on using the syringe technique. Lesions selected were intraparenchymal, deeply located in the supratentorial compartment. Lesions were located in the insula (n [2), thalamus or basal ganglia (n [5), subcortical frontoparietal (n [1) lobe, and right temporal lobe (n [1). Patients with hematomas, intraventricular lesions, superficially located lesions; pediatric patients less than 12 years old; and patients undergoing redo surgeries were excluded.

RESULT: Surgical goals were achieved in 8 patients. Three patients had transient deficits; one patient had significant morbidity, which was diagnosed postoperatively as toxoplasmosis. Diffusion restriction was noted in all patients at the surgical cavity but not in the cannulation path.

Conclusion: Transtubular approaches have a good safety profile and can help achieve surgical goals. Larger studies are needed to compare this approach with other methods, including its effect on hospital stay and survival. The syringe technique is an alternative safe method that can be used in certain neurosurgical centers where commercial tube systems are unavailable.

Title: Urinary Coproporphyrins Analysis is a Potential Diagnostic Test of Neonatal-Onset Dubin-Johnson Syndrome: A Diagnostic Algorithm is Proposed

Background and Objectives: The reports on neonatal-onset Dubin-Johnson syndrome (DJS) are very few and limited to case reports and small case series. We conducted a case-control study 1) to characterize the clinical, laboratory, and molecular features and outcome of 28 gene-confirmed neonatal-onset DJS, in the largest case series reported to date, and 2) investigate the utility of the urinary coproporphyrins (CP) I / (I + III) ratio (%)



as a potential diagnostic biomarker. Based on the findings from our study, we have proposed a diagnostic algorithm to facilitate molecular diagnosis of DJS.

Methods: We retrospectively reviewed our database of 533 cases of neonatal cholestasis (NC) that presented to our center during the period from 2008 until 2019, and identified 28 neonates with a disease-causing variants in ABCC2 gene “Cases”. Another 20 neonates with cholestasis due to non-DJS diagnoses were included as a “control group”. Both groups underwent urinary CP analysis (UCPA) to measure CP isomer 1 %.

Results: Twenty-eight neonates with DJS (15 females) were diagnosed from 22 un-related families out of 533 cases with NC (5.3%). All of the 28 were full-term, well looking neonates without hepatosplenomegaly, with direct hyperbilirubinemia and normal liver synthetic function since the first week of life that resolved within 3 to 6 months of age, followed by a benign course punctuated by recurrent episodes of jaundice in 43% during a median follow up period of 9.25 (range 2.5 – 14 years). Serum alanine aminotransferase (ALT) levels were within normal range in 26 patients (92%) and mildly elevated in 2 patients (1.6 and 2 times the upper limit of normal). ALT levels were significantly lower in neonates with DJS than in other cases of NC from other causes ($P < 0.001$) [Figure 1]. The use of normal serum ALT level to predict DJS among neonates with cholestasis had a sensitivity of 93%, specificity = 90%, PPV = 34%, and NPV = 99.5%. The median UCP I % was significantly higher in DJS patients [88%, (IQ1-IQ3 = 84.2% - 92.7%)] than in infants with cholestasis from other causes [67%, (IQ1-IQ3 = 61% - 71.5%; Confidence interval = 0.18 - 0.28; $P < 0.001$)] [Figure 2]. The use of UCP I % > 80% to predict DJS among neonates with cholestasis had a sensitivity, specificity, PPV, and NPV of 100% [Figure 2]. We identified 4 homozygous variants in the ABCC2 gene, one was splicing (c.3258+1G>A; p.?) and 3 were missense variants; two of which were novel missense variants [c.1594G>A (p.Glu532Lys); c.2439G>C (p.Lys813Asn)]. The p.Gly758Val variant has occurred in 23 patients (from 19 un-related families) originating from the Central region of Saudi Arabia, suggesting that this variant came from a common ancestor i.e “founder in nature”.

Conclusion: Based on results from our study, we propose sequencing of ABCC2 gene in neonates with normal ALT-cholestasis and UCP1% > 80%.

Title: Application of magnetoencephalography in localizing epileptogenic zone and predicting seizure freedom after surgery

Abstract: Favorable outcome of epilepsy surgery depends critically upon selection of appropriate surgical candidates and accurate delineation of epileptogenic zone. Magnetoencephalography (MEG) provide clinically valuable information to these ends. However, the extent of its contribution varies across MEG centers. In this retrospective cohort study, we assess the diagnostic accuracy of the MEG approach used in our center.

We studied 45 surgical patients, with a minimum postsurgical follow-up of 12 months. Seizure outcomes were dichotomized into seizure-free (Engel 1) and not seizure free (Engel 2-4). Neurophysiological data were recorded and analyzed according to clinical MEG practice guidelines established in KFMC. In concordance

analysis, cases were categorized as true positive if MEG localization was concordant with the resection site and patient was seizure-free, false positive if concordant and not seizure-free, true negative if discordant and not seizure-free, and false negative if discordant and seizure-free. We then computed various measures of diagnostic accuracy, including accuracy and diagnostic odds ratio (DOR), and their 95% confidence interval (CI).

Interictal discharges were detected in 34 (76%) patients. Among them, MEG localization was monofocal (one tight cluster of dipoles) in 24 (71%) cases. Monofocal localization predicted postsurgical seizure freedom with



localization was concordant with the surgical resection site (i.e. MEG cluster was completely resected) in 18 patients, 17 (94%) of whom achieved seizure freedom. Localization was discordant in 16 patients, only six (38%) of whom became seizure-free. Resection of MEG focus predicted seizure freedom with an accuracy of 79% (62–91%) and significant DOR of 28.3 (3.0–270.6, p=0.004). Patients with concordant MEG localization had a significantly higher chance of seizure freedom than patients with discordant findings ($\chi^2=12.5$, P = 0.0004).

These results demonstrate the excellent accuracy of our MEG analysis approach in localizing the epileptogenic zone and prognosticating seizure-free outcome. They confirm that MEG is a clinically valuable noninvasive diagnostic modality, and add to the growing evidence supporting its regular utilization in guiding the selection of epilepsy surgery candidates and delineation of the epileptogenic zone.

Title: Factors contributed to delay discharge from Rehabilitation Hospital at King Fahad Medical City, Riyadh

Introduction: The Rehabilitation Hospital is the only ministry of health tertiary care inpatient rehabilitation service in Riyadh. Therefore, it has a very long waiting list. There are limited inpatient and community rehabilitation services as well as long-term facilities in the Kingdom of Saudi Arabia. Delayed discharges have a negative impact on the quality and cost effectiveness of the services. The aims of this study are to identify the clinical conditions and contributing factors that increased length of stay and the actual number of (lost bed days) and their cost.

Materials and Methods: A retrospective study was designed to review delayed discharges between August 2011 till March 2017. Information about the diagnosis, the reasons for extended length of stay and delayed discharges were obtained from Rehabilitation Hospital Bed Utilization Data. Additional demographic and clinical information were extracted from electronic medical records.

Results: Out of 2285 discharges for the study period, 531(23.3%) were delayed (415 males), 54.4% were from Riyadh province. With an average patients' age of 34 years and average duration from onset of the illness to inpatient rehabilitation was 9 months. Cases that exceeded length of stay were from the following conditions: Spinal cord injury (31.6%), traumatic brain injury (27.3%), various neurological condition (22.1%), stroke (19.6%) and 15 (2.8%) were combined SCI and TBI. The primary factors that delayed discharges were medical complications (66.7%), followed by organization factors (15.7%) family factors (8.7%) and external Factors (8.7%).

Furthermore, there were 21,817 lost hospital bed days with estimated cost of 80 million SR, excluding the cost of the of patients waiting in the acute beds to be transfer for rehabilitation.

Conclusion: Nearly 25% of discharges were delayed due to medical reasons. Early rehabilitation and enhancing the discharge process should reduce delayed discharges significantly. The development of long-term care capacity and community and family support will promote timely discharge. The cost of delayed discharges could potentially have provided inpatient rehabilitated for 357 additional patients for that period.

Introduction: Fibroids are the most common gynecological tumors. Surgery remains a first-line treatment of symptomatic uterine fibroids; however, minimally invasive techniques have become more available and popular. Among minimally invasive techniques uterine artery embolization (UAE) is the most well-established uterine preserving treatment.

In our study, we are going to determine its safety by determining what are the complications related to the procedure. Also, we are going to determine its efficacy by assessing the improvement in the imaging findings in the follow up with MRI.

Materials and Methods: It is a retrospective cohort study including all patients who underwent uterine artery embolization for the treatment of symptomatic fibroids at King Fahad Medical City, Riyadh, Saudi Arabia between the period of 1 January 2016 to 1 January 2021. A total of 28 female patients were found. The outcomes included: The dominant fibroid location, volume, presence or absence of infarction, and early and delayed complications.

Results: In this study, the ages of the patients ranged from 32 to 51 years, with an average of 40.7 years. 8 (28%) patients have single fibroid while 20 (72%) patients have multiple fibroids ranging from 2 to more than 10 fibroids. Radial access was used in 8 (28%) patients while the remaining 20 (72%) patients, common femoral access was used. Beads block was the embolizing agent that was used in all patients. Technical success achieved in all patients without immediate complication. Only one patient (3.6%) had progression in the fibroid volume after UAE by 64 % with absence of infarction. The rest of the patients (96.4%) had significant volume reduction with mean of 57.6 (12.6%-99.6%), P value less than 0.001. 95% confidence interval is 69.20663, 207.39051. Post discharge complications seen only in one patient (3.6%) who had postembolization syndrome. No major complications encountered.

Conclusion: UAE is a safe, technically successful and effective treatment for symptomatic fibroids which could be a good alternative for surgery. Selection of patients is important to optimize the benefits.

Title: Elevated Expression Levels of Lung Complement Anaphylatoxin, Neutrophil Chemoattractant Chemokine IL-8, and RANTES in MERS-CoV-Infected Patients: Predictive Biomarkers for Disease Severity and Mortality.

The complement system, a network of highly-regulated proteins, represents a vital part of the innate immune response. Over-activation of the complement system plays an important role in inflammation, tissue damage, and infectious disease severity. The prevalence of MERS-CoV in Saudi Arabia remains significant and cases are still being reported. The role of complement in Middle East Respiratory Syndrome coronavirus (MERS-CoV) pathogenesis and complement-modulating treatment strategies has received limited attention, and studies involving MERS-CoV-infected patients have not been reported. This study offers the first insight into the pulmonary expression profile including seven complement proteins, complement regulatory factors, IL-8, and RANTES in MERS-CoV infected patients without underlying chronic medical conditions. Our results significantly indicate high expression levels of complement anaphylatoxins (C3a and C5a), IL-8, and RANTES in the lungs of MERS-CoV-infected patients. The upregulation of lung complement anaphylatoxins, C5a, and C3a was positively correlated with IL-8, RANTES, and the fatality rate. Our results also showed upregulation of the positive regulatory complement factor P, suggesting positive regulation of the complement during MERS-CoV infection. High levels of lung C5a, C3a, factor P, IL-8, and RANTES may contribute to the immunopathology, disease severity, ARDS development, and a higher fatality rate in MERS-CoV-infected



المدينة الطبية. These findings highlight the potential prognostic utility of C5a, C3a, IL-8, and RANTES as biomarkers for MERS-CoV disease severity and mortality. To further explore the prediction of functional partners (proteins) of highly expressed proteins (C5a, C3a, factor P, IL-8, and RANTES), the computational protein-protein interaction (PPI) network was constructed, and six proteins (hub nodes) were identified.

Title: Evaluation of safety and effectiveness of Trans-arterial Chemo-Embolization for Hepatocellular Carcinoma and liver metastasis Utilizing Novel Radiopaque Bead (LC Bead LUMI™) Loaded with Doxorubicin: A Tertiary Center Experience in Saudi Arabia.

Introduction: HCC the most common primary hepatic malignancy, it accounts for 6.1% of all newly diagnosed malignancies in Saudi Arabia. Multiple treatment options based on the BCLC staging system are used including chemoembolization.

TACE is a method of treatment based on delivery of chemotherapy directly to the tumor by an arterial catheter using Drug-eluting beads loaded with chemotherapy allowing for slow-releasing of chemotherapy from the microspheres to the surrounding tumor cells in a locoregional manner over weeks to induce tumoral necrosis. Materials and Methods: A retrospective cohort study of the first 14 consecutive TACE procedures done for treatment of 14 tumors in 12 patients at the tertiary center at Riyadh in Saudi Arabia, utilizing novel drug-eluting radiopaque beads LC Bead LUMITM, between March 2019 and Jun 2021. The statistical analysis was conducted on SPSS v25 and descriptive analysis was used.

Results: Median age was 71.6 years. 7(58.3%) male and 5(41.6%) female. After 2 months on average follow-up, the complete response was achieved in 8/14 tumors (57.1%) and partial response was in 5/14 (35.7%). 1(7.14%) tumor was stable because the beads was delivered outside the tumor. The total response rate including complete and partial response at 1,3,6 and 12 months follow-up intervals was 85.7%. Local recurrence after complete response was observed in 1/8(12.5%) tumor after 444 days follow-up. Complications of CIRSE Grade II or above are zero. Using more contrast in the embolic mixture by 15ml can reduce the mixture viscosity which allows for distal embolization and avoiding non-targeted proximal embolization.

Conclusion: TACE with LC Bead LUMITM loaded with doxorubicin is safe and effective treatment for HCC and small liver metastasis. Using a more diluted embolic mixture by increasing the contrast volume in the embolic mixture to 10-15mL instead of 5mL can increase the efficiency of super selective embolization and aids in avoiding non-targeted proximal arterial embolization. Local recurrence can occur after complete response by about 12.5%.

Title: The role of Ultrasound in symptomatic breast abnormalities in women at age of 30-year-old and below

Introduction: The commonest breast abnormalities in young women are usually benign, while malignancies are rare in this age group. The first line breast imaging for young women is ultrasound, because of its safety and no risk of radiation exposure. This study is conducted to define the role of ultrasound imaging and breast biopsy in the evaluation of symptomatic breast abnormalities of young women.

Materials and Methods: A retrospective cohort single institution study was conducted on female patients 30 year-old and younger with clinical breast symptoms. Data were retrieved from PACS, Centricity and Esihi systems, in the duration between January 2019 and January 2021. Inclusion criteria were women at the age of

30 year-old and younger presenting with clinical breast symptoms. While exclusion criteria were: Male patients, Pediatric age group, patients with no clinical symptoms for screening, preoperative assessment studies, and ultrasound evaluation after incidental breast finding in other imaging studies like CT scan. The statistical analysis was done using SPSS version 25, and descriptive frequency test was used.

Results: A total of 641 consecutive patients were reviewed. Normal cases (BIRADS1) were 113 (17.73%), Benign cases (BIRADS2) were 100 (15.99%), Probably benign cases (BIRADS3) were 314 (49.29%),

Suspicious cases (BIRADS4) were 106 (16.64%), Highly suspicious cases (BIRADS5) were 5 (0.78%). Patients were presented with clinical symptoms including pain, lump and nipple discharge. There were 454 cases presented with lump, 30 cases were presented with nipple discharge, 104 cases presented with pain., and 53 cases presented with other clinical symptoms. The commonest biopsy proven benign mass was fibroadenoma 125 cases (71.43%). While malignant masses were invasive ductal carcinoma 7 cases (1.09%). Conclusion: Most of breast abnormalities in young women are benign, women at the age of 30-year-old and younger with clinical breast symptoms have 1.09% incidence of malignancy. The role of ultrasound in younger women is important as a first line imaging modality in the diagnosis of symptomatic breast abnormalities.

Title: Performance of Pediatric Risk of Mortality III and Pediatric Index of Mortality III Scores in Tertiary PICU in Saudi Arabia

Introduction: Pediatric Risk of Mortality III (PRISM III) and Pediatric Index of Mortality III (PIM III) are most commonly used Pediatric intensive care unit (PICU) outcome indices. However, indices may over or underestimate patient mortality if applied to different patient populations than the one used to create them. This study aims to assess the performance of PRISM III and PIM III tools in a tertiary PICU in Saudi Arabia and identify factors that led to the observed performance.

Materials and Methods: This is a retrospective, single-center study using data collected from Virtual Pediatric Systems (Los Angeles, CA; <http://www.myvps.org>). All pediatric patients younger than 14 years of age admitted between January 1, 2015, and December 31, 2019, were included in this study. PRISM III and PIM III performance in predicting mortality was compared across different age groups, disease categories and based on resuscitation decision status.

Results: A total of 3396 admissions were included in the study analysis. There was a significant difference between predicted mortality (PRISM III, 2.5% and PIM III, 2.38%) and actual mortality (6.54%) with a p-value < 0.001. AUC-ROC for both PRISM III and PIM III was 0.81 (95% CI, 0.79-0.84; P-value <0.001) and 0.80 (95% CI, 0.77-0.82; P-value <0.001) respectively. Better discrimination found after excluding DNR patients, 0.87 (95% CI, 0.84-0.90; P-value <0.001) and 0.82 (95% CI, 0.79-0.86; P-value <0.001) respectively. The Hosmer-Lemeshow test showed a significant difference between observed and predicted mortalities (p < 0.001). PRISM III significantly performed better with patients admitted with metabolic/genetic illnesses with AUC-ROC of 0.93 (95% CI, 0.87-0.99). Non-DNR patients had a lower standardized mortality rate for predicted mortalities using PRISM III and PIM III (1.52 and 1.64, respectively).

Conclusion: Both models showed adequate discrimination ability but poor calibration. Such models were made to fit specific patient characteristics and PICUs. Testing these models further in different regional institutions or developing new models is probably warranted before utilizing them for planning and assessing performance.

Background: The role of induction chemotherapy in nasopharyngeal cancers (NPC) is well established and supported by many studies. Many regimens are available with different efficacy and toxicity profiles, yet optimal regimen is to be defined. Over the last decade, many studies showed effective results for induction chemotherapy in down-staging bulky tumors and improving outcome. In our institution, four different regimens were used; Docetaxel, Cisplatin and 5-fluorouracil (TPF), Docetaxel and Cisplatin (TP), Gemcitabine and Cisplatin (GP), Epirubicin and Cisplatin (EP). Our aim is to report the outcome of patients treated with these protocols.

Materials and Methods: This is a retrospective study. NPC patients treated in our institution– King Fahad Medical City, between 2008 & 2019 were included. Patients who received induction chemotherapy for NPC were identified, and Survival outcomes were evaluated using SPSS

Results: A total of 125 patients who received induction chemotherapy were included in the analysis. Our results indicate that all the four different regimens are comparable in term of overall survival (OS), disease-free survival (DFS), with no significant difference between the groups ($P = 0.944$), ($P = 0.181$) respectively. Local Failure (LC) and distant relapse (DR) were also similar between all groups with no statistically significant difference. All regimens were well tolerated, but the toxicity was higher with Docetaxel Cisplatin and TPF regimens.

Conclusion: The four induction regimens used in KFMC are with comparable outcomes; hence the decision to utilize a certain regimen should be tailored depending on the toxicity. Further prospective trials are needed to define the optimal regimen.



Poster Presentations

SN	Poster Number	Topic	Speaker
1	001	Burning out among nurse	Premalatha Jaya Chandra
2	002	Mg administration for COPD Exacerbation	Hala Alzaid
3	004	Patient experience and satisfaction in the practice of telemedicine, cross sectional	Fawziyyah AlMutary
4	005	Assessing the Severity of Illness in Patients with Coronavirus Disease in Saudi Arabia	Abdulhadi M. Alqahtani
5	007	Factors Affected Patient Decision to Participate in Genomic Research Projects	Amal Almutairi
6	008	Costs of Workplace Productivity Loss in Patients with Connective Tissue Disease–associated Interstitial Lung Disease	Mohammed A. Algamdi
7	009	Complement anaphylatoxins and inflammatory cytokines as prognostic markers for COVID-19 severity and in-hospital mortality	Bandar Abdulmohsen A. Alosaimi
8	010	Satisfaction and Experience of Palliative Patients with Hotline Service During the COVID-19 Pandemic in KFMC, Saudi Arabia.	Sami Ayed Alshammary
9	012	Anatomic Variants of Intrahepatic Bile Ducts and Cystic Ducts In Saudi Arabia: Magnetic Resonance Cholangiopancreatography Analysis In Liver Donors	Ayesha Nuzhat
10	013	Influenza co-infection associated with severity and mortality in COVID-19 patients	Haitham S. Alkadi
11	014	Adipsic Diabetes Insipidus in Children: Current Understanding, a Case Report, and a Practical Guide	Anas Mohammed Ahmed Al-shoomi
12	016	A Case Report Pleomorphic Adenoma of Parapharangeal Space in 37-Year-Old Male with Review of Literature	Saffanah H. Al-Abbad; Hanadi Fatani
13	019	The Impact of an Online Platform on the Practice of Genetic Counseling during the COVID-19 pandemic	Fawz Alharthi

SN	Poster Number	Topic	Speaker
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	020	A prospective Study Using Multigene Next Generation Sequencing panel to evaluate the Prevalence of Familial Cancer in a Highly Consanguineous Population	Fawz Atharhi
15	022	Use of rapid COVID-19 antibody testing to evaluate relative risk infection in campus versus residents at government institution in Saudi Arabia	Sara Al Otaibi
16	023	Gut Hormones in Health and Obesity: The Upcoming Role of Short Chain Fatty Acids	Habeeb Alhabeeb
17	025	Covid-19 phenotypes in a Saudi Arabian cohort: A Saudi Genome study	Hadeel El Bardisy
18	026	Whole Genome Analysis of 342 adult cases of Obesity and related metabolic disorders in highly consanguineous population: A Saudi Genome Study	Fatimah Alqubaishi
19	028	Expression of Programmed Cell Death-L1 (PD-L1) Protein and Mismatch Repair Mutations in Orbital Tumours-a Pilot Study	Albandari Binowayn
20	031	The Quality and Accuracy of Adverse Drug Reactions Assessment and Documentation at King Fahad Medical City, Riyadh, Saudi Arabia	Alwaleed Alharbi; Waleed AlShehri
21	032	Elevated Expression Levels of Lung Complement Anaphylatoxin, Neutrophil Chemoattractant Chemokine IL-8, and RANTES in MERS-CoV-Infected Patients: Predictive Biomarkers for Disease Severity and Mortality.	Maaweya Elaeed Hamed Awad Alla
22	033	A rare case of giant coronary artery aneurysm associated with familial retinal artery macroaneurysm (FRAM)	Muhammad Azam Shah
23	037	Factors Influencing Nurses Decision to Activate Critical Care Response Team (CCRT): The Nursing Perspective	Mustafa Aldhoon
24	041	Clinicodemographic Characterization of Paroxysmal Nonepileptic Events in Children and Adolescents Admitted to The Epilepsy Monitoring Unit: A retrospective study	Muneer Almutairi
25	042	An infant with Opsismodysplasia and Dilated Cardiomyopathy: A Coincidence or a New Association	Muneer Almutairi
26	043	A Case Report of Right Coronary Artery Fistula to the Right Atrium: Successful Surgical Treatment	Halia Al Shehri

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27	044	Fluid-fluid level as an atypical radiological sign of clival chordoma	Mishari Fahad AlSalam
27	046	Association of Celiac Disease and Reproductive Outcomes at a Tertiary Hospital in Riyadh, Saudi Arabia	Maram Saadullah Alharbi
29	048	Multiple magnetic ball ingestion with delayed presentation in Pediatrics: Case Series.	Esam Barnawi
30	050	The impact of professional nursing governance on nurses in a multi-cultural setting in the kingdom of Saudi Arabia	Diana Lalithabai
31	051	Readiness of respiratory therapists in Saudi Arabia to manage patients with COVID-19: A cross-sectional study	Mohammed K. AlShehri , Hassan AlRefaee
32	052	Compliance with tobacco control policy and visibility of cigarette retailers around educational facilities in Riyadh, Saudi Arabia	Hala Aljishi
33	054	Coronoid foramina in Mandible': combined retrospective and prospective radiographic assessment of an anatomical variant.	Nyer Firdoose Subhan; Mohamad Awadalla
34	057	Classification of internal carotid artery injuries during endoscopic endonasal approaches to the skull base	Basim Mohammed A. Noor Elahi
35	058	Incidence Rate of External Ventricular Drain Infections and its Associated Risk Factors: 10 years' experience in Tertiary Care Hospital, Riyadh, Saudi Arabia	Maram Alshehri
35	060	Dietitians' Enteral Feeding Practices, Obstacles and Needs During the Management of Critically Ill Hospitalized Patients in Riyadh Saudi Arabia: A Qualitative Study	Rabaa A. Alyamni
37	062	Factors associated with COVID-19-related early versus late deaths in Riyadh City: a Cohort study	Ahmed Saleh, Afnan Al-Sharm
38	064	Plastic bronchitis in children: A case series	Gawahir Mukhtar
39	065	The Incidence of Positive SARS-CoV-2 in Medically Compromised Patients Receiving Dental Treatments	Osama F. Alshammari
40	067	Prevalence of growth impairment among Saudi children and adolescents: is there association with micronutrients	Abdulrahman Al-Hussaini
41	070	Learners Engagement in Covid-19 era and Influence on Academic Performance in Online	Ayesha Nuzhat

SN	Poster Number	Topic	Speaker
42	071	Satisfaction of individuals with partial-hand amputations after they were fitted with cosmetic silicone prostheses	Huthaifa Atallah
43	072	Obesity and brain function: an MEG study	Vahe Poghosyan
44	074	Early outcome of surgical repair of post-acute myocardial infarction ventricle septal rupture (AMI-VSR). A single center experience from Saudi Arabia	Abdullah Jehad Alotaibi
45	077	Willingness, Beliefs, and Barriers Regarding the COVID-19 Vaccine in Saudi Arabia: A Multiregional Cross-sectional Study	Abdullah Fahad Alkharashi
46	078	Estimation of tooth size and shape discrepancies among dental malocclusion groups using geometric morphometrics	Hesham Alsaigh
47	081	Cost analysis for extemporaneous preparations versus readymade medications in hospital pharmacies at KFMC	Ghadeer Faisal A. AlMutairi
48	082	Early outcome of type A acute aortic dissection: Analysis of 45 consecutive patients at King Fahad Medical City	Kholoud Mohammaddin
49	084	Uridine-Responsive Developmental and Epileptic Encephalopathy: Report of Two Siblings with a Novel CAD pathogenic variant and Literature Review of	Alaa AlAyed
50	088	Impact of Early Surgical Intervention on short-term outcome for infective endocarditis, single center experience from Saudi Arabia	Abdulaziz Marji Alshammari
51	089	Aromatherapy may not be so relaxing after all: A case of acute eosinophilic Pneumonia	Riyad O. Al-Lehebi
52	091	Efficacy and safety of mepolizumab in severe asthma: real-life experience in a tertiary center in Saudi Arabia	Riyad O. Al-Lehebi
53	092	Prevalence of post-bariatric surgery sleep related complications in a tertiary hospital in Saudi Arabia	Riyad O. Al-Lehebi
54	094	Comparison of primary versus secondary effects of antiphospholipid syndrome on the development of thrombosis	Haneen Sait
55	095	Papillary tumor of pineal region rare pediatric CNS tumor case series treated in King Fahad Medical City KFMC	Azhar Alshoumer

SN	Poster Number	Topic	Speaker
56	096	The Safety and Efficacy of Uterine Artery Embolization in the Treatment of Patients with Symptomatic Fibroids, Single Tertiary Hospital Experience	Abdullah Abdulrahman Muharib
57	097	Acute inflammatory pericarditis in a healthy adult patient after receiving the first dose of AstraZeneca COVID-19 Vaccine: a case report	Abdullah Abdulrahman Muharib
58	098	Infertility Patients' experience during the COVID -19 pandemic	Marwa Elfateh
59	099	The role of 99mTc MAG3 diuresis renography in diagnosis and assessment for pre- and post-pyeloplasty in hydronephrotic children	Doaa Abdullah Al Aldahan
60	100	Psychological Impact of COVID-19 in Saudi Arabia: A Community-Based Study	Doaa Abdullah Al Aldahan
61	101	Clinically significant symptoms prevalence in breast and colon cancers and leukemia patients: a comparison analysis of patient reported outcomes	Isamme N. AlFayyad
62	102	Health related Quality of life of breast and colorectal cancer patients undergoing active chemotherapy treatment: Patient-reported outcomes	Isamme N. AlFayyad
63	103	To disclose, or not to disclose? Perspectives of clinical genomics professionals toward returning incidental findings from genomic research	Isamme N. AlFayyad
64	104	Medication safety knowledge, attitude, and practice among hospital pharmacists in tertiary care hospitals in Saudi Arabia: a multi-center study	Isamme N. AlFayyad
65	105	The role of 5' adenosine monophosphate-activated protein kinase in the chemo-sensitivity and metabolic behaviour of breast cancer cells exposed to hypoxia and hyperglycaemia	Athba AlQahtani
66	106	Knowledge, Attitude and practice regarding COVID-19 pandemic among the multiple sclerosis's patients in Saudi Arabia	Nimah Somali
67	107	COVID-19 in Health Care Workers: Antibodies Prevalence and Persistence, risk factors and Vaccine Acceptance in a tertiary Care Hospital, Saudi Arabia.	Ohoud Alkinani