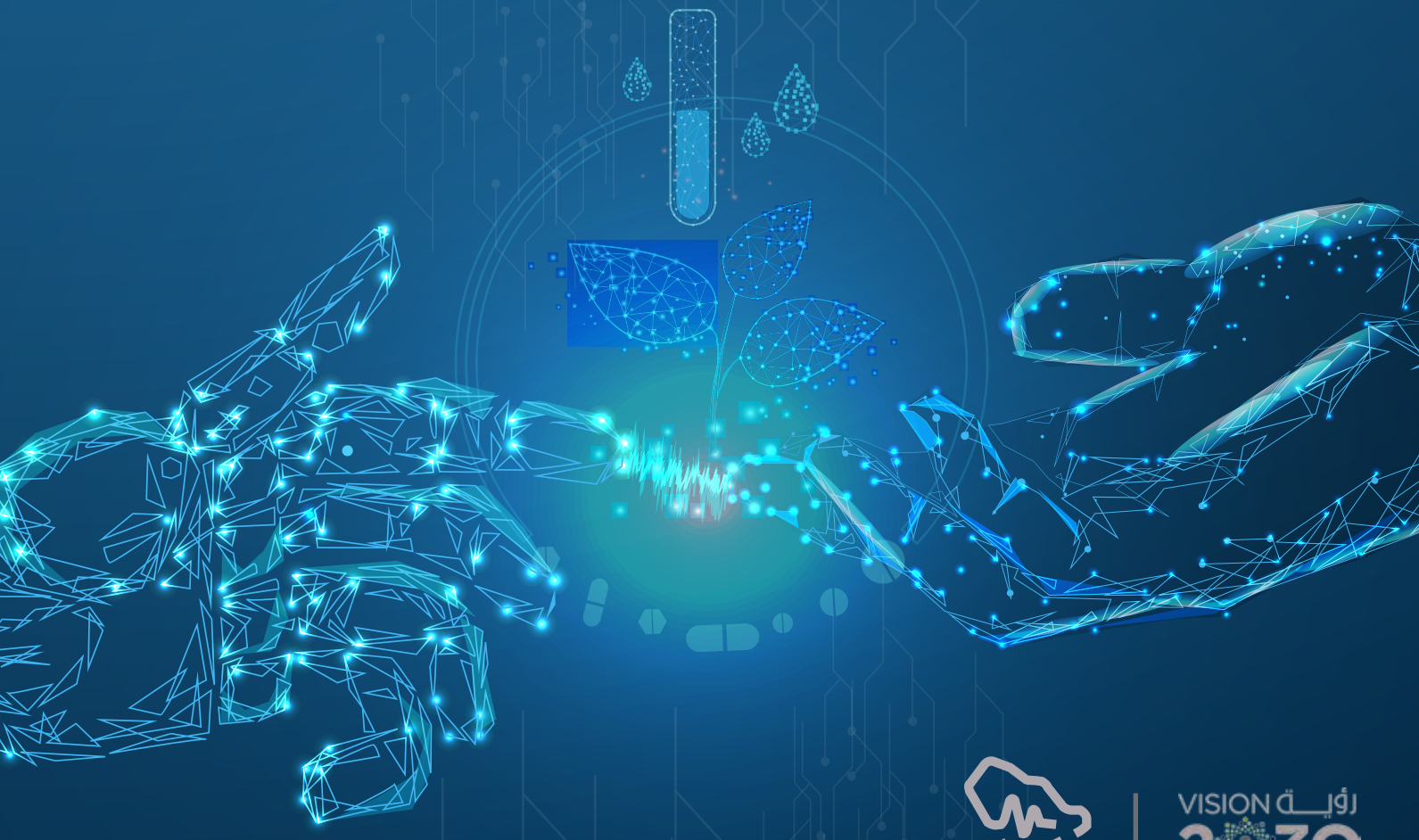
KSA 2020 PT
KNOWLEDGE, SKILLS AND ABILITIES IN PHARMACY AND TOXICOLOGY
ANNUAL MEETING AND WORKSHOPS

EXPLORING THE PROSPECT OF PHARMACY AND TOXICOLOGY FOR A BETTER WORLD

POST-CONFERENCE REPORT



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VISION رؤية 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

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Saudi Pharmaceutical Society
الجمعية الصيدلية السعودية

نادي صيادلة المنطقة الشرقية
Eastern Province Pharmacists Club

OUTLINES

About KSAPT 2020 Conference

An International Platform for Pharmacists and Toxicologists

KSAPT 2020
KNOWLEDGE, SKILLS AND ABILITIES IN PHARMACY AND TOXICOLOGY
ANNUAL MEETING AND WORKSHOPS

Knowledge, Skill, and Ability in Pharmacy and Toxicology (KSAPT) 2020 is an international conference focusing on probing the advanced prospects and issues in Pharmacy & Toxicology for a better world. It examines worldwide issues in the broad fields of Toxicology and Pharmacology that impact all of humankind. We take great pleasure in welcoming researchers, practitioners, pharmacologists, toxicologists and academicians, and regulatory staff from all health and developmental sectors to the 2nd annual KSAPT Conference to contribute further enhancements in the Arabic world in response to prevailing issues. In this regard, we strive to offer a beneficial platform for healthcare providers, particularly for pharmacists and toxicologists, to address issues, launch new products, learn about new technology developments; and acquire scientific knowledge, to establish a safer world in the practice of toxicology and pharmaceutical care.

KSAPT Integration of Applied Drug Disciplines

The KSAPT Conference seeks to promote medicine, pharmacy, laboratory, and nursing education needed in the diagnostic care process and management for toxicology practices. The Conference aims to spotlight current practices and research; to develop new health innovations and medical recommendations; and bring together those interested in diagnostic, care process, and management, including physicians, pharmacists, laboratory technologists, nurses, and students of health sciences.

The Conference convenes the world's experts in the fields of clinical, forensic, regulatory, laboratory, pharmacology, and experimental toxicology to advance knowledge, skills, and competencies about the appropriate use of chemicals, including drugs in the medical field. The Conference shares and presents solutions to the most challenging problems in the global world of pharmacy and promotes international scientific collaborations in synergy with other health and developmental sectors.

Scope of the KSAPT Conference

KSAPT is an International Platform and Leadership to Promote Scientific Cooperation and Knowledge & Skills Exchange in Pharmacology and Toxicology

Message from the
General Director Of Eastern Health Affairs

It is our immense pleasure to warmly welcome all the respected healthcare professionals on the promising occasion of the second annual KSAPT Conference organized by the Eastern Health Affairs and the EPPC under the theme:

"Exploring the Prospect of Diagnostics, Care Processes, and Management in Pharmacology and Toxicology for a Better Healthcare Practice".
It is indeed an outstanding effort and achievement by the esteemed members of the EPPC and the Eastern Health Regional Poison Control Centre to organize such a great scientific event on a subject that needs the attention of all healthcare professionals and scientific researchers.

Finally, I would like to extend our immense gratitude to all the Conference organizers, scientific committee members, speakers, contestants and sponsors, and wish you a very successful and enjoyable conference.

Dr Ibrahim Al Oraifi
General Director, Eastern Province Health Affairs

Message from the President of Saudi Pharmaceutical Society

On behalf of the Saudi Pharmaceutical Society, I want to extend a warm and cordial welcome to all the participants in the Second Annual KSAPT Conference organized by the Eastern Health Regional Poison Control Centre in collaboration with the Eastern Province Pharmacists' Club on the subject of: "Exploring the Prospect of Diagnostics, Care Process, and Management in Pharmacology and Toxicology for a Better Healthcare Practice".

This Conference aims to bring together the most esteemed health professionals, together with all the committed staff members from the top hospitals and universities across the Kingdom. I am sure that all attendees will enjoy this high-value scientific activity.

Dr Moreq Al Otaibi
President of the Saudi Pharmaceutical Society

Message from the Conference President

It is my pleasure to welcome you to the second annual Knowledge, Skill & Ability in Pharmacy & Toxicology Conference and Exhibition – KSAPT, which has clearly established itself as one of the largest annual pharmaceutical and toxicology events in the Middle East.

The pharmacy and the toxicology profession in this part of the world is undergoing a substantial transformation towards greater automation, robotics, specialization, and importantly up-gradation of quality services. For health practitioners to keep pace with the rest of the world, it is most critical to realign, reengineer, and reinvent our approach in order to be an integral part of the healthcare fraternity. Therefore it is of paramount importance that the focus should be on enhancing and upgrading competency and professionalism, facilitating staff development, introducing a new range of specialized services, benchmarking, and pursuing global collaboration.

This year, KSAPT features a world-class conference agenda presenting the most important topics related to the shifts and changes taking place in the field of pharmacy and toxicology while also attracting the best minds in the industry, who will offer their unique insights about the latest challenges faced by health practitioners, researchers and academicians as well as the drug manufacturing industry.

Moreover, to offer the public a preview of the latest, KSAPT is a dedicated platform to showcase the latest innovations in how technology is impacting the healthcare sector.

I would like to thank the administration team, speakers, educators, moderators for their time and dedication in making this conference possible. I would also like to thank the advisory board and the judging panel for their ever-willing support.

It is the team's continuous effort and dedication that has evolved this conference into becoming one of the most successful pharma and toxicology events in the Middle East. Lastly, I would like to offer a special thanks and mention to our General Director of Health Affairs, Eastern Region, Dr. Ibrahim Al Oraifi and President of the Saudi Pharmaceutical Society, Dr. Moreg Al Otaibi for all their encouragement and support.

I look forward to seeing you all at KSAPT 2020.

Dr. Maha Almazroua
KSAPT President
ksapt-president@ksapt.org

Meet the Minds

KSAPT 2020 Conference Executive Committee

The Conference brings together the best minds in the pharmacology and toxicology fields and the organizational achievement of some of the Kingdom's finest minds in these fields. We are grateful to the various committees who have generously given their time and attention to ensuring the success of this conference.

STRUCTURE OF CONFERENCE EXECUTIVE COMMITTEE FOR KSAPT 2020

SCIENTIFIC COMMITTEE FOR KSAPT 2020

Dr. Mohammd Al mohaini
Chair

Subcomittees

Coference Main Program
Pre-conference Workshops
Research Abstract
Hospital Showcase
Enterprising Learning Platform

Dr. Sukainah Al Shaikh
Co-chair

Members

Dr. Maha Almazroua
Dr. Abdulkhaliq Alsalman
Prof. Essam Hafez
Prof. Sahar Issa
Dr. Mohammed Almaznai
Dr. Amani Al Shaban
Dr. Eman Almusalami

ORGANIZING COMMITTEE FOR KSAPT 2020

Dr. Hussin Alawait
Chair

Dr. Abdulmonem Alhamdan
Co-chair

D.r Yassir Alshehri
Dr. Eman Alzahrani
Hospitality

Dr. Manal Alharthi
Noran Alkharaa
Media

Dr. Turki Alanazi
Dr. Taher Alhaddad
Halls and Ceremony

EXTERNAL AND OVERSIGHT SCIENTIFIC ADVISORY BOARD FOR KSAPT 2020

Prof. Ahmed Aljedai
Oversight Scientific Advisory Board Chair

Dr. Amani Al Shaban
Coordinator of External and Oversight Scientific Advisory Board

Prof. Nahla Ayoub
Member

Dr. Salah Alminshawi
Member

Dr. Nasser Alqahtani
Member

Dr. Abdulsalam Miqdash
Memeber

ORGANIZING COMMITTEE FOR KSAPT 2020

Research Competition Judges

Research Abstract Coordinators

Dr. Sukainah Al Shaikh
Dr. Mohammed Al mohaini

- Dr. Nasser Alqahtani, Chair
- Prof. Nahla Ayoub
- Dr. Abdullah Alzahrani
- Dr. Abdullah Alhifan

Enterpising Learning Platform Coordinators

Dr. Eman Almusalami
Dr. Yasir Alshehri

- Dr. Ahmed Alenazi, Chair
- Dr. Amer Al mohssen
- Dr. Abdullah Afifi

Hospital Showcase Coordinators

Dr. Mohammed Almaznai
Dr. Eman Almusalami

- Dr. Sitah Alzoman, Chair
- Dr. Abdulaziz Almulhim
- Dr. Naser Al Qahtani
- Dr. Huda Almitalaq
- Dr. Elham Aljanahi

Keynote Speaker

AHMED HAMDAN ALJEDAI

Pharm.D., M.B.A., BCPS, FAST, FCCP, FASHP

Assistant Deputy Minister for Medical support Services | Ministry of Health

Value-Based Care and the Role of Pharmacist

Healthcare systems are globally changing from utilization marketplace to impact (value-based) marketplace. A significant increase in awareness of managed entry agreements (MEAs) was seen globally over the last 5 years. MEAs are increasingly implemented globally over the last few years; however, more than 95% of these being implemented are in high income countries. United Kingdom implemented the highest number of MEAs followed by the US and Australia. However, financial agreements are largely preferred compared to others. Globally, performance-case schemes have started gaining importance over the last ten years; Novartis, Roche, and Pfizer are major contributors. A recent survey indicated that the implementation of MEAs in Middle East (ME) regions is limited, but it is expected to evolve over the next few years. MEAs are mainly considered for the treatment of cancers and rare disease in ME countries. MEAs schemes are very frequently considered for oncology drugs, followed by rheumatoid arthritis, multiple sclerosis and other immunomodulators in ME countries. Manufacturers and buyers are playing a major role in MEAs processes, where registries and hospitals would contribute the execution face of the scheme. Stockholders in the healthcare value chain involved directly and indirectly in the MEAs pathway have mutual gain situation. Several factors from manufactures' and buyers' perspectives could attribute to the success of failure of value-based agreements (VBAs) negotiation and implementation in USA. Clear processes, performance metrics and infrastructure maturities were behind successful implementation of MEAs across the globe. With rising chronic diseases prevalence and healthcare costs, the Saudi Ministry of Health (MoH) and private buyers are facing constant pressures of increased expenditure. Recently, Kingdom of Saudi Arabia (KSA) is among other few countries in ME regions started shifting to value-based model through its health sector transformation programs. KSA has already started taking various measures for facilitating the value-based adoption. Stockholders in KSA understand the importance of implementing MEAs making it an attractive option to improve access to medicine and reducing budgets. MoH is leading other Saudi sectors in the implementation of value- and financial-based agreements aiming at reducing uncertainty of outcome. Pharmacist can play an important role in VBAs from conceptualization to generalization of insights.

Prof. Aljedai is a graduate of King Saud University- College of Pharmacy. He received his Pharm. D. from the St. Louis college of Pharmacy, MO, USA and completed a PGY1 and then a PGY2 residency in immunology and solid organ transplant pharmacotherapy at the University of Tennessee, Memphis, TN, USA. During this time he obtained his MBA as well. He is board certified as Pharmacotherapy Specialist (BCPS) and a Fellow of the American College of Chest Physicians (FCCP) and a Fellow of the American Society of Transplantation (FAST). He works currently as the Director of Pharmaceutical Care Division at KFSH&RC, and as a Professor at Al-Faisal University, School of Medicine and the Chairman of the scientific board of pharmacy in Saudi Arabia. He also works as a consultant clinical pharmacist with different solid organ transplant teams at KFSH&RC. He is a member of the advisory board of 4 different schools of pharmacy in Saudi Arabia and many peer reviewed journals. He also holds several consultancy positions at the WHO, Saudi FDA, Saudi MOH, and the Saudi Commission for Health Specialties (SCFHS). He has presented hundreds of presentations over the years locally and internationally and published more than 30 original peer reviewed in addition to 2 textbooks chapters related to transplant pharmacotherapy, pharmacy practice, and clinical pharmacy. Currently, Prof Aljedai is an Assistant Deputy Minister for Medical support Services at Ministry of Health, Saudi Arabia.

MOUREQ AL OTAIBI
MSc., PhD

Associate Professor of Pharmacology and Toxicology | King Saud University

How Do Pharmaceutical Societies Empower the Profession

Saudi Pharmaceutical Society (SPS) represents pharmacists all over the Kingdom of Saudi Arabia. The value of SPS is relied on its contribution to growth and development of pharmaceutical field in many aspects of practice such as governmental institutions, hospitals, manufacturing companies, community pharmacies, etc. Therefore, scientific (and professional) roles of SPS is focusing on filling the gap between strict divisions of universities, where pharmacists receive knowledge and develop intellectual commitments during college studies, and all different forms of practice in institutions devoted to science, research, regulatory affairs, clinical and manufacturing. In addition to all scientific activities that have been excuted in over than 30 years, SPS has established a peer-reviewed scientific journal (Saudi Pharmaceutical Journal) and other pharmacy-related magazines, etc. Along with SPS, there are other pharmaceutical scientific and professional registered associations based in Saudi Arabia, which have been founded for the purpose of promoting and developing certain specialized goals of the profession of pharmacy such as Saudi Society of Clinical Pharmacy (SSCP), Saudi Community Pharmacy Association, Saudi Society of Medication Education, Saudi Oncology Pharmacist Assembly (SOPA), and Saudi Cardiology Pharmacist Assembly. Each organization of them is providing expertise in education and acquiring new knowledge in the field for which they were established. Scientific societies as non-profit organizations, apart from their concern for the benefit of their members and sponsors, have demonstrated a great ability in creating an infrastructure that is invisible to the eye, by setting up and opening communication channels between individuals within the country.

Moureq Alotaibi has earned his BSc in Pharmaceutical sciences from King Saud University in 2008, MSc in Pharmacology and Toxicology in 2012 and Ph.D in Pharmacology and Toxicology from Virginia Commonwealth University in 2015. Dr. Alotaibi has been working in molecular and pre-clinical cancer research since 2010 with over than 20 publications in the field in several journals. In addition, Dr. Alotaibi has also participated in research courses and workshops at the National Institute of Health in the United States as well as actively involved in training and mentoring graduate students and post-doctoral fellows at King Saud University. Currently, Dr. Alotaibi is an associate professor at King Saud University and the president of Saudi Pharmaceutical Society (SPS).

NASSER MOHAMMED ALQAHTANI
PhD

Executive Director, Drug affairs | Central Cluster One (C1) - MOH

Drug sector transformation at First Central Health cluster: opportunities and challenges

The lecture will give highlights on the transformation journey of pharmaceutical sector carried out by the first central health cluster (C1) detailing the opportunities, challenges and some experiences that audience could benefit from.

Dr. Nasser Alqahtani works as an executive director for pharmaceutical and drug affairs at Riyadh 1st health cluster (C1) - MOH and Assistant professor of pharmacoepidemiology & pharmacoeconomics at Alfaisal University. Dr. Alqahtani used to serve as a director of drug safety and risk management dept – Saudi Food and Drug Authority (SFDA). He receives his B.S. in Pharmacy from King Saud University, M.Sc. in clinical pharmacy from the UCL and Ph.D. in pharmaceutical policy and outcomes research (Major: Pharmacoepidemiology) from Auburn University – Alabama, USA. He had been a member of the establishment team of the national pharmacovigilance system in Saudi Arabia –SFDA. He is a member of a couple of professional societies: the International Society for Pharmacoepidemiology (ISPE), International Society of Pharmacovigilance (ISOP) International Society of pharmacoeconomics and outcomes research (ISPOR). He serves as an associate reviewer for the Pharmacoepidemiology and Drug Safety (PDS) journal, the official journal of ISPE since 2012, a chairperson of the scientific committee of SFDA research center, and a senior research associate for the medication safety research chair-KSU. He is a member of the national pharmacovigilance Advisory Committee and the IRB committee - SFDA. His area of research focuses on the development and application of epidemiologic and statistical methods for evaluating the safety of medical products in large healthcare databases.

KHALID ALBURIKAN

BS, PharmD, BCPS

Associate Professor of Clinical Pharmacy | King Saud University

Consultant | Sanofi Greater Gulf

Improving Patient Access to Innovation; the Role of Industry

The main objectives of this lecture are to explore the role of industry in leading research and development in transforming healthcare, and to describe the main challenges facing the healthcare institutions in the future. Patients around the globe are living longer, healthier and having more productive lives due to innovative solution in medicine, surgery and healthcare workers. New therapies have contributed to significant declines in cancer death rates around the world since its peak in 1991. Today, 2 out of 3 people diagnosed with cancer survive at least 5 years. For many patients and their families, medicines are transforming outcomes for patients living with non-communicable chronic diseases such as cardiovascular disorders, diabetes, and rheumatoid arthritis. Currently, more than 7000 medicines are in development around the world targeting areas of high unmet need. There is a growth in the pharmaceutical market in Middle East and Africa. Particularly, there is a significant increase in pharmaceutical sales and percentage of health expenditure in Saudi Arabia in the period of 2013 – 2020. Industrial innovative solution should consider healthcare providers' perspective and patient's voice. More innovation is needed as sales projected to reach US $10 billion by 2023, driven, in part, by several demographic and epidemiological trends. In addition, growing demand for biologics and other high-cost medicines are expected. Formulary effectiveness should be considered in order to allow access to innovation and investment in healthcare. Also, framework for shared responsibilities in building real world evidence and data generation to face uncertainties in health outcome. Finally, patient voice should be empowered through public association.

Khalid A. Alburikan is an Associate Professor of Clinical Pharmacy at King Saud University, College of Pharmacy and Clinical Pharmacist Consultant – Cardiology at King Saud Medical City. Dr. Alburikan finished his bachelor of Pharmaceutical Sciences from King Saud University in 2007. He finished his Doctor of Pharmacy from Massachusetts College of Pharmacy and Health Science University, School of Pharmacy-Worcester/Manchester, Worcester, Massachusetts, USA in 2012. Dr. Alburikan finished the Cardiovascular Pharmacotherapy Fellowship in 2015 from Eshelman School of Pharmacy and Pharmacy Practice Residency in 2013 from University of North Carolina Hospitals and Clinics, Chapel Hill, North Carolina, USA. Dr. Alburikan is BCPS certified and has published many article in peer reviewed journals.

SALAH ALI MENSHAWI
MD

Consultant and a Head of Toxicology Department | Ministry of Interior

New Psychoactive Drugs (NPDs) Summary

New Psychoactive drugs (NPDs) are those drugs mimic some natural drugs but with stronger effects. Many psychoactive drugs started originally from plants such as Marijuana, Khat, Coca leafs and opium. Dimethyltryptamine or DMT drug is one of the hallucination drugs that extracted from Ayahusaca leafs present in different parts of world such as Brazil and Berue. Researches showed that DMT is released from the human brain prior to death in very excessive amount and this may explain what person see before death. Single DMT tablet coast 100 US dollars and usually this drug is common between wealthy individuals. The experience of DMT include hallucination, euphoria, mind-altering psychedelic effects, paranoia and fear. It was found that 75% of DMT users attempt to kill them self's and 25% of users suffering from mental illness rest of life. Amphetamine is well-known drug in Middle East and Gulf region. It was found that 75% of world Amphetamine/Captagon come to Saudi Arabia through drug smugglers. Amphetamine/Captagon toxicity symptoms are lethargy, depression, insomnia, hypertension, tachycardia, high body temperature and cardiac arrest. Methamphetamine is another type of stimulant that is highly addictive and toxic to CNS. It have longer T1/2 than amphetamine (12-30hr) and long duration >24hr. Methamphetamine toxic effects include tolerance, paranoia, hallucinations, agitation, irritability, memory problem, stroke and death. Methylenedioxy-methamphetamine (MDMD) is another stimulant drugs have different street names such as ecstasy or XTC. It effect start within 20 minutes after administration. MDMA known to increase the activity of three neurotransmitters, serotonin, dopamine and nor-epinephrine. Toxic effects are depression, anxiety, paranoia, psychotic episodes. Rohypnol (Flunitazepam) know as date-rape drug. Act as CNS suppressant drug and it can be lethal when mixed with alcohol. Gamma hydroxybutyrate (GHB) is depressant drug with sedative hypnotic effects. GHB has been abused due to its euphoric, sedative and anabolic effects. It usually associated with sexual assault. Its toxic effect include tremors, decreased heart rate, and decreased body temperature and memory lapses. Overdose symptoms include irregular heartbeat, breathing difficulty, heart attack, coma and death. Ketamine is another psychoactive drug with the following toxic effect such as ataxia, double vision, sedation and hallucination. Flakka or PVP drug (alpha-pyrolidininopentiophenone alpha) is a stimulant drug made from cathinone the chemical derived from khat plant. Flakka have the combined effects of both cocaine and methamphetamine. It cause mood elevation, euphoria. Agitation increases energy and elevated libido. Synthetic cannabinoids have different street names such as K2, black Mamba, Joker and Strox. There are more than 200 types of synthetic cannabis. Toxicity symptoms are agitation, depression, hallucination, suicide thoughts, panic attacks and heart attack. It have the same THC effect and higher effect that marijuana by 100-800 times. The last drug is Crocodile drug (des-morphine). Known as poor heroin, toxicity symptoms are gangrene, blood poisoning, blood clots and death.

Dr. Salah Menshawi is a Toxicology Consultant and a member of SOT society of toxicology, STS Saudi Toxicology Society and ATA Arab Toxicology Association. He is the Head of Toxicology Department at MEDİCAL service department – Ministry of Interior, Saudi Arabia.

SALAH ALI MENSHAWI
MD

Consultant and a Head of Toxicology Department | Ministry of Interior

Sport Doping Summary

Sport doping is one of the major problems in the worldwide. In Saudi Arabia many death cases were reported for health and young people. Body builders become a fashion in many part of the world in addition to Saudi Arabia. Youth start taking doping and food supplements to improve their ability and performance during exercise. In many situations this habit may be toxic and lethal. The word "Doping" originally came from the Dutch word "Dope" which an opium juice used by ancient Greeks. Doping history in the sport started long time since Romans civilization. Aretaeus of Cappadocia was a famous Physician from Cappadocia who wrote many books about medicine and he was focusing on the athlete's performance during championships. Aretaeus was believed that athletes should not perform any sexual practices prior to championship because this may affect his performance. History of using steroids in sport started on 1968 in Mexico City Olympics. Many world famous athletes were charged of using doping drugs during championships. There are many kinds of doping. Doping can be made through medication, procedures and devices. The aim of doping is to increase the performance of athletes during championship. However, there are many tragedical stories for doping misuse. From West Germany a story of Heidi Krieger who became Andreas Krieger due to testosterone hormone given by her coach. List for athletes who charged by using doping include famous players such as Ben Jonson, Maradona, Mike Tyson, Zidane and others. Doping source usually from coaches, doctors, online, pharmacist and trainers. The most common types for doping are:

1- Anabolic steroids (give the same effect of testosterone on muscles and bone tissue enlargement).
2- Human Growth Hormone (stimulate tissue synthesis)
3- Creatine (increase muscle strength).

In addition to that illegal substance may also be used as doping agents include stimulants drugs (cocaine, amphetamine. Cathinone and caffeine), alcohol and other narcotic agents. Blood doping is another technique made by athletes were one-two blood unit is taken from the athlete's body after excessive exercise and frozen then before championship is injected into his blood stream. This method known to increase the athlete's performance by 20%. Steroid toxicity due to steroid misuse by athletes is well known. These include hypertension, depression, aggression, mood swings, insomnia, Acne, liver damage, testis atrophy, inhibit libido and strokes. In the last ten years Saudi Arabian Anti-Doping Committee establish a protocol where athletes provide blood and urine sample for drug doping test prior their championship. The aim of this presentation to give a clear idea about the different types of doping and its side effect and toxicity on the body and what are the different regulations that must followed by the athletes to save their life's.

Dr. Salah Menshawi is a Toxicology Consultant and a member of SOT society of toxicology, STS Saudi Toxicology Society and ATA Arab Toxicology Association. He is the Head of Toxicology Department at MEDİCAL service department – Ministry of Interior, Saudi Arabia.

SAHAR ISSA
MD, MSc, PhD

Medical Director and Consultant Toxicologist | Dammam Poison Control Center

Predictive Toxicology: Toxicology in Silico

In-Silico Toxicology (IST) -Computational Toxicology - is that unique branch of the science of toxicology concerned with the development and use of computer-based models to understand and predict the interactions of biological organisms (at the population, individual, cellular, and molecular levels) with pollutants in the air, water, soil and food, and the adverse health effects that they may cause. A data set can be extracted from multiple literature sources and may be screened by physicochemical property-based quality scores. These algorithms can be used for model development. Moreover, a few more preprocessing techniques, such as synthetic minority over-sampling technique, can be applied to address the imbalanced class problem in the data set. Then, classification models using different algorithms, such as generalized linear model, support vector machine, random forest, and neural network, can be developed and their performances will be compared to find the best performing preprocessing methods as well as algorithms. The main aim behind using the IST is to minimize or even limit the use of experimental animals, save time and expenses when we do not have enough of either. As all the presented models can predict the toxicity of even the nanomaterials or the toxic complexes in consideration of various experimental conditions, they will present the advantage of having a broader and more general applicability domain than the existing quantitative structure-activity relationship models

Dr. Sahar Issa is a Professor of Clinical Toxicology & Forensic Medicine, Faculty of Medicine, Alexandria University-Egypt and a Medical Director and Consultant Toxicologist in the Regional Poison Control Centre. She got both her degrees of MSc and Doctorate Degree (PhD) in Clinical Toxicology and Forensic Medicine from Alexandria University-Egypt. Dr. Sahar is also a member of the KSAPT Scientific Committee. Her research work exceeded 40 publications in both National & International Journals. Favors areas of research in the fields of Digitalized Toxicology algorithms, In-silico Toxicology, Drug Poisoning, Substances of Abuse, Designer Drugs, Forensic Toxicology, Electronic Health in Toxicology & Forensic Medicine, besides, to the study of Systemic effects of acute toxicity related to drugs, herbs, Pesticides, & food. Highly interested in studying heavy metal poisonings, with particular interests in Lead Toxicity.

NAGLAA FARID ELSAYED MAHMOUD

M.D Forensic Medicine & Clinical Toxicology

Medical Toxicology Consultant | Regional Poison Control Centre Dammam

Toxicology practice challenges during COVID 19 pandemic: Experience of Dammam Poison Control Center

Medical toxicology and infectious disease are not specialties traditionally related to each other; however, Pandemics have a way of changing convention, as a medical toxicologist we serve as a fund of knowledge for our healthcare colleagues and the public. Objective: to introduce our experiment in Dammam poison control center during Covid19 pandemic & evaluate the changes in poisoning cases regarding distribution, types and characteristics for better framing and planning of the role of our field in responding to pandemics. Methods: Study of telephone consultations calls, and toxicology analysis records of poisoning cases referred to Dammam Poison Control center during the first half of 2020. Their distribution according to frequencies, causes and other characteristics were compared to the first half of 2020. Results: Analysis of telephone consultation calls revealed that, the proportion of disinfectants and hand sanitizers exposure during first half of 2020 increased to 20.4% (N=496) and 3.4% (N=83) respectively compared to 9.8 % (N=215) and 0.4 % (N=10) for surface disinfectants and hand sanitizers, respectively during the first half of 2019. In 2020, exposure to disinfectants & hand sanitizers dominated in preschool children aged (0-5 years) 85.8% & 79.5 % respectively. The total number of cases suspected for drugs/drugs of abuse overdose during the 1st 6 months of 2020 (N=783) showed a significant decrease ($p<0.001$) Compared to the 1st 6 months of 2019 (N =1086). Conclusion: increased availability and use of disinfectants and sanitizers significantly increased the risk of poisoning, especially in preschool children aged (0-5 years) through accidental ingestion. Public health education about proper use storage &handling for prevention of such home poisonings is urgently needed to avoid unnecessary emergency medical system use in such critical time so that the international response to this crisis is optimized, robust and effective.

Associate professor of Forensic Medicine and Clinical Toxicology, Faculty of Medicine, Cairo University. Medical Toxicology Consultant at Regional Poison Control Center- Dammam- Eastern province-Saudi Arabia.

MOHAMMAD ALI ALSHABEEB
PhD

Consultant Pharmacogeneticist | King Abdullah International Medical Research Center

Pharmacogenetics-Based Prescribing

The adoption of pharmacogenomics (PGXs) is increasing at the population level. PGXs aid in individualizing therapies according to the genotype's characteristics of patients, through which the genetic variations attributed to medication disposition can be tested upfront to predict variability of patients' response to drugs to be administered. The incorporation of pharmacogenetic testing might contribute to better patient outcomes by reducing side effect and improving the overall effectiveness of administered medications. The existing association pairs (gene/drug effect) reported by the Clinical Pharmacogenetics Implementation Consortium (CPIC) is 363 interactions between 127 gens and 229 drugs. Besides, the Pharmacogenomics Knowledge Base (PharmGKB) reported 244 pharmacogenes possibly underlying ADRs related to 176 clinically used drugs. Currently, clinical guidelines established by CPIC involve the following drugs: ADHD drugs (e.g. atomoxetine, methylphenidate), allopurinol, atazanavir, capecitabine, carbamazepine/oxcarbazepine, clopidogrel, efavirenz, inhaled anesthetics, ivacaftor, NSAIDs (e.g. celecoxib, flurbiprofen, diclofenac), ondansetron/tropisetron, opioids, peginterferon, phenytoin, PPIs, rasburicase, simvastatin, SSRIs, tacrolimus, tamoxifen, TCAs, thiopurines, voriconazole, warfarin and others. In addition, more drugs are included in the guidelines developed by the Dutch Pharmacogenetics Working Group (DPWG). Both guidelines provide clear advices to change, avoid or monitor drug therapy based on patients' unique genotypes. Existence of genetic variants and their frequency differ among populations; for example carriage of Human Leukocyte Antigen (HLA):B*57:01 which is associated with hypersensitivity induced by the antiviral; abacavir, is common among Europeans (6-8%), whereas lower rate of penetrance is seen in African American (2.5%) and hardly detected in Asians (0%). Conversely, other variants such as CYP2D6*17 can be identified in Africans and Middle Eastern e.g. Saudis (3% and 4%, respectively) but is absolutely absent in Caucasians. Thus, it is necessary to explore the exact genetic characters of targeted natives before deciding what genes and variances to test for.

Dr. Mohammad Alshabeeb is a consultant pharmacist/Pharmacogeneticist graduated from King Saud University, College of pharmacy with a Bachelor's degree in Pharmaceutical Sciences in 1994. In 1999, he obtained his Master degree in Clinical Pharmacy from King Saud University too. In 2009, he completed another Master in molecular and medical biosciences from Newcastle University, UK. Also, he completed his PhD in Pharmacogenetics from Newcastle University, UK in 2014. Later on, Dr. Alshabeeb pursued his Postdoctoral Fellowship Training in Cardiovascular Genetics in Utrecht University, Netherlands in 2017. In addition, Dr. Mohammad Alshabeeb has several peer reviewed publications and abstracts in international journals.

SAJA HAMID ALMAZROU
PhD

Assistant professor | King Saud University

Academic writing

The academic writing lecture aims to demonstrate practical steps in writing a scientific manuscript. This includes, writing an informative introduction, summarizing previous studies and synthesizing a coherent discussion section. The lecture also highlights the common writing challenges and methods to overcoming those challenges.

Saja Almazrou received her Doctorate of Philosophy degree in Pharmaceutical Sciences with a focus on Health Economics and Health Services Evaluation from the University of Nottingham in 2018. She is currently working as an assistant professor in clinical pharmacy department at King Saud University. Saja has authored and co-authored several peer-reviewed publications and presented her research at national and international conferences. Her research interests include health economics, pharmacy and evidence-based practices.

MARWAN ALI ALBAHAR
PhD

Assistant professor | Umm Al Qura University

Artificial Intelligence in Medicine

Medicine is one of the fastest-growing and influential application areas with unique challenges. Medical technology has a different set of limitations composed of sterilization needs, more excellent reliability (& associated standards), and customization to varying anatomy. For the past few years, artificial intelligence (AI) has gradually permeated the medical industry, bringing solutions that are changing healthcare. AI offers the healthcare industry the capacity to analyze data without compromising accuracy at exceptional speeds. The advantages of AI in healthcare are abundant, fast, efficient, precise. In addition, AI is transforming medical practice to allow doctors to diagnose patients more correctly, predict patients' future health, and appoint better care. This presentation discusses the application of machine learning for particular medical issues.

MARWAN ALI ALBAHAR received the B.S. from King Faisal University in 2011 and M.Sc. (Hons.) degrees in computer science from Frostburg State University in 2015, and the Ph.D. degree from the University of Eastern Finland in 2018. His main research areas include computer networks and security, cybersecurity, and artificial intelligence.

RIYAD AKLA ALSHAMMARI
PhD

Assoc. Professor Computer Science, Senior Data Scientist | KSAU-HS, MNGHA

The Impact of Artificial Intelligence and Big data in Healthcare

This lecture is designed to inspire and motivate our health workforce to become more involved in Artificial Intelligent (AI) and its impact on healthcare and population health. There is a rapidly growing demand for AI solutions in the Kingdom of Saudi Arabia and the Gulf Cooperation Council (GCC) countries, both by the public and the private sectors. Clients in the GCC are keen to take advantage of the availability and cost-savings offered by AI in a high-tech Information Technology environment. The development of Big Data Analytics tools and its integration with AI can be a great enabler that can be used to solve many healthcare problems by utilizing massive amounts of data generated by state-of-the-art smart Health applications.

Riyad Alshammari is an Associate Professor in Computer Science and Joint-Associate Professor in Health Informatics at the department of Health Informatics at CPHHI, KSAU-HS. He is specialized in data analysis and Artificial Intelligence. Dr. Alshammari is a member of many IEEE societies and review committees of several IEEE international conferences and journals. He is also an adjunct Faculty at the Faculty of Computer Science, Dalhousie University, Halifax, N.S., Canada

MANAL MANSOUR AL NEMARI
R.Ph., LSSBB, CAP

Manger, Pharmacy Informatics and Automation, Senior Pharmacist |
King Fahad Medical City

Transforming the Pharmacy Practice Through Implementing Robotic: Inpatient Setting

Automation is recommended as one potential mechanism to improve efficiency and patient safety. It has been proven that automation can enhance the efficiency of medication distribution and its capability to reduce medication errors during packaging, storing, dispensing and labeling. Ultimately, centerlized automated dispensing machines will increase patient safety and decrease human interfarence that may cause errors. Automation will also contirubte to streamlining hospital pharmacy operations, increasing accuracy, and enahncing staff utilziaiton.

Manal M. Al Nemari leads pharmacy informatics and automation in King Fahad Medical City (KFMC), Riyadh, Saudi Arabia. She is an experienced professional, having extensive knowledge and background with drug build, validation, testing, training and implementation of computerized physician order entry and robotics. She has been successfully leading the integration and Implementation of the first centralized robotics in inpatient setting in the middle east and the second in the world in terms of large sizes and complexity. Also She has been successfully leading the integration and Implementation of the first outpatient robotics with its Pharmacy management solution that help the outpatient pharmacies to handle the complexities of modern prescriptions in the KSA and in the world and the second in the world in terms of large sizes and complexity She is first Saudi female who have the experience of robotics technology for outpatient and inpatient setting, In addition, she is an advocate of incorporating quality tools such as Lean Six Sigma Black Belt, Change Acceleration Management, Kaizen 7 QC with pharmacy informatics technology. Her other roles involve leading strategic technology projects in pharmacy services administration in KFMC as a project manager for more than 10 years.

ABDULLAH MOSA ALHAMMAD

BSc, PharmD, BCPS, BCCCP

Assitant Professor and Manger of Clinical Pharmacy Services | King Saud University

Does Certification Mean Qualification in Pharmacy Practice

Advancing pharmacy practice requires one to possess a competency level of knowledge, skills, and experience, which are provided through training (e.g., postgraduate residency training, master of clinical pharmacy) and practice experience, and validated through independent assessment (e.g., certification). Questions remain about can you be qualified without a certification. This is what I'm going to address about this point.

Abdullah M. Alhammad, BSc, PharmD, BCPS, BCCCP is an Assistant Professor of Clinical Pharmacy at the College of Pharmacy, King Saud University (KSU), Riyadh, KSA. He has been working as a manager of acute and clinical pharmacy services in addition to drug & information poisoning center at King Khalid University Hospital (KKUH)-King Saud University Medical City (KSUMC) since August 2017. He is also serving as a clinical pharmacy consultant in critical care and director of PGY-2 critical care pharmacy residency program KSUMC since 2016. Alhammad earned his Bachelor of Science in Pharmacy from KSU in 2005, and his Doctor of Pharmacy degree at the Massachusetts College of Pharmacy & Health Sciences in Boston, MA, USA in 2011. He then completed an ASHP-accredited Postgraduate Year – 1 (PGY-1) Pharmacy Practice and PGY-2 Critical Care Specialty Residency at Brigham & Women's Hospital, Boston, MA, followed by a fellowship in critical care pharmacy from Northeastern University/Tufts Medical Center in Boston, MA. He is board-certified pharmacotherapy specialist and board-certified critical care pharmacist by the Board of Pharmacy Specialties. Alhammad has an active role in academia. He lectures in several therapeutic courses for graduate and post-graduate programs, supervises and co-percept research projects for learners, and works on various committees to improve the quality of training and education. During the time at the KKUH-KSUMC, he served as director of PGY1 pharmacy residency for three years. He led with other co-workers' champions to achieve ASHP accreditation for the program at 2019. Additionally, he is responsible for acute care and clinical pharmacy services from operational and clinical pharmacy practice standpoints. His responsibilities include but not limited to adapt and implement pillars of pharmacy practice initiative (PAI), formulary management through pharmacy and therapeutic committee, represent the pharmacy services in multidisciplinary committees to improve patient care, and contribute to quality improvement initiatives. Furthermore, Alhammad is dedicated to advance patient care in the ICU, percept and mentor learners, and conduct clinical research.

MUKHTAR JAWAD ALOMAR
Pharm.D, BCPS

Internal medicine clinical pharmacist | Dammam Medical Complex

Solving A Clinical Dilemma

Clinical decisions are difficult for various reasons. There may be a lack of evidence or conflicting evidence. The choices may involve uncertainty about how possible outcomes should be valued and by whom, or conflicting values, such as prolonging life versus quality of life. The outcomes may include a complex mix of benefits and harms, so that the trade-offs are difficult to resolve, even if we are clear about our own values. Such decisions may be characterized as clinical dilemmas, for there are at least two options in the choice set and it is not clear which is preferable and according to which criteria. So, solving the clinical dilemmas need a high skill and critical appraisal for the current and recent evidence.

Dr. Alomar is a clinical pharmacist-internal medicine pharmacotherapy specialist at Dammam Medical Complex (DMC), First Health cluster in Eastern Province. In 2014, Dr. Alomar received a Pharm.D degree from King Faisal University, and Joined king Fahad medical city (KFMC) in Riyadh as clinical pharmacy resident. In 2016, Obtained Diploma in Clinical pharmacy practice from Saudi council of health specialty. In 2017, In-charge of main inpatient pharmacy at KFMC. In 2018, Internal medicine clinical pharmacy resident, King Saud university medical city (KSUMC). In 2019, Clinical pharmacist-internal medicine pharmacotherapy specialist at KFMC. Now, Head of clinical pharmacy service at DMC, supervisor of pharmacy academic and training, Residency Educational Activities coordinator in the First Health cluster in Eastern Province residency program and internal medicine clinical pharmacist. Dr. Alomar is board certified as Pharmacotherapy Specialist (BCPS) and a member of several societies and committees. Dr. Alomar's areas of interest include internal medicine, research, and academia.

AHMED OWAYID ALENAZI

Bsc. Pharm, pharmD, CACP

Critical Care Clinical Pharmacist | Imam Abdulrahman Bin Faisal Hospital - Ministry of National Guard Health Affairs

Hyperkalemia Management for Critical Ill Patient

The urgency of hyperkalemia managment varies with the presence or absence of the symptoms and signs associated with hyperkalemia, the severity of the potassium elevation, and the cause of hyperkalemia.

Dr. Ahmed Alenazi is a Senior Pharmacist of Clinical Pharmacist practice in Critical Care (Adult ICU at Imam Abdulrahman Bin Faisal Hospital - Ministry of National Guard Health Affairs in Dammam. He received his Bachelor's degree in pharmacy from King Saud University, KSA in 2002 followed by Pharm.D degree from MCPHS University, United States in 2014. He completed a PGY1 pharmacy practice residency with emphasis in critical care area in the ER & ICU at the Columbus Regional Health System, United States in 2015. He trained and certified as Anticoagulant Care Provider (CACP) from Connecticut University, USA since 2018. Upon completion of his residency and training, he worked as a clinical pharmacist specialized in the critical care (adult ICU), Clinical Pharmacy section team leader and in-charge clinical pharmacist for anticoagulation clinic at Ministry of National Guard Health Affairs, Dammam. He is an instructor of Advance Cardiovascular Life Support (ACLS) form American Heart Associations since 2017. Dr. Alenazi is a member of Critical Care and Emergency Medicine Pharmacy Specialty Network (CC&ER- PSN) group. He is currently member of many committees in National Guard Health Affair, such as Corporate Specialty Board for Pharmacists, Pharmacy and Therapeutic (P&T), Cardiopulmonary Resuscitation (CPR), and Medication Safety Program (MSP). Dr. Alenazi participated and author many research publication and presentations. He is also presented many Pharmacy and medical education sessions locally and internationally. His research interests include de-resuscitation, hemodynamics and perfusion, and sepsis.

ABDULLAH ADNAN ALHIFANY
PharmD

Assistant Professor of Clinical Pharmacy | Umm Al Qura University

Assistant Professor of Clinical Pharmacy

Updates in Diabetes Mellitus Management per recent guidelines

Dr. Abdullah Alhifany is an Assistant Professor of Clinical Pharmacy at Umm Al-Qura University College of Pharmacy. He is currently assigned as the Vice Dean for Training Affairs and the coordinator for the Master of Clinical Pharmacy Program. Dr. Alhifany earned his PharmD from MCPHS University, Massachusetts, USA. He did his Clinical Residency training in Columbus Regional Health in the State of Georgia and his Fellowship training from the University of Arizona. He has a total of 6 research grants accepted from the Deanship of Scientific Research at Umm Al-Qura University and KACST
And he contributed to 25 publications in ISI indexed journals and wrote multiple educational articles in the field of Pharmacy and Research to Saudi Newspapers (Sabq and Medinah).

Workshops

ESSAM MAHMOUD HAFEZ MOHAMMED
MD

Consultant toxicologist | Dammam Poison control Center

Electronic System Driven Toxidromes and Toxicology Case Scenarios

Workshop objectives
- Discussing general approach of acutely intoxicated patients
- Develop and practice a systematic approach to toxicological emergencies.
- Review common poisoning toxidromes
- Discuss various toxicological case scenarios presenting to the ER and learn how to deal with them.

Dr. Essam Mahmoud Hafez Mohammed is a Clinical Toxicology Consultant, a Quality Management Director of the Regional Poison Control Centre-Dammam, Eastern Province-MOH, Saudi Arabia, and a Professor of Clinical Toxicology, Minia Faculty of medicine, Egypt. Dr. Essam research interests are Toxicology; Clinical Toxicology, Analytical Toxicology, Occupational Toxicology, Drug and Alcohol Abuse and Electronic health. Dr. Essam M. Hafez, has completed his Doctorate degree in Clinical Toxicology in 2007, from the Faculty of Medicine, Minia University, Egypt. He has completed his diploma in Internal Medicine from Alazhar University, Egypt. He has completed his diploma in Hospital Management from Faculty of Commerce, Ain Shams University, Egypt. He has also completed his diploma in Medical Law, from Faculty of Law, Beni-suief University, Egypt. He started his career at Minia university hospitals as resident where he gained his clinical experience and training also from Cairo poison control centre, Ain Shams university(CPCC). Now he serves as Prof. of Clinical Toxicology, at Minia Faculty of Medicine, also he is currently working as a consultant of Clinical Toxicology & Quality Management Director in Regional Poison Control Center-Dammam, MOH, Saudi Arabia. He supervised a number of MD & MSc theses. He published many researches in reputable specialized National & International Journals and serves as Reviewer in many specialized peer-reviewed journals. He is also a member of many specialized societies and bodies in the field of clinical Toxicology.

AMR MOHAMED TAWFIK KHATTAB
MD

Clinical Toxicology Consultant | Dammam Poison Control Center

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Workshop objectives
- Discussing general approach of acutely intoxicated patients
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Dr. Khattab has an M.B.B.Ch, Bachelor degree in Medicine & General Surgery, Cairo University and graduated with an Excellent Grade with Honor in 2004. In 2011, he completed a Master Degree in Forensic Medicine and Clinical Toxicology faculty of medicine Cairo University. In 2012, he completed an ESPEN European Diploma in Clinical Nutrition and Metabolism. Also, he graduated with an MD degree in Forensic and Clinical Toxicology faculty of medicine Cairo University in 2014. Dr. Khattab is a Lecturer Forensic Medicine & Clinical Toxicology Department, Faculty of medicine, Cairo university since 2015. He is also a Clinical Toxicology Consultant at Dammam Poison Control Center since 2019. His practical and research activities extensively cover the fields related to forensic/legal medicine, Clinical toxicology, Analytical toxicology.

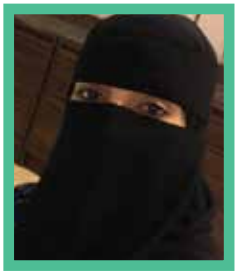
ABDULLAH RZGALLAH ALZAHRANI
PhD, MSc, MPharm

Assistant Professor of Pharmacology and Toxicology | Umm Al Qura University

Assistant Professor of Pharmacology and Toxicology

This workshop will outline the steps required for toxicology research. The role of toxicologists in various areas such as molecular and cellular toxicology, clinical toxicology, forensic toxicology and other areas will be discussed. The workshop will finish by explaining the concepts of 3Rs and how it is applied in toxicological research.

Dr. Abdullah Alzahrani is currently working as assistant Professor at the department of Pharmacology and Toxicology, Faculty of Medicine at Umm Al-Qura university. Before 2020, he spent 12 years in the UK for Education. He has Master of Pharmacy (MPharm) with Honors degree from Liverpool John Moores university in 2013, then moved to University of Birmimgham and gained MSc in Toxicology with Distinction in 2014, finally moved to Glasgow and gained my PhD from the University of Strathclyde in the area of Pharmacology and Toxicology of natural products at the end of 2019. Dr. Alzahrani is a member of various professional bodies, including: Royal Pharmaceutical society, British Toxicology Society, British Pharmacology Society and Saudi Toxicology Society. He is also a co-founder for the Glasgow Pharmacological Society.



FAKHR AL-AYOUBI
BPharm, MSc, R Ph, MBA

Intensivist Cardiology Clinical Pharmacist and Adjunct Assistant Professor, College of Pharmacy | King Saud University

How Can Pharmacists Establish and Run MTM Clinic?

The role of pharmacist in the multi-disciplinary model is to ensure the availability of therapy, to ensure the initiation of the right medications for all patients, to avoid drug-food interactions, and to achieve targeted therapy. Pharmacists who implement Medication Therapy Management "MTM" programs can gain a lot of benefits such as patient and physician loyalties, financial compensation, and professional satisfaction. MTM pharmacists might face some obstacles in which they should work to remove those obstacles and become solution-oriented not problem-focused. Pharmacists are being measured on quality which links to revenue; whether directly or indirectly and whether today or tomorrow. If pharmacists do not change and focus on those new revenue opportunities, they may be removed from networks before they decide to do it.

Dr. Fakhr Zohair Al-Ayoubi is an Intensives Clinical Cardiology Pharmacist & residency in Clinical Toxicology, and Heart Failure specialist, Adjunct Assistant Professor College of Pharmacy, and King Saud University. She is Research Coordinator at King Fahed Cardiac Center & College of Medicine, King Khalid University Hospital (KKUH), Riyadh, Kingdom of Saudi Arabia. She has also served as Assistant Director of Clinical Pharmacy Service and Assistant Director of Ambulatory Care at KKUH. Prior to this, she served as Pharmacy Department Representative of the KSUMC Health Education Committee Pharmacy therapeutic committee contenous education committee for several years. As a clinical pharmacist, her responsibilities included coordinating the joint residency program in KKUH and the therapeutic Continuous Education programs for pharmacy staff and students. Dr Al-Ayoubi has published in regional and international peer-reviewed journals and has been invited to speak at local and regional conferences. Her research interests include heart disease, anti-coagulant therapy, diabetes mellitus, prevention of poisoning (especially among children), and community education and awareness. She is a member of several scientific associations including the Saudi Pharmaceutical Society, the Saudi Heart Association the American Society of Health-System Pharmacists, the Endocrine Monthly Club Team and Diabetic Club, the American College of Clinical Pharmacy, and the Saudi Council for Health Specialties. She is also a member of the Poisoning Management Team of Saudi FDA. Finally, she is now the president of the clinical pharmacist group at the Saudi Heart Association.

AMER ALI ALMOHSSEN
MD, FAAD, FASD

Dermatologist and Dermatopathologist | Dammam Medical Complex

An Approach to Mastering Cosmetics

This workshop provides an overview of the most commonly used cosmetics products in dermatology, with an emphasis on the side effects and toxicities related to the use of these different products.

Dr. Amer Almohssen is an American Trained & double-board certified in Dermatology Dermatopathology with an interest in medical, surgical, and cosmetic dermatology including procedures such as skin peels, laser treatments, photodynamic therapy, and skin cancer treatment & surgical excisions. He is also very interested in medical education.

NABIL AWAD IWEIR
MT

Commercial Director | Commercial Director

You Not They Decide Your Career Path: Self-Accountability

Sharing here with you what was learned over the past years in relation to self-development, being different, what matters when it comes to career path beyond the technical core job responsibilities, looking in to simple recipes that differentiate A players from C players in relation to competencies that are shared between jobs as core and leadership ones. The theme of the workshop is focusing on self-accountability and deciding your path, sharing true inspirational stories that I self-witnessed of exceptional performers that we all can learn from and reflect on what we do day in day out.

Nabil Iweir, has 30 years of health care commercial experience much of it in leadership positions including Sales, Marketing, General management and regional director, Nabil worked in positions in Saudi Arabia, UAE, Germany, UK and Jordan. During which he covered ME region, Africa, West Asia and Turkey. He worked for King Faisal Hospital laboratories, Abbott Diagnostics Company, Abbott Saudi Arabia Trading, Binding Site and Al Jeel company. Nabil is a certified CSS trainer and passionate about people development. He is Married with 3 children. He graduated from Jordan University of Science and technology as Medical Technologist with honorable degree. He Attended different levels of leadership developmental programs, selling skills, negotiation skills, coaching and counselling, strategic thinking etc.

ZAHRA HUSSAIN ALSHABEEB

BSc. , Pharm D , MSc. Candidate in Clinical Pharmacy

Clinical pharmacist | Erada Complex and Mental Health - Dammam

Root Cause Analysis of Medication Errors

The provision of safe and effective medication practice is a complex process and often challenging. There are multiple weaknesses present within the hospital system which can lead to medication errors. Medication Errors incident analysis is an important organizational safety effort. Root cause analysis is considered one of the Continuous Quality Improvement (CQI) programs.
This workshop aims to provide all health-care workers and managers with an insight on how to:

- Identify the processes that could benefit from root cause analysis
- Conduct a thorough and credible root cause analysis with case examples
- Interpret analysis results
- Develop and implement an action plan for improvement
- Assess the effectiveness of risk reduction efforts

Zahra Hussain Al Shabeeb has an BSc in Pharmaceutical Sciences from King Saud University, Riyadh. Al Shabeeb is also a Pharm D & MSc in Clinical Pharmacy candidate. She is certified Medication safety officer, certified Drug Information pharmacist and certified Professional Healthcare Trainer of Trainers. Al Shabeeb is a member of 937 MOH National Drug Information Call Center. She had previously been the Editor in Chief of East Pharmacist Bulletin. In 2018, she won the Best Pharmacist Award in the Eastern province. She served as a Chairperson of Drug Information Committee and a member of Medication Errors Prevention sub-Committee in the Pharmaceutical Care Eastern Health. In addition, she served as a member & coordinator of Pharmacy and Therapeutics Committee, Medication safety Committee in Erada complex for mental health- Dammam. Al Shabeeb has participated in many local and international conferences and courses.

AHMED HASAN AL ZOYED
M.Ed.

Manager | HCI Training

Using Social Media for Designing and Spreading Pharmacy Knowledge

It has become necessary to take advantage of social networking sites such as Twitter and YouTube to raise the level of knowledge in the field of pharmacology and toxicology, or to employ this type of media in facilitating the understanding and learning of pharmacy for beginners and students. But in order to succeed in achieving this goal, we need a clear educational methodology that facilitates the building of educational content, and this short workshop focuses on achieving this goal.

Ahmed Al Zoyed studied chemistry and obtained his bachelor's degree in 1988 from King Faisal University in Al-Ahsa, Saudi Arabia, and then he set out to work as a teacher of chemistry for high school students in schools affiliated with the Education ministries. In 2008, he finished the Master Program in Curricula and Teaching Methods from the Department of Education at the University of Aden in the Republic of Yemen. After which, he went to work as a trainer for teachers in the Training Department of the AlAhsa Education Directorate, where he trained more than 5,000 teachers and students. He also worked as a developer and evaluator of chemistry curricula at the Ministry of Education by participating in educational curriculum development committees, and finally after 26 years in teaching high school students, he retired from education and went to provide training and consultations in the field of training and content building and educational curricula.

ABDULLAH ESSA ABDULLAH ALKHAMES
Pharm.D

Store manager | Boots

Mastering Cosmetics Skills to Be Cosmetics Pharmacists

The role of cosmetics is not limited to covering imperfections, but extends to preventing skin cancers and resisting signs of skin aging. Pharmacists should be familiar with many cosmetics products, especially moisturizing creams, exfoliation and sunscreens. The pharmacists can help in choosing the products that are best for his customers; taking into consideration of skin sensitivity, types of skin, and problems associated with them.

In 2016, Dr. Alkhames received his Pharm.D degree from King Faisal University, and Joined Boots Beauty, Health and Pharmacy as a Store Manager in Alahsa, Saudi Arabia.

SAAD RASHED ALRASHED
Pharm.D

Pharmacist | Prince Sultan Military Medical City

Twitter as A Tool for Sharing Pharmacy Knowledge

In this workshop, the speakers will be sharing my experience on using Twitter As tool for medical education. During this lecture, we will discuss the following:

- How to do a perfect thread?
- How to boost your impact?
- How to manage your time with social media?
- Advantage & disadvantage of using Twitter as a tool for sharing knowledge.
- Apps & ways to improve knowl edge.

Saad Rashed Alrashed is a PharmD candidate in Almaafah University (with expected graduation in May 2021). He is currently doing the internship at Prince Sultan Military Medical City (PSMMC). In addition, Saad is a social media educator disseminating pharmacy knowledge through social media and who has more than 60k followers in Twitter. He is interested in medical education specially pharmacotherapy, updated guidelines, recommendations, and leadership skills.

Acknowledgement for Our Moderators

KSAPT2020 Executive Committee would like to express special thanks of gratitude to the workshops and sessions moderators as well as ceremony moderators for their invaluable contributions in making our program successful.

WORKSHOPS AND SESSIONS MODERATORS

- **Prof. Nahla Ayoub**
- **Dr. Sitah Alzoman**
- **Dr. Abdulaziz Almulhim**
- **Dr. Anwar Almusallam**
- **Dr. Hadeel Anan**
- **Dr. Nabil Kamas**

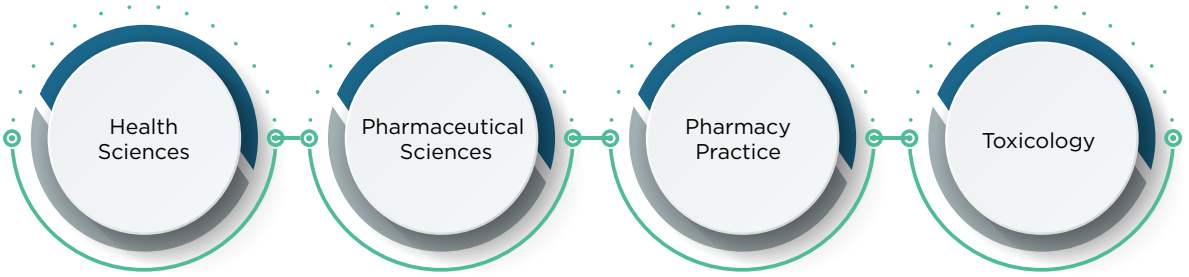
CEREMONY MODERATORS

- **Dr. Abdullah Alanazi**
- **Yasmeen Alyousef**

RESEARCH POSTER COMPETITION REPORT

AIMS AND OBJECTIVES OF RESEARCH POSTER COMPETITION

The Research Poster Competition aims to present innovation and excellence in research projects conducted by researchers in Pharmacy & Toxicology. Accepted research topics are categorized under one of the following Tracks:



The main objectives of the competition are

- To provide an opportunity for researchers to have their projects presented at a prestigious event.
- To exhibit the superb quality of national and international research ideas and projects.
- To promote students and junior researchers to have their projects endorsed to the Scientific and Professional Communities.
- To publish the research findings produced by professionals and experts in the Conference preset tracks.

Figure 1: Abstracts Distribution Based on Cities

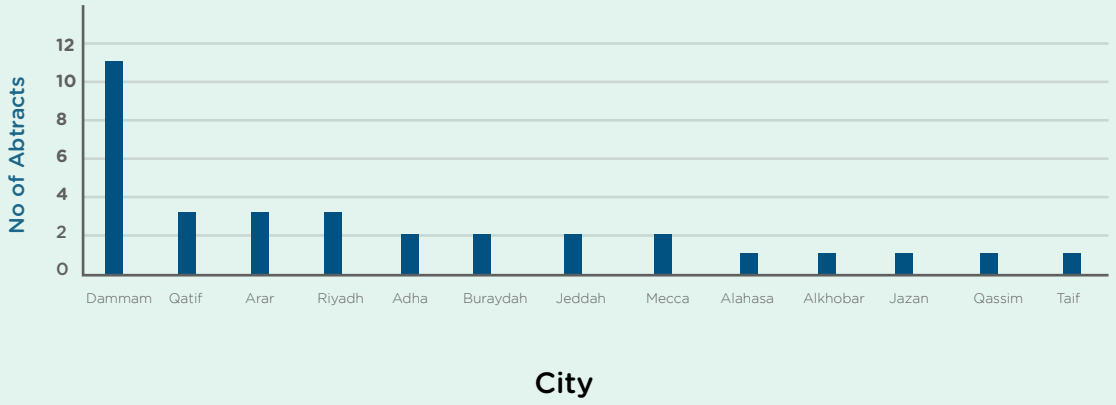
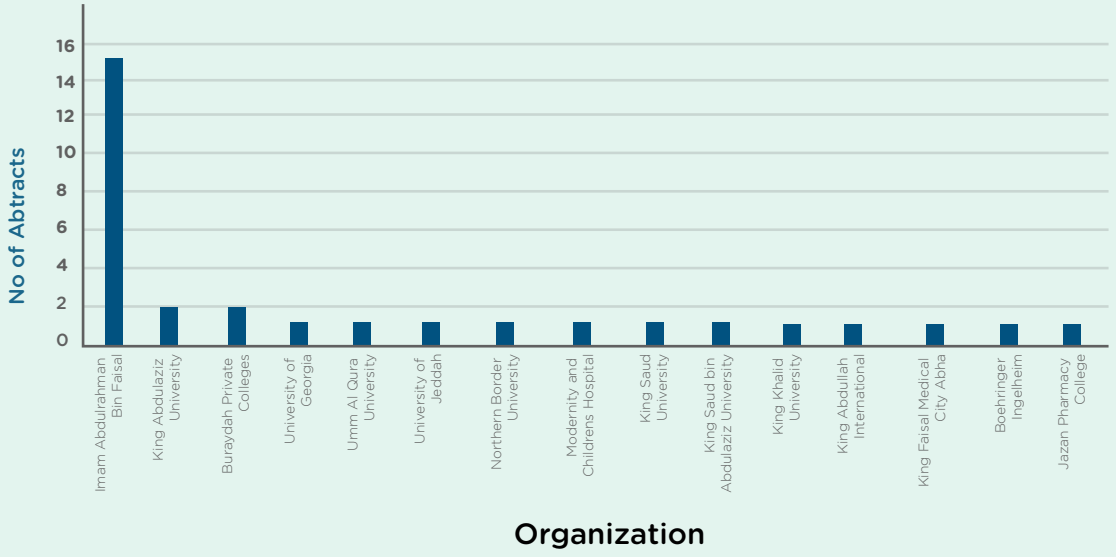


Figure 2: Abstracts Distribution Based on Organization



CONDUCTION OF THE RESEARCH POSTER ASSESSMENT

The submitted posters and recorded 3-Minute videos were all sent to the Research Poster Competition Evaluation Committee members. Each Committee member has submitted their evaluation individually for each of the 20 posters to the Evaluation Committee Chair. The Evaluation Committee Chair received the anonymous evaluation and compiled the nominations together. The submission or presenting author for each of the Top-10 nominated posters was contacted again to inform them regarding their nomination to the Top-10 and were given instructions regarding the Panel Discussion with the Evaluation Committee. They all accepted and confirmed their availability and presence for the Discussion, whereas 8 were available virtually, and 2 were available in person at the Conference site. The Evaluation Committee members have scored the Top-10 Participants again using the pre-designed rubrics. The final scoring was discussed amongst the Evaluation Committee members who had the Names of the Top 5 winners sealed in an envelope submitted only to the organization committee on the Ceremony & Awards day. The winners were announced live in public during the ceremony, and the award certificates and presents were distributed on the day or delivered afterward.

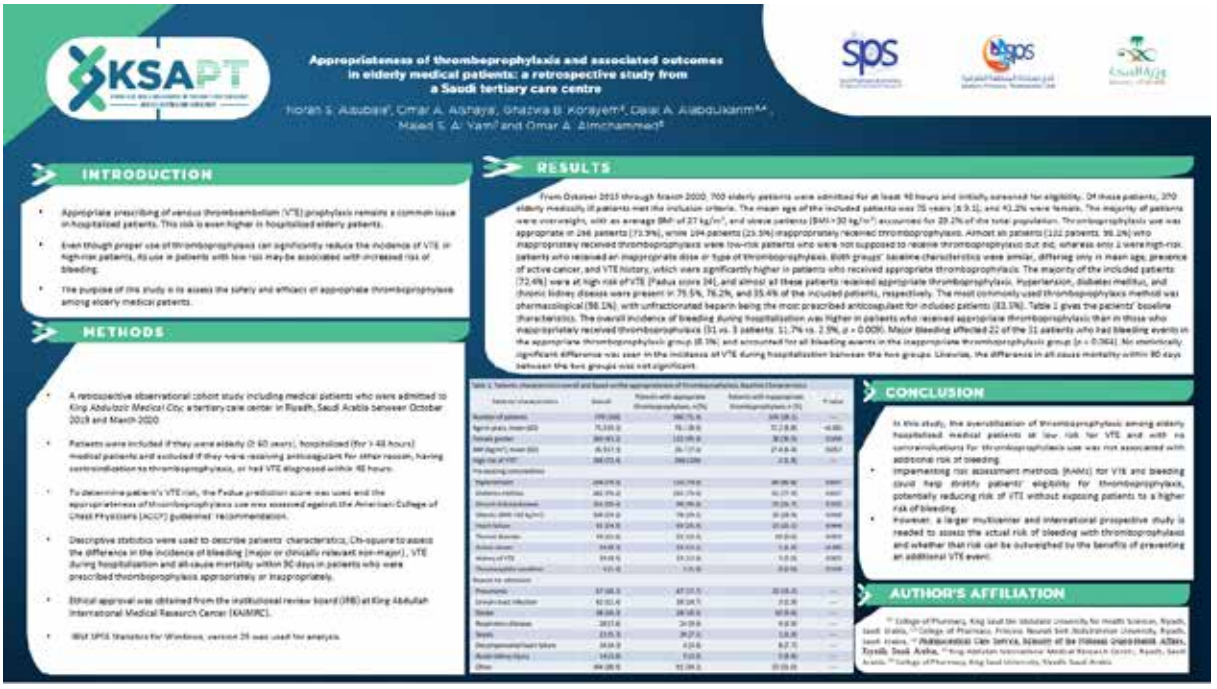
MAJOR STRENGTHS

CONCLUSION

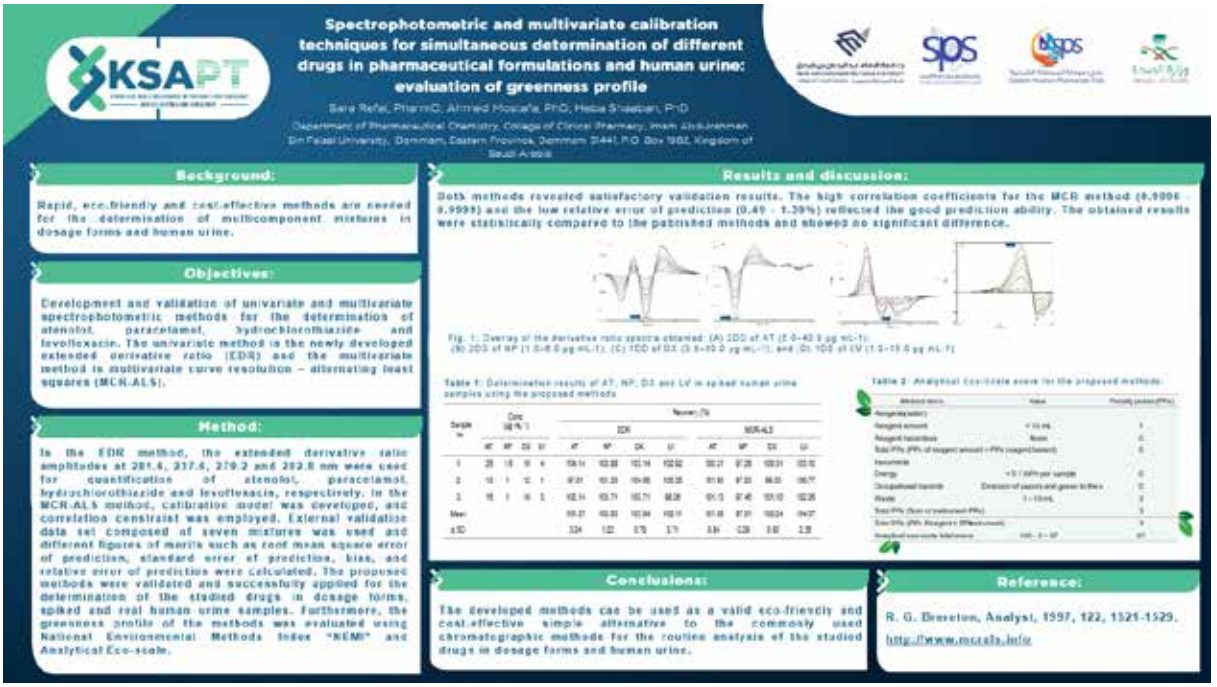
The procedures and guidelines were rigorous, and we took a lot of e ort to ensure qualitative research posters are accepted and enrolled in the competition. Research Poster Competition at KSAPT 2020 was a success and was applauded by all. From participants to the community and created a window for some new and exciting learning opportunities. KSAPT 2021, we look forward to 10X more participants and unlimited learning opportunities.

Winning Posters

1st Winner

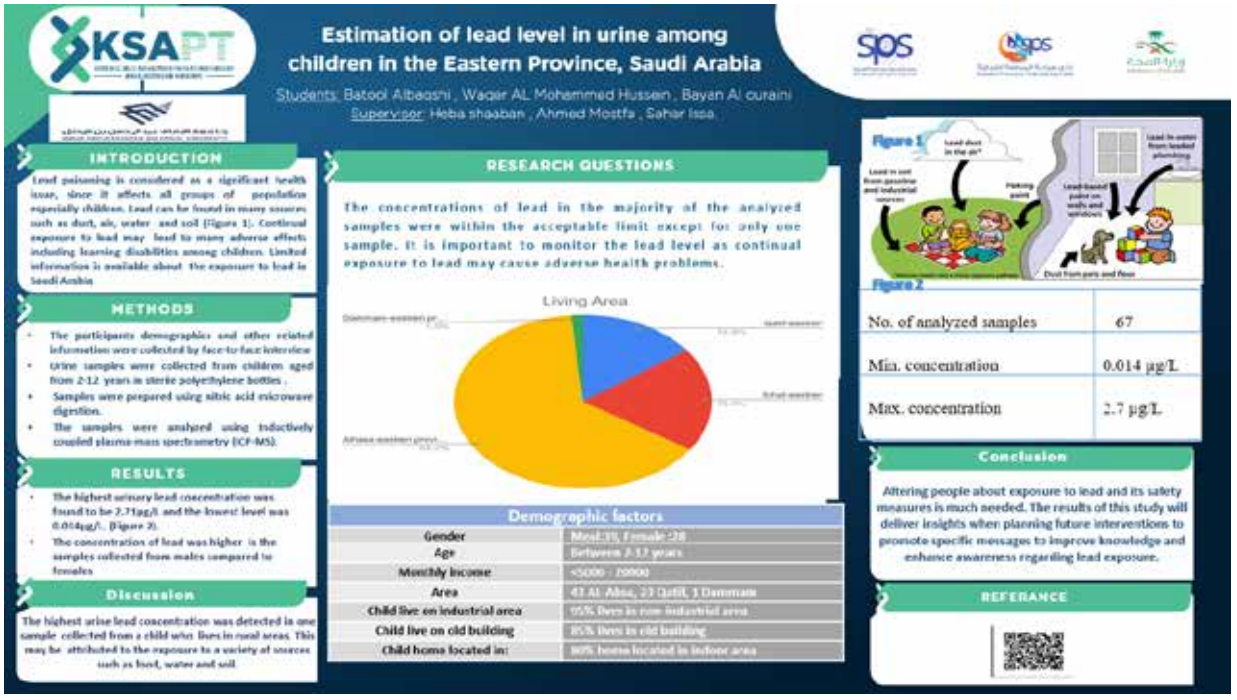


2nd Winner

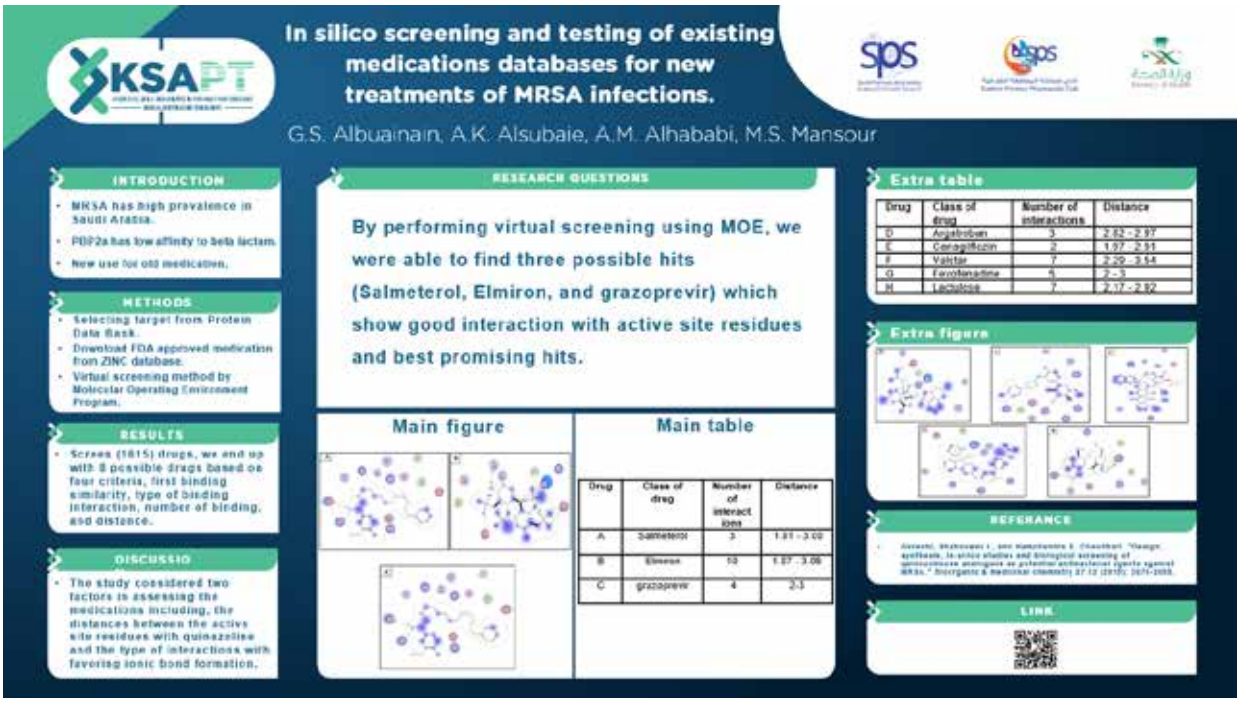


Winning Posters

3rd Winner

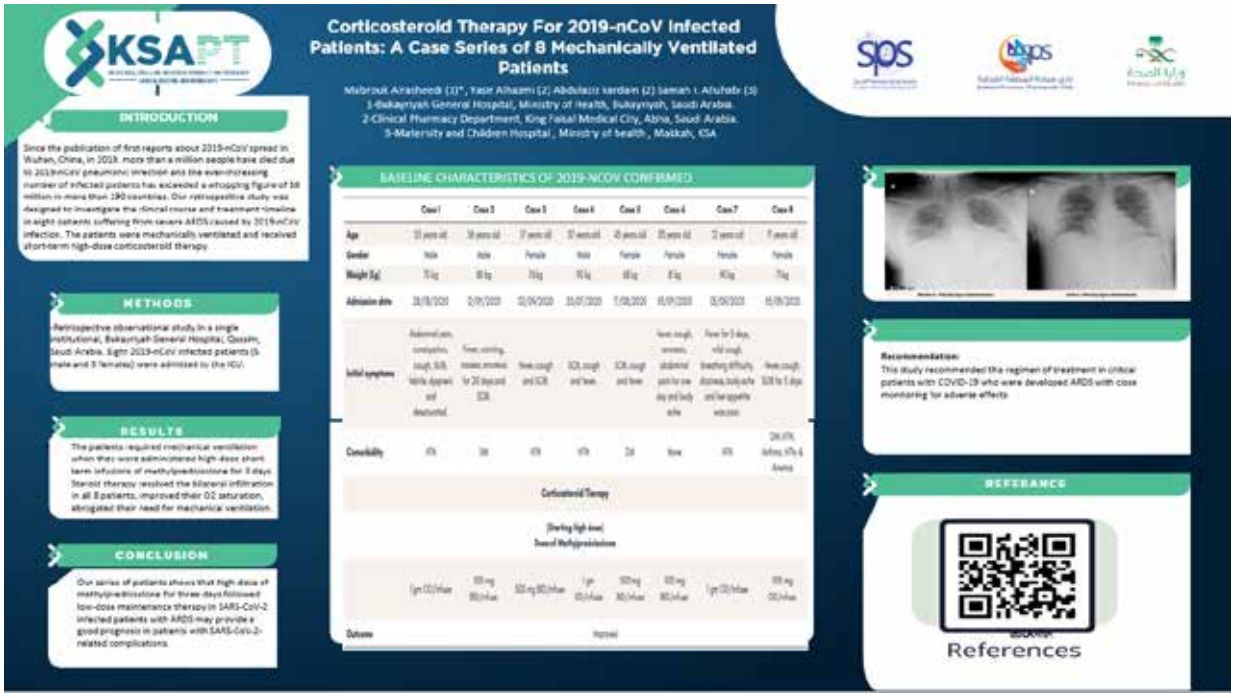


4th Winner



Winning Posters

5th Winner



Abstracts

HEALTH SCIENCES TRACK

AWARENESS OF BREAST CANCER AND EARLY DETECTION TECHNIQUES AMONG UNDERGRADUATE FEMALE STUDENTS AT A PUBLIC SECTOR UNIVERSITY IN DAMMAM, SAUDI ARABIA

Ghadeer Aleid, Ghadeer Alhawaj, Atheer Alenzi, Aseel Fuad Al-Karasneh
College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University

Abstract:
Background: Breast cancer (BC) starts in the breast as cells begin to uncontrollably grow. These breast cancer cells tend to form a tumor that can either be felt as a lump or seen on an x-ray. There are several risk factors that lead to breast cancer occurrence, such as age and race. A report done in Arab countries showed that the incidence of breast cancer is about 10 years younger than in European countries and the USA. A few studies have been done to initiate the awareness of breast cancer in Saudi Arabia to study the awareness level of breast cancer among Saudi females. The center of attention of these studies was on risk factors, warning signs, self-examinations, and screening programs. This study, aiming to determine female undergraduate students' knowledge and attitude towards Breast cancer, breast screening and techniques for early detection and to describe the level of knowledge about breast cancer screening and breast cancer risk factors according to sociodemographic characteristics and to know the most common source of their knowledge among the females participating in this study. Methodology: a cross-sectional study carried out from November 2019 to March 2020 in female students in the Imam Abdulrahman Bin Faisal University. A self-administered questionnaire consists of four sections was used as a tool for data collection. The sample size was calculated based on disease prevalence through an online sample size calculator. The required sample size was 283 patients. Result: Of the 413 respondents, 63.9.7% were single, the prevalence of breast cancer in family was 20.9%. Besides, 38.69% had low awareness but 65.48% good level of knowledge regarding breast cancer. 54.05% appeared welcoming to the idea of breast screening, 95.59% indicated their no discomfort in discussing the topic, whereas 63.96% preferred a female physician. Conclusion: The findings are encouraging for public awareness about how to screen themselves and guidance to health authorities for developing effective breast healthcare programs in the entire Kingdom for the all-female population.

PATTERN OF CANCER IN ARAR, SAUDI ARABIA: A CROSS-SECTIONAL STUDY

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Abstract:
Introduction: Cancer is the second cause of death worldwide after cardiovascular diseases. Cancer pattern and incidence differs from region to region. Multifactorial etiologies may be implicated in the pathogenesis of cancer; obesity, tobacco use, drinking alcohol, imbalanced diet and lack of physical activity. The data published regarding pattern of cancer in Northern Border Region of Saudi Arabia is little despite the fact that awareness of the most common types of cancer help in identifying risk factors and control opportunities. Objective: The study objective was to identify the pattern of cancer in Arar, Saudi Arabia (capital of Northern Borders Province). Methodology: A descriptive cross-sectional design was used to carry out this study for the period between 1st January to end of December 2019 on 88 cancer patients referred to cancer center in Arar. Only patients with histologically proven malignancy were included in the study. Descriptive statistics used for data analysis by statistical package for social science (spss). Results: sixty-one (69%) patients were females, twenty-four (27%) patients were older than 65 years, among the patients diagnosed with malignant cancer; there were sixty-five (72%) patients diagnosed with cancer related to organs and twenty-three (28%) patients diagnosed with cancer related to blood. Twenty-one (26%) women diagnosed had cancer in female reproductive system; among them, there were fifteen (72%) diagnosed with breast cancer. Twenty-three patients (28%) had leukemia; among them, there were six (26%) patients diagnosed with chronic myeloproliferative leukemia and four (17%) patients diagnosed with non-Hodgkin lymphoma. Eight (50%) of patients had cancer related to digestive system diagnosed with colorectal cancer. Conclusion: the cancer in northern border province is more prevalent among females and elderly. Breast cancer is the most common cancer type followed by leukemia.

PHANTOM VIBRATION SYNDROME AND EXCESSIVE MOBILE USE IN THE SAUDI SOCIETY

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Abstract:
Background: Phantom vibration syndrome is a type of hallucination reported among mobile phone users in the general population. Also, it can be described as false feeling and sensation of phone vibrating when it is not. First term used of phantom vibration syndrome was phantom-pager syndrome in 1996, then changed to Phantom vibration syndrome in 2003. Phantom vibration Syndrome is listed under the category "techno-pathology", the overuse of technology may cause pathological conditions known as techno pathology and it has been worsening both physical illness and mental health. Phantom vibration may result from excessive use of mobile phone according to many studies done in middle East. Purpose: To fill this gap, this study is the first study done in Saudi Arabia on phantom vibration, finding the prevalence of phantom vibration in Saudi Arabia and factors associated with its development. Methodology: A cross-sectional study was performed with a random sampling. A self-administered questionnaire was disseminated among 797 participants in Saudi Arabia. The questionnaire consisted of two parts: socio-demographic and factor associated with Phantom vibration. Results: Of the 797 participants who answered the question, 272 (32%) reported having experienced phantom vibrations. Most (53%) find that feeling bother them & there was a significant association between phantom vibration and using social webs such as Instagram & WhatsApp. Almost 70% of the precipitant use their smarts phone more than 4 hours per day. Three factors were independently associated with phantom vibrations: occupation, device location, and hours carried. Conclusions Phantom vibration syndrome is common among those who use electronic devices. This study recommended that research must be done to evaluate the long-term impairment of misusing smart phones.

ASSOCIATION OF COMORBIDITY CONDITIONS AND MORTALITY BETWEEN CHRONIC KIDNEY DISEASE PATIENTS ON HEMODIALYSIS IN DIAVERUM KIDNEY CENTERS, AL-QASSIM, SAUDI ARABIA

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Abstract
The kidney functions as an excretory, biosynthetic, metabolic organ and vital for maintaining normal physiology. Although dialysis can replace the kidney functions it can't replace the biosynthetic and metabolic activities of the normal kidney Aim: The present study aimed to identify complications in patients with chronic renal failure undergoing hemodialysis. The clinical outcomes such as Hb levels, CrCl, GFR, and the most important medicines prescribed, reduce the Drug-Drug interactions. Method: Study design is retrospective observational cross-sectional study and the study took place in Diaverum Kidney Centers in Al-Qassim, Saudi Arabia. Data collection included 59 patients with End stage renal disease on regular hemodialysis at Diaverum Kidney Centers. Data were collected from patient's records after ethical consent has been provided. Result: A total of 59 patients were included in the study. Whole study group results revealed that 57% (34) were males and 43% (25) were females. The mean age was 64.28 years. Mortality rate per 1-year was found to be 4.55%. The leading cause of death in our study were Cardiac (22.03), Livers diseases (6.77%) and infections (15%). The parameters of the study showed decrease in value of hemoglobin and decrease in calcium specially in cardiac patients. While values of phosphate were showed higher in all patients and more increased in patients with livers diseases
About the prescribed medications, the sevelamer ranked first (24 times), followed by calcium carbonate (22 times), omeprazole (19 times), and simvastatin (16 times), neurobion (15 times). Conclusion: This study showed that hemodialysis in CKD patients producing many comorbid conditions leading to a high rate of death.

ROLE OF RENIN ANGIOTENSIN-II SYSTEM IN GEFITINIB- INDUCED CARDIOTOXICITY

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Abstract:
Background: Gefitinib (GEF) is multi-targeted tyrosine kinase inhibitor for treatment of non-small cell lung cancer. Recently, studies have found a positive correlation between gefitinib treatment and cardiac damage leading to cardiotoxicity and cardiac hypertrophy. The mechanistic of gefitinib-induced cardiac hypertrophy is still not fully understood. However, the purpose of the current study is to identify the role of renin angiotensin-II system in gefitinib-induced cardiac hypertrophy through targeting angiotensin-II type 1 receptor (AT1) via valsartan (VAL) treatment. Methods: A group of male Wistar albino rats (n=32) were divided into four groups (n= 8 per group). First and second groups were treated with vehicle and VAL (30mg/kg/day) for 28 days, respectively. Third group was treated with vehicle for 7 days and then received GEF (30mg/kg/day) for 21 consecutive days. Fourth group was treated with VAL for 7 days and continued 21 days with VAL+GEF treatment. On day 28th, all rats were anesthetized for samples collection to be analyzed. Results: In the current study, we found that renin angiotensin-II system has a pivotal role in induction of GEF-induced cardiac hypertrophy through activation of MAP kinase pathway and NADPH oxidase leading to oxidative stress and cardiac injuries. Inhibition of AT1 via VAL treatment successfully attenuated GEF-induced cardiac hypertrophy through deactivation of MAP kinase pathway and NADPH oxidase. Conclusions: In summary, we confirmed that renin angiotensin-II system has a critical role in gefitinib-induced cardiotoxicity and cardiac hypertrophy. However, blocking AT1 receptor via VAL can be considered as a cardio-protective mechanism in prevention of gefitinib-induced cardiotoxicity.

IN SILICO SCREENING AND TESTING OF EXISTING MEDICATIONS DATABASE FOR NEW TREATMENTS OF MRSA INFECTIONS

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Abstract:
Infectious diseases are leading causes of death worldwide. The Gram-positive bacterium Staphylococcus aureus is a global concern, considering broad resistance to most available treatment options. Currently, available medications are limited to vancomycin and daptomycin as antibiotic of choice which are associated with lots of side effects. Penicillin-binding protein (PBP), is an important enzyme in the bacterial cell wall biosynthesis that maintains bacterial cell integration. In S. aureus, there exist four native PBPs: 1,2,3 and 4. There is a fifth PBP in methicillin resistant staphylococcus aureus (MRSA), namely PBP2a. The resistance determinant in MRSA was encoded by the gene mecAPBP2a. Therefore, PBP2a is an important target to overcome the problem of bacterial resistance and finding new and safe medications. The aim of the study is to perform an in-silico screening of all available drugs against PBP2a to find a safe and effective hit. This study will have the privilege of escaping the long and expensive process of drug discovery in the road to a clinically useful agent once a hit is identified. The 3D structure of the target receptor and its co-crystallized ligand were downloaded from Protein Data Bank (PDB) to be used in MOE software. A database of all available medications that are currently in clinical use was downloaded from the ZINC database through selecting FDA approved as main criteria in the compound search tool. A library of 1615 drugs was constructed and docked in the target active site using MOE dock tool. The docking resulted in 16150 conformations that was checked individually in the active site visually through binding to key residues and comparing poses with crystallized ligand besides considering binding energy scores. In-vitro biological testing will be performed on the identified hits followed by in-vivo effectiveness as potential and clinically useful agent against MRSA.

BIOINFORMATICS PREDICTION OF ANTIGENIC EPITOPES OF NS5 AND THEIR IMPLICATIONS FOR ZIKA VACCINE DESIGN

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Abstract:
Background: The current outbreaks that have occurred worldwide by Zika virus and the lack of licensed Zika drug or vaccines demands the development of Zika vaccine. Here, we predicted linear and conformational T and B cell epitopes of NS5 of Zika in both Asian and African lineages. Such data will be an important, first step towards the development of Zika vaccine and Immuno-therapeutic directed against NS5. Methods: Extraction Full Zika sequences of African and Asian lineage from NCBI then we extracted NS5 reign from the most frequent Asian and African sequence and we use it to perform sequence aliment by MUSCLE tool after that, epitope prediction for B cell and T cell through Immune Epitope Database. Results: The results of predicted linear and discontinuous B-cell epitopes using ElliPro method shows that 10 out of 18 predicted linear B-cell epitopes have high scores (above 0.85) while 6 out of 14 of predicted discontinuous B-cell epitopes have a high score; (0.80 and above) These high score reveal high affinity and binding to the antigen. While The predicted T-cell epitopes of MHC I and MHC II shows identity between Asian and African lineages of 83% and 68%, respectively. Conclusion: such results indicate that the predicted epitopes may have the potential to induce protective cellular immune response against Zika virus.

A NEW STABILITY-INDICATING HPLC – DAD METHOD FOR SIMULTANEOUS DETERMINATION OF CURCUMIN AND DASATINIB

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Abstract:
A simple, precise, gradient, reverse phase high performance liquid chromatography (HPLC) method was developed for the simultaneous determination of curcuminoids: viz. curcumin(C), desmethoxycurcumin (DMC), bisdesmethoxycurcumin (BDMC) and dasatinib, using ZORBAX Eclipse Plus Phenyl-Hexyl column (4.6 mm— 150 mm, ±5¼mm). The run time was 20 min. The influence of mobile phase composition, injection volume, mobile phase pH, flow rate, temperature, and detector wavelength on resolution was investigated. The method was validated with respect to precision, accuracy, and linearity. The LOD and LOQ were found to be 0.3 and 1¼g/mL, respectively for dasatinib and 10 and 24¼g/mL for respectively for curcumin. Linearity range was from 1.2- 100¼g/mL for curcumin and from 0.1-2¼g/mL for dasatinib. Further, the proposed method was found to be reproducible and convenient for stability-indicating analysis of curcumin and dasatinib.

TARGETED THERAPEUTIC EFFECT AGAINST THE BREAST CANCER CELL LINE MCF-7 WITH A CUFE2O4/SILICA/CISPLATIN NANOCOMPOSITE FORMULATION

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Abstract:
The combination of magnetic nanoparticles with a porous silica is a composite that has attracted significant attention for potential multifunctional theranostic applications. In this study, 30 wt % CuFe2O4 was impregnated into a matrix of monodispersed spherical hydrophilic silica (HYPS) nanoparticles through a simple dry impregnation technique. The chemotherapy drug cisplatin was loaded through electrostatic equilibrium adsorption over 24 h in normal saline solution. The presence of cubic spinel CuFe2O4 on HYPS was confirmed through powder X-ray diffraction (PXRD), Fourier transform infrared spectroscopy (FTIR) and diffuse reflectance VU-vis spectroscopy (DR UV-vis) analysis. The HYPS particles showed a surface area of 170 m2/g, pore size of 8.3 nm and pore volume of 0.35 cm3/g. The cisplatin/CuFe2O4/HYPS nanoformulation showed the accumulation of copper ferrite nanoparticles on the surface and in the pores of HYPS with a surface area of 45 m2/g, pore size of 16 nm and pore volume of 0.18 cm3/g. Transmission electron microscopy (TEM) and energy dispersive X-ray (EDX) mapping analysis showed the presence of homogeneous silica particles with nanoclusters of copper ferrite distributed on the HYPS support. Vibrating sample magnetometry (VSM) analysis of CuFe2O4/HYPS showed paramagnetic behavior with a saturated magnetization value of 7.65 emu/g. DRS UV-vis analysis revealed the functionalization of cisplatin in tetrahedral and octahedral coordination in the CuFe2O4/HYPS composite. Compared to other supports such as mesocellular foam and silicalite, the release of cisplatin using the dialysis membrane technique was found to be superior when CuFe2O4/HYPS was applied as the support. An in vitro experiment was conducted to determine the potential of CuFe2O4/HYPS as an anticancer agent against the human breast cancer cell line MCF-7. The results show that the nanoparticle formulation can effectively target cancerous cells and could be an effective tumor imaging guide and drug delivery system.

THE TUMOR CELL GROWTH INHIBITORY EFFECTS OF CURCUMIN-CELECOXIB COMBINATION ON A HUMAN BREAST CARCINOMA CELLS

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Abstract:
Many recent studies suggested the use of curcumin as a chemopreventive adjuvant molecule to optimize and minimize the desired therapeutic effects and side effects of administered drugs. COX-2 over-expression has been associated with number of molecular events such as carcinogenesis, invasiveness, and with the metastasis of malignant tumors. Further, the use of celecoxib is also associated to decreasing the risk of breast cancer. This study aimed to investigate the inhibitory effect of curcumin and celecoxib combination synergistically on the growth of human breast cancer cells. In our experimental study, we treated MDA-MB-231 human breast cancer cells with various concentrations of curcumin and celecoxib. The growth of MDA-MB-231were examined by MTS cell viability assay and detection of synergy was performed using combination index approaches. The drug-likeliness of the tested drugs (curcumin and celecoxib) were computed and predicted ADME pharmacokinetic parameters by in silico. Further, we have conducted BOILED-Egg plot and bioavailability radar analysis for the curcumin and celecoxib. The physicochemical and ADMET/pharmacokinetic properties result showed that these two drugs have good oral absorption and optically bioavailable. The present in silico study could offer a reliable theoretical basis for future structural modification of these compounds to treat breast cancer. The in vitro results suggested that curcumin and celecoxib individually inhibited the growth of MDA-MB-231 cells in a dose-dependent manner. The effect was synergistic for MDA- MB-231 cells relative to the two compounds individually. The synergistic growth inhibitory effect was mediated through a mechanism that probably involves inhibition of the COX-2 pathways. Our results confirm the prominent anti-proliferative activities of celecoxib and/or curcumin on MDA-MB-231 cells, which provide a rationale for further detailed preclinical and potential clinical studies of this combination for the therapy of breast cancer.

QUALITY VARIATION AND STANDARDIZATION OF BLACK PEPPER (PIPER NIGRUM): A COMPARATIVE GEOGRAPHICAL EVALUATION BASED ON INSTRUMENTAL AND METABOLOMICS ANALYSIS

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Abstract:
Background: Black pepper (Piper nigrum), known as king of spices, from various geographical origin is available in Saudi Arabia market where its demand as a food as well as a medicine for minor ailment is increasing. However, a lack of appropriate information exists for these samples in terms of quality variation and standardization. Aim of study: to evaluate the quality and standardize the black pepper sample with respect to its physicochemical characters, active principle variation i.e. Piperine (PPN), toxicity and biological activity. The main focus is to validate, is any difference do exist in quality and quantity of active principle present in these samples? Material and methods: For physicochemical analysis (chemical tests, ash values), instrumental analysis (ASE, UHPLC-DAD, IR, NMR, ICP-MS), whereas for biological evaluation in vitro antioxidant activity (DPPH and ABTS) and cytotoxicity assay was conducted. Results: An extract yield (g) with %recovery 2.26 ±4.24 (11.3%) was obtained for Vietnam sample, using a fast and rapid method of extraction (ASE), followed by Pakistani 1.22 ±2.64 (6.1%) and Indian sample 0.75 ±1.69 (3.75%). Physicochemical tests revealed the presence of flavonoids and phenolic compounds in all samples whereas ash values revealed a low amount of total-, acid insoluble- and high water soluble ash in Vietnam sample. IR and NMR further helped in standardization of the samples. ICP-MS analysis showed a high amount of macro- and micronutrient in Saudi Arabian sample. UHPLC analysis revealed a high amount of PPN (ng/mL) in Pakistani sample (1362614.09) followed by Vietnam (1051848.04) and Indian sample (768512.81). In vitro antioxidant and cytotoxicity activity revealed more potential for Vietnam sample. Conclusion: The samples were properly standardized and effectively differentiated in terms of quality and biological activities using fast and reliable tools, however it certainly does not mean that a particular geographical region is more better or productive in terms of herbal products.

GREENNESS ASSESSMENT AS PER ECO-SCALE, NEMI AND GAPI TOOLS FOR THE CHROMATOGRAPHIC ASSAY OF IBUPROFEN IN BULK AND COMMERCIAL FORMULATIONS: A GREEN APPROACH FOR QUALITY CONTROL

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Abstract:
Greening the analytical methods used for pharmaceutical analysis is very desirable. The economic and environmental impact of consuming large volumes of hazardous solvents motivated researchers to replace the traditional methods with more benign alternatives. In this study, an eco-friendly fast UPLC-UV method has been developed and validated for the analysis of ibuprofen in bulk and pharmaceutical formulations. The principles of green analytical chemistry were taken into consideration in method development. The greenness profile of the developed method was evaluated using three assessment tools: National Environmental Method Index, analytical Eco-Scale and Green Analytical Procedure Index. Chromatographic separation was achieved on a fully porous column packed with sub 2 µm particles using ethanol: water containing 0.1% formic acid (40:60, v/v) as a mobile phase at a flow rate of 1 mL/min and monitored at 220 nm. The run time was 2 min. The method was validated according to International Conference on Harmonisation (ICH) guidelines. The linearity of the developed method was achieved in the range of 5-500 mg/L with a correlation coefficient of 0.9999. The limit of detection was found to be 0.06 mg/L. Compared to other reported methods, the proposed method is faster and more eco-friendly; thus, it is suitable for use in routine quality control and assay of ibuprofen without harming the environment.

SPECTROPHOTOMETRIC AND MULTIVARIATE CALIBRATION TECHNIQUES FOR SIMULTANEOUS DETERMINATION OF DIFFERENT DRUGS IN PHARMACEUTICAL FORMULATIONS AND HUMAN URINE: EVALUATION OF GREENNESS PROFILE

Sarah Refai, Ahmed Mostafa, Heba Shaaban
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Abstract:
Background: Rapid, eco-friendly and cost-effective methods are needed for the determination of multicomponent mixtures in dosage forms and human urine.
Objectives: Development and validation of univariate and multivariate spectrophotometric methods for the determination of atenolol, paracetamol, hydrochlorothiazide and levofloxacin. The univariate method is the newly developed extended derivative ratio (EDR) and the multivariate method is multivariate curve resolution alternating least squares (MCR-ALS). Method: In the EDR method, the extended derivative ratio amplitudes at 281.6, 237.6, 279.2 and 282.8 nm were used for quantification of atenolol, paracetamol, hydrochlorothiazide and levofloxacin, respectively. In the MCR-ALS method, calibration model was developed and correlation constraint was employed. External validation data set composed of seven mixtures was used and different figures of merits such as root mean square error of prediction, standard error of prediction, bias, and relative error of prediction were calculated. The proposed methods were validated and successfully applied for the determination of the studied drugs in dosage forms, spiked and real human urine samples. Furthermore, the greenness profile of the methods was evaluated using National Environmental Methods Index NEMI and Analytical Eco-scale. Results: Both methods revealed satisfactory validation results. The high correlation coefficients for the MCR method (0.9996 - 0.9999) and the low relative error of prediction (0.49 - 1.39%) reflected the good prediction ability. The obtained results were statistically compared to the published methods and showed no significant difference. Conclusions: The developed methods can be used as a valid eco-friendly and cost-effective simple alternative to the commonly used chromatographic methods for the routine analysis of the studied drugs in dosage forms and human urine

ENHANCEMENT OF THE ANTIFUNGAL ACTIVITY OF KETOCONAZOLE VIA DEVELOPMENT OF FLEXIBLE LIPID-BASED NANOPARTICLES

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Abstract:
Background: Ocular infections represent a major problem that may be attributed to different fungal species. The available topical antifungal agents face limited ocular penetration and low bioavailability. Ketoconazole (KET) is a synthetic broad-spectrum antifungal drug. It is a highly lipophilic drug that belongs to the imidazole derivative. The aim of this work was to develop an ophthalmic in situ gel (ISG) and hydrogel formulations loaded with an optimized ketoconazole trans-ethosomal nanoparticles (NPs) to enhance KET ocular permeation, antifungal activity, the rapid drug drainage and short elimination half-life in the eye. Methods: Four formulation factors affecting the development of trans-ethosomal NPs were optimized for their effects on the particle size (Y1), zeta potential (Y2), entrapment efficiency (Y3) and nanoparticles flexibility (Y4). The optimized trans-ethosomal NPs loaded with KET were characterized and their morphological and antifungal activity were studied. Different ophthalmic ISG and hydrogels formulations loaded with the optimized NPs were prepared and characterized for the rheological properties, in vitro drug release, ocular irritation and in vivo corneal permeation. Results: The drug to phospholipid molar ratio (X1), the percent of edge activator of the total lipid (X2), the percent of ethanol in the hydration medium (X3) and the percent of stearyl amine of the total lipid (X4) were significantly affecting the characteristics of the NPs. The optimized trans-ethosomal NPs exhibited small size, high entrapment efficiency, maximum flexibility and positive zeta potential value. The antifungal activity of KET against a standard strain of Candida albicans was significantly improved following treatment with the developed NPs when compared to the pure drug. ISG formulations were found to be non-irritating to the corneal tissue. ISG formulations had a prolonged drug release. NPs were able to penetrate deeper into the posterior eye segment without toxic effects on the corneal tissues. Conclusion: ISG formulations loaded with ketoconazole trans-ethosomal NPs represent a promising ocular delivery system for the treatment of deep fungal eye infections.

FORMULATION OF STEALTH LIPOSOMES (PEGYLATED) CONTAINING AN ANTICANCER DRUG CAMPTOTHECIN AND ITS IN-VITRO CHARACTERIZATION (FR6-45

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Abstract:
Long circulating PEGylated liposomal drug delivery system has been widely studied for targeted drug delivery and other biomedical application, especially for anticancer drugs. These carriers are able to provide a series of unbeatable advantages - they can solubilize poorly soluble drugs by hydrophobic core resulting in the increase of drug stability and bioavailability. The drugs loaded in liposomes can be well protected from possible inactivation under the effect of biological surroundings. Camptothecin (CPT) is a potent antitumour agent by inhibiting the nuclear enzyme topoisomerase I. It inhibits the growth of wide range of tumors. However, the major drawbacks of the drug have always been water insolubility and lactone instability and the lactone ring in CPT plays an important role in the drug's biological activity. Hence in this research work, we developed conventional and long circulating liposomes (PEGylated) of Camptothecin by lipid film hydration technique in order to protect and improve the bioavailability of the drug. The formulated liposomes were characterized for particle size, encapsulation efficiency and in vitro drug release.

BIO-MONITORING OF PARABENS BIOMARKERS IN SAUDI FEMALE URINE USING DISPERSIVE LIQUID-LIQUID MICRO EXTRACTION COUPLED TO A GREEN UHPLC- MS/MS METHOD

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Abstract:
Background: Parabens are a group of antimicrobial preservatives commonly used in cosmetics, canned foods, and personal care products. The widespread use of parabens has increased the concerns about the potential health risks associated with the frequent exposure to these preservatives. Nowadays, several studies have been conducted to investigate human exposure to parabens. However, little is known about the exposure to parabens in Saudi Arabia. Objectives: This study aims to develop and validate a fast, sensitive and selective method using dispersive liquid-liquid microextraction (DLLME) followed by a green ultra-high-performance liquid chromatography coupled to tandem mass spectrometry (UHPLC-MS/MS) for the biomonitoring of five parabens (methyl paraben, ethyl paraben, propyl paraben, butyl paraben, and benzyl paraben) present in Saudi female urine samples. Methodology: Urine samples were collected from 40 adult female participants living in the Eastern Province of Saudi Arabia after being interviewed. Enzymatic hydrolysis was used to allow determining the total content of parabens. The extraction parameters were optimized including (extractive and disperser solvents, their volumes, vortex time, pH of the sample, and salt addition). The green solvent, ethanol, was employed as the organic solvent in the UHPLC method. Results: The method provided low limits of detection (0.05 ng ml-1), good precision and accuracy (RSD% < 11.55% and extraction recovery between 95% - 106%). The coefficient of determination (r2) for the calibration curves were > 0.99. The proposed method was applied successfully for the detection of the target compounds in the collected urine samples. Conclusions: This study provides new insights into the female exposure to parabens in Eastern Province, Saudi Arabia. The developed method is simple, fast, sensitive and uses an environment friendly chromatographic method and can be used successfully in the biomonitoring of parabens biomarkers in urine.

UTILIZATION OF NANOTECHNOLOGY AND HEPATOPROTECTIVE AGENTS TO IMPROVE THE BIO ZAVAILABILITY AND TO REDUCE THE TOXICITY ASSOCIATION WITH ISOTRETINOIN

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Abstract:
A skin disease, like acne vulgaris, is very frequent and affects individuals of all ages. The stratum corneum contains rigid corneocytes surrounded by intercellular lamellae. Hence the present study intended to formulate effective isotretinoin (ITT) nanoemulsion with enhanced solubility and bioavailability. Nonetheless, ITT can have a serious hepatotoxic effect on chronic administration. To overcome the aforesaid negative aspect, resveratrol (RSV) and quercetin as hepatoprotective agents, were incorporated into the formulations. The ITT solubility was first studied in various essential oils, surfactants, and co-surfactants to select the essential ingredients to formulate the nanoemulsion to enhance the solubility and permeation. The Box-Behnken design was utilized to study the interaction and optimize the independent variables to match with prerequisites of selected dependent responses. Considering the desirability approach, a formulation containing 0.15g oil mixture, 0.6g of surfactant (Labrasol), and 0.250g co-surfactant (Transcutol) was chosen as an optimized formulation. The optimized batches were further loaded with RSV and quercetin estimated for in vitro and ex vivo permeation and for in vivo hepatotoxicity. Permeability studies of formula with RSV confirmed the enhanced permeation percentage of ITT (60.77 ±1.18) and RSV (49.94 ±2.02), with enhanced steady-state flux (JSS). In vivo studies conducted with adult mice demonstrated the superior hepatoprotective activity of prepared optimized formulation compared to a different formulation of drugs and commercially marketed products.

THE ROLE OF STROMELYSIN1 (MMP3) IN ENDOTHELIAL-TO-MESENCHYMAL TRANSITION AND MYOFIBROBLAST DIFFERENTIATION

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Abstract:
Endothelial to mesenchymal transition (EndMT) and myofibroblast differentiation (FibroMF) occur in embryogenesis and adult pathologies such as the organ fibrosis. Stromelysin1, a matrix metalloprotease-3 (MMP3) is another molecule that has been indicated in vascular injury and organ fibrosis. There is a gap in knowledge on the specific role of stromelysin1 either in EndMT or in FibroMF. The objective was to investigate the role of stromelysin1 in TGFÎø2-induced EndMT and TGFÎø1-induced FibroM. In our results, TGFÎø2 treatment of endothelial cells (ECs) induced EndMT and increased expression of stromelysin1 and mesenchymal markers. Inhibition of stromelysin1 blunted TGFÎø2-induced EndMT. In contrast, treatment of NIH-3T3 fibroblasts with TGFÎø1 promoted FibroMF. Intriguingly, stromelysin1 inhibition in TGFÎø1-stimulated myofibroblasts further exacerbated fibroproliferation with increased FibroMF marker expression. In conclusion, our study has identified that EndMT and FibroMF are reciprocally regulated by stromelysin1.

Pharmacy Practice Track

ACTIONABLE PHARMACOGENES CARRIED BY SAUDI POPULATION

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Developmental Medicine Department, King Abdullah International Medical Research Center, Ministry of National Guard Health Affairs

Abstract:
Background: The study of genetic variations affecting patients' responses to drugs is proportionally increasing worldwide. This type of research is known as pharmacogenomics (PGx) research and the genes associated with variable drug effects/toxicity are recognized as pharmacogenes. The adoption of PGx research is motivated by the role of PGx in elucidating the effect of genes on medications pharmacokinetics and pharmacodynamics. Existence of genetic variants and their frequency differ among different populations; thus, it is necessary to explore the exact genetic characters of targeted natives before deciding what genes and variants to test for. This study aimed to explore the common variants and pharmacogenes harbored by Saudi population through screening the currently published literature. Methodology: Systematic review via online research was performed using different medical scientific websites in particular Google Scholar and PubMed. The main keywords used were Saudi, gene names, SNPs (rs numbers). The distribution of allele frequencies of the reported variants in 55 pharmacogenes, that showed strong associations with variety of phenotypes related to certain therapeutic drugs, was screened. The search data were extracted from different multiple candidate gene studies performed on healthy Saudi individuals. Results: This review indicated an existence of multiple variants located in 21 pharmacogenes among Saudis; these include ABCB1, APOE, COMT, CYP2C9, CYP2C19, CYP2D6, CYP3A5, CYP19A1, FVL, GSTP1, HLA-A, HLA-B, HLA-C, IFNL3 (IL28B), KCNJ11, MTHFR, NAT2, SCLO1B1, TPMT, UGT1A1 and VKORC1 genes. These genes can possibly influence responses to 83 medications. Cytochrome P450 genes (CYP2D6, CYP2C19, CYP19A1 and CYP2C9) were identified as the top genes affecting outcomes of larger number of medications (n=22, 10, 8 and 6 medications, respectively). Conclusion: Saudi individuals share common variants but different allele frequencies in 21 pharmacogenes commonly seen in different ethnicities. However, carriage of other important 34 pharmacogenetic variants has not yet been identified; these need to be screened for in the near future. Cytochrome P450 genes are the most influential genes impacting drug therapies.

PHENYTOIN-INDUCED RHABDOMYOLYSIS CASE REPORT

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1Imam Abdulrahmanbin Faisal University, Dammam, Saudi Arabia
2Department of Intensive Care Unit, Security Forces Hospital, Dammam, Saudi Arabia

Abstract:
Case summary: A 36-year-old female with disturbed conscious level due to status epileptics and post ictal state as a result of prolonged attack of tonic colonic convulsion that lasted more than 30 minutes. She has no past medical history, drug ingestion or allergies. Phenytoin loading dose 20 mg/kg was administration with ECG monitoring. After stabilization in the ER, CT brain was done and reported to be with mild brain edema and otherwise unremarkable. On admission to ICU, Seizure was controlled with administration of phenytoin maintenance dose of 100 mg every 8 hours orally. Serum creatine phospho kinase (CPK) levels were higher than reference interval (> 170 IU/L), 735 IU/L on admission and was increasing steadily after that, in spite of no convulsion and improvement of LOC reached 30,182 IU/L 2nd day, increased further after phenytoin maintenance and reached the peak value of 57,638 IU/L at 4th day. Considering phenytoin might be the cause of rhabdomyolysis. Phenytoin was substituted with levetiracetam. Subsequently, the serum CK level promptly trended to decrease. Conclusion: The most likely cause of the rhabdomyolysis was phenytoin treatment because the relationship between exposure to the phenytoin and symptoms and rapid resolution after discontinuous of phenytoin.

PATTERNS OF INFECTIONS AND ANTIMICROBIAL DRUGS PRESCRIBING AMONG PREGNANT WOMEN IN SAUDI ARABIA

Lina Hussain Al Lehaibi, Mohamed A. Baraka, Fuad H. Al-Ghamdi, Mastour S Al Ghamdi
College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University

Abstract:
Background: Antimicrobial agents are considered among the most commonly prescribed drugs in pregnancy given the increased susceptibility of infections during pregnancy. Antimicrobials can contribute to different maternal complications. Therefore, it is important to study their prescribing and utilization pattern. Such type of data regarding this issue is scarce in Saudi Arabia and this encouraged us to conduct this research. The aim of this study is to generate data about the most commonly prescribed antimicrobial agents during pregnancy, as well as their indicators and safety. Methods: This is a retrospective study focusing on pregnant women with a known antimicrobial consumption at Johns Hopkins Aramco Healthcare (JHAH). The sample size was 344 pregnant women with 688 antimicrobial prescriptions. Data was collected about prevalence of infections and antimicrobial prescriptions in addition to drug safety during pregnancy using FDA risk categorization system. Results: The results showed that Urinary Tract Infections (UTIs) were the most reported (59%) infectious diseases. Around 48% of pregnant women received antimicrobial medications at some point during their pregnancy. The top two antimicrobial agents based on prescription frequency were B-lactams (44.6%) and azole anti-fungals (30%). The prescribed drugs in the study were found to be from B, C and D classes according to the FDA risk classification system. Conclusion: Overall antimicrobial prescribing practices were appropriate. The study revealed a high prevalence of antimicrobials prescribing during pregnancy that might pose risks to mothers and their fetuses. Future multi center studies are warranted to evaluate the rational prescribing of antimicrobial medications during pregnancy.

SAFETY AND EFFECTIVENESS OF THROMBOPROPHYLAXIS USE IN HOSPITALIZED ELDERLY MEDICAL PATIENTS AT A SAUDI TERTIARY CARE CENTER

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1College of Pharmacy, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia, 2College of Pharmacy, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia, 3Pharmaceutical Care Service, Ministry of the National Guard-Health Affairs, Riyadh, Saudi Arabia, 4King Abdullah International Medical Research Center, Riyadh, Saudi Arabia, 5College of Pharmacy, King Saud University, Riyadh, Saudi Arabia

Abstract:
Background: Appropriate prescribing of venous thromboembolism (VTE) prophylaxis based on guidelines recommendations can heighten the risk of over- or underutilization. Aim: The study intended to assess the safety and effectiveness of appropriate/inappropriate thromboprophylaxis use among hospitalized elderly medical patients. Methods: A retrospective observational cohort study was conducted including patients that were 60 years old, were admitted for an acute medical illness that required hospitalization in a medical ward for >48 hours, and received thromboprophylaxis. The appropriateness of thromboprophylaxis use was assessed against the recommendations made in the American College of Chest Physicians guidelines. Results: A total of 370 patients were included in the study, in 71.9% of whom thromboprophylaxis use was appropriate. The mean age of the included patients was 75 years (±9.1) and the majority of the included patients (72.4%) were at high risk of VTE and nearly all these patients received appropriate thromboprophylaxis. The incidence of bleeding during hospitalization was significantly greater in the appropriate use group than in the inappropriate use group (11.7% vs. 2.9%, p = 0.009), with the majority of these bleeding events classified as major. No significant differences were observed between the two groups incidence of VTE events during hospitalization or all-cause mortality within 90 days. Conclusion: The study demonstrates high prescribers compliance with recommendations in high-risk patients. The overutilization of thromboprophylaxis in patients at low risk for VTE did not increase their risk of bleeding. This study suggests that the benefits of thromboprophylaxis in elderly patients, regardless of their risk of VTE, may outweigh the risk of bleeding.

KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS ORAL HEALTH CARE AMONG COMMUNITY PHARMACISTS IN ASIR REGION, SAUDI ARABIA

Sumayya Owdhah Alasmari, Khawlah Awad Alqadi, Rajalakshimi Vasudevan, Rana Dhafer Alshehri
College of Pharmacy, King Khalid University

Background: Community pharmacists play a significant role in maintaining and promoting oral health care. The evidence for the role of community pharmacists in oral health-seeking activities of Saudi communities and their impact in addressing oral health complaints is limited. It is essential to identify and address gaps in pharmacists oral health understanding. Objectives: To explore and assess knowledge, attitude, and practice towards oral health care among community pharmacists in Asir region . Methods: A prospective cross-sectional study was carried out using a self-administered structured questionnaire, targeting 254 community pharmacies across the Asir region. The questionnaire consisted of 4 domains: demographics, knowledge, attitudes, and practice related to oral health care. Statistical analysis was performed using Social Sciences (SPSS) version 23.0. Chi Square was used to evaluate differences for categorical data. P value < 0.05 was considered significant. Results: Of the 254 pharmacists, 202 respondents completed the survey (80% males), yielding a response rate of 79.5%. Almost two-thirds (66%) of the community pharmacists exhibited a good knowledge, and 65% possessed a positive attitude, and 55% perceived a good practice towards oral health care. Pharmacists have shown a good understanding on dental care ($p < 0.001$) and oral conditions including dental plaque ($p < 0.001$,)gum bleeding, tooth decay, oral cancer and even methods of prevention of such diseases. Fifty-five percent ($n = 119$) of pharmacists preferred to have dental-based subjects in Pharmacy curriculum. Conclusion: Community Pharmacists possess overall good knowledge and attitude required for the provision of dental care counseling for patients. They may participate successfully in oral health development programs to make a better practice, as patients often communicate with them and frequently seek oral healthcare advice.

CORTICOSTEROID THERAPY FOR 2019-NCOV INFECTED PATIENTS: A CASE SERIES OF 8 MECHANICALLY VENTILATED PATIENTS

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2Clinical Pharmacy Department, King Faisal Medical City, Abha, Saudi Arabia.
3Maternity and Children Hospital, Ministry of Health, Makkah, KSA

Abstract:
Introduction: Since the publication of first reports about 2019-nCoV spread in Wuhan, China, in 2019, more than a million people have died due to 2019-nCoV pneumonic infection and the ever-increasing number of infected patients has exceeded a whopping figure of 38 million in more than 190 countries, thus gaining the proportion of a pandemic. Approximately 20% of 2019-nCoV cases can develop ARDS, which counts for up to 62% mortality. In many cases, corticosteroid therapy has been used with encouraging results that have prompted World Health Organization (WHO) to issue special guidelines for potentially effective life-sustaining pharmacological intervention. This retrospective study was designed to investigate the clinical course and treatment timeline in eight patients suffering from severe ARDS caused by 2019-nCoV infection. The patients were mechanically ventilated and received short-term high dose corticosteroid therapy. Method and Material: In a single institutional, retrospective observational study at Albukairyah General Hospital, Qassim, Saudi Arabia, we report eight 2019-nCoV infected patients (5 male and 3 females) between the ages of 31-83 years with sever bilateral lung infiltration due to pneumonia. Results: The patients required mechanical ventilation when they were administered high-dose short-term infusions of methylprednisolone for 3 days. Steroid therapy resolved the bilateral infiltration in all 8 patients, improved their O2 saturation, abrogated their need for mechanical ventilation. Conclusion: Our series of patients shows that high-dose of methylprednisolone for three days followed low-dose maintenance therapy in SARS-CoV-2 infected patients with ARDS may provide a good prognosis in patients with SARS-CoV-2- related complications. Recommendation: This study recommended this regimen of treatment in critical patients with COVID-19 who were developed ARDS with close monitoring for adverse effects.

EVALUATION OF PHARMACIST PHARMACEUTICAL PRACTICE TOWARDS DEAF PATIENTS IN SAUDI ARABIA: CROSS-SECTIONAL STUDY

Naema Nuri Alfashkhi, Khadeejah Abdullah Alsaeed, Zahra Yousif Alshuwaish, Aseel Fuad Al-Karasneh
College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University

Abstract:
Background: For a deaf patient, providing pharmaceuticals care by pharmacists become more challenging due to communication barriers. This study aim to evaluate the pharmaceutical services provided to deaf patients and to determine the pattern and level of communication provided to deaf by pharmacists. Methods: An online Survey were used to collect information from pharmacists in both Arabic and English languages. Results: large proportions (82%) of the participants were female. Among all the participants, (45.1%) of them interact with at least 1 to 5 deaf patients monthly. Limited understanding of deaf culture, Lack of accessibility of an interpreter and Reading level of deaf patients reported as the most important barrier to communication with deaf patients. All pharmacists participate in this study find that the best way to deal with deaf patients is by designing a smart application able to translate the pharmaceutical instruction and advice into the sign language. Conclusion: When interacting with a deaf patient, pharmacists may experience communication barriers. Pharmacists should challenge to appropriately communicate with the deaf in order to optimize the pharmaceutical services provided.

EFFICACY AND SAFETY OF VALSARTAN AND AMLODIPINE COMBINATION IN SAUDI OF HYPERTENSIVE PATIENTS

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1Maternity and Children Hospital, Ministry of Health, Makkah, KSAH.
2Department of Pharmacology, Faculty of Medicine, King Abdulaziz University, Saudi Arabia

Abstract:
Background and objective: Guidelines stated that the majority of patients with hypertension require more than one drug to reach their blood pressure targets. A mixture of two free or fixed drugs from different classes should be preferred. Amlodipine/valsartan has been found to be an efficient in reducing BP. Therefore, the aim of the current study was to assess the efficacy of (Amlo / Val) as antihypertensive therapy in Saudi patients with critical HTN, and to determine the BP control rate as well as the safety and tolerability of the treatment. Materials & Method: Prospective non-interventional observational study was implemented at King Fahad Armed Forced Hospital in Jeddah, Saudi Arabia. 159 hypertensive patients who are treated with (Amlo / Val) during a follow up period of 12 months. Patients were assessed at baseline for demographic data, underlying illnesses, prior antihypertensive drugs, and BP. The effectiveness of the (Amlo / Val) intake was evaluated by from baseline to week 26. The proportion of patients achieving BP goal and who were responders and to evaluate the effect of gender on BP response to (Amlo / Val). Results: The findings of our analysis showed that using of the (Amlo / Val) has a significant effect on lowering both the levels of SBP and DBP in all patients. Also, there were significant reduction of both levels of SBP and DBP in both genders post-(Amlo / Val) in contrast to pre- (Amlo / Val) treatment. Interestingly, the use of the (Amlo / Val) exhibited a significant decrease of urinary albumin/ creatinine ratio as compared to pre-(Amlo / Val) usage only in patients with chronic kidney disease. In the present study, dose response for BP reduction was demonstrated by Amlo / Val (18.2%). The patients who achieved the goal of reduction of BP in SBP (40%:34.0%), DBP (72.3%:73.4%), and overall (39.9%:26.6%); respectively. A dose-dependent decrease was observed with Amlo / Val in msSBP with decreases of 13.60 and 20.98 mmHg; respectively for 5/160-mg and 10/160-mg of Amlo / Val. Conclusion: (Amlo / Val) single pill combination therapy was successful in reducing BP and was well tolerated with few adverse effects in patients with hypertension who were not monotherapically regulated.

GUT MICROBIOTA, MAJOR DEPRESSIVE DISORDER A PATHOPHYSIOLOGICAL LINKS AND THE USE OF PROBIOTICS

Wafa Alhomaide Alruwaily, Alhodod Alshamaliah
College of Clinical Pharmacy, Northern Border University

Abstract:
Background: Major depressive disorder (MDD) is usually the result of complex gene-environment interactions. According to the World Health Organization, MDD is the leading cause of disability worldwide. However, the definitive environmental mechanisms underlying the pathophysiology of MDD remain difficult to understand. The gut microbiome is an increasingly recognized environmental factor that can shape the brain through the microbiota-gut-brain axis. Review of the literature is warranted to evaluate the relationship between microbiota and MDD and the beneficial effect of probiotics. Relationship between MDD and gut microbiota: Persistent low-grade immune-inflammatory processes, oxidative and nitrosative stress, and hypothalamic-pituitary-adrenal axis activation are integral to the pathophysiology of major depressive disorder (MDD). The microbiome, intestinal compositional changes, and resultant bacterial translocation add a new element to the bidirectional interactions of the gut-brain axis. Research in rodents has shown an onset of depressive behavior following fecal transplantations from patients with MDD. Also, mental induction of stress and depressive behavior in rodents resulted in reduced gut microbiota richness and diversity. Conclusions: Intestinal dysbiosis and the leaky gut may constitute a key pathophysiological link between MDD and its medical comorbidities. This emerging literature opens relevant preventative and therapeutic perspectives. Recommendation: It appears that probiotic supplementation had positive impact on reducing anxiety and depressive symptoms. Many researchers suggest that probiotics have the potential to act as an adjuvant to major depressive disorders.

Toxicology Track

DETERMINATION OF HEAVY METALS IN THE MOST COMMONLY USED TRADITIONAL HERBS IN SAUDI ARABIA

Njoud Khalid AlHamid, Saleha Algharni, Rand Alabdulmohsin, Majd Alghamdi
College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University

Abstract:
Background: Traditional herbs are extensively used by many individuals for multiple purposes around the world. Saudi Arabia and other Arabian countries consider traditional herbs as effective and safe source of treatment and disease prevention. The constituents of each herb differ depending on their nature and origin, therefore determination of metals in herbs is of a paramount importance in order to ensure the consumer safety. Objective: this study aims to determine the amount of heavy metals and trace elements in the most widely used herbs in Saudi Arabia. Methodology: Forty-four (44) samples of medicinal plants were purchased from the local markets in the Eastern Province of Saudi Arabia. The samples were prepared using microwave-assisted digestion and the analysis was performed using Inductively coupled plasma-mass spectrometry (ICP-MS). Results: Lead was found in the majority (90%) of the analyzed samples at a concentration ranging from 0.1 to 11.42 mg/Kg. Mercury and cadmium were detected in 53% of the samples at a concentration ranging from 0.02 to 2.54 mg/Kg and 0.2 to 3.11 mg/Kg, respectively. Conclusion: This study sheds the light on the metal content of the most commonly used medicinal plants in Saudi Arabia. Adequate quality control of traditional herbs and monitoring their content should be taken into consideration in order to ensure consumer safety.

ESTIMATION OF LEAD LEVEL IN URINE AMONG CHILDREN IN THE EASTERN PROVINCE, SAUDI ARABIA

Batool Albaqshi, Waqer AL Mohammed Hussein, Bayan Al quraini, Heba Shaaban, Ahmed Mostfa, Sahar Issa
College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University

Abstract:
Background: Lead poisoning is significant health crisis, since lead toxic to all age group but children at greatest risk of health problems. Lead is a naturally arising substance which can be present in many sources such as air, dust, water and soil. In addition, it is utilized in a broad number of products on a daily basis. The extensive use of lead causes it to be a worldwide environmental pollutant. Lead poisoning happen when there is too much lead gets into the body through the skin, eating, drinking or breathing. Frequent lead exposure may lead to numerous heath issues including neuronal dysfunction, muscle movement and learning disabilities among children. Limited data in Saudi Arabia is available about the exposure to lead among children. To fill this gap, this study aimed to establish lead levels in the urine samples gathered from children in Saudi Arabia particularly from the Eastern region. Objectives: Estimation of lead levels in urine among children in Saudi Arabia and inquiry of factors influencing the exposure to lead such as demographics. Methodology: Gather information from the participants such as demographics by face-to-face interview using Self-administered questionnaire After getting consent from their parents, urine samples were collected in sterile polyethylene bottles from children aged between 1-10 years and directly analyzed in the lab. After sample preparation with nitric acid digestion, inductively coupled plasma-mass spectrometry (ICP-MS) was used for the analysis. Results: The concentration of lead was within the normal limit however it was elevated in one sample gathered from children who reside in rural areas. This may be assigned to the exposure to a variety of sources such as food, water and soil. Conclusion: Alerting people about exposure to lead and its safety measures is much needed. The results of this study will deliver insights when planning future interventions to promote specific messages to improve knowledge and enhance awareness regarding lead exposure.

EXPOSURE TO ENDOCRINE DISRUPTORS AMONG SAUDI FEMALE POPULATION: ASSESSMENT OF URINARY LEVELS OF BISPHENOL A

Hebh Abu Kabbus, PharmD; Eman Almousa, Pharm D; Alzahra Almma, Pharm D; Heba Shaaban, PhD; Ahmed Mostafa, PhD
Department of Pharmaceutical Chemistry, College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University, Saudi Arabia

Abstract:
Background/purpose: Exposure to endocrine disrupting compounds among females is popular worldwide. Bisphenol A (BPA) is an industrial chemical that has been widely used in the last years. BPA is used as a monomer to manufacture epoxy resins and plastic that used in water bottles and food continuers. However, recent studies show that BPA is a potential endocrine disrupting compound that has huge impacts on the development and reproductive functions of human beings. In the last years, human exposure to bisphenol A in daily life appears inevitable. However, there is a lack of published studies in the Middle East in general and Saudi Arabia in particular that address the exposure to endocrine disruptors among females in Saudi Arabia. To fill this gap, this study aimed to determine the levels of bisphenol A in urine samples from Saudi females. Methodology: Urine samples were collected from 42 females living in the Eastern region of Saudi Arabia. The samples were analyzed using ultra-high performance liquid chromatography - tandem mass spectrometry (UPLC-MS/MS). The analytical method based on UPLC-MS/MS was developed and validated according to International Conference of Harmonization (ICH) guidelines. Results: BPA was detected in 26 of the analyzed samples with a maximum concentration of 9.8 ng/mL and a minimum concentration of 0.2 ng/mL. In comparison to other studies conducted to assess the levels of BPA in other populations, BPA concentrations were similarly high. Conclusion: the findings of this study revealed that the prevalence of exposure to bisphenol is high among Saudi female population. High concentrations of this endocrine disruptor could be related to major health issues. Further investigation of potential exposure to endocrine disruptors among females in Saudi Arabia is highly needed.

PREGNANT WOMEN'S ATTITUDE TOWARD THE USE OF HERBAL, VITAMIN, AND MINERAL SUPPLEMENTS IN SAUDI ARABIA

Izdihar Fahad AlAhmad, Wedad Hussain AlMutiri, Malak Fahad AlMutiri
Pharmacy Department, Buraydah Private Colleges

Abstract
Background: Herbal medicine has been widely utilized by pregnant women despite the limited available evidence regarding the safety and efficacy of that practice. The current available studies, from different countries, estimated that the use of herbal medicine during pregnancy range from 7% up to 96%. Aim: to determine the prevalence, attitude, source of information, and reasoning behind the use of herbal medicine, vitamins and mineral supplements among pregnant women in Saudi Arabia. Method: A cross-sectional survey composed of 21 questions was published as an online survey. The survey was conducted during (2 Nov. to 23 Nov., 2019) and the number of participant was 540. Result: the result show 84.6% the participation of the women in the questionnaire was between 20 and 40 years, 67.5 of them were graduated from universities, 67.6% of them were from the central region and 40.7% were in the last three months of pregnancy. Most ages between 20 and 40 are graduated from the central region in the last months of pregnancy showed positive effect toward the use of herbs, vitamins, metals and iron. Conclusion: this study has shown that the prevalence of herbal supplements is considerably high among pregnant Saudi women who have positive attitude was significantly higher among respondents in the first trimester. The majority of the women relied on informal sources to use herbal supplements during pregnancy while others relied on healthcare provider.

IN VITRO STUDY ON THE TOXIC EFFECTS OF ACRYLAMIDE ON BLOOD ANTIOXIDANTS, AMELIORATIVE EFFECTS OF VITAMIN C

Ahmed Ghamdi, Fahad Alenezi, Misfer Algoferi, Mohamed Alhawas and Mohamed Afifi
University of Jeddah, College of Applied Medical Sciences, Jeddah, Kingdom of Saudi Arabia

Abstract:
Background: Acrylamide (ACR) is a naturally occurring, widely used compound and it is generated during cocking carbohydrate rich food at high temperature. Ingestion of large amounts of ACR underlies several health concerns and teratogenicity. Ascorbic acid (vit C) is a strong reducing agent greatly used to clean free radicals. Materials and methods: Blood sample was obtained from 46 years old, healthy nonsmoking man in heparinized tubs. Blood sample was immediately divided into seven parts as triplet for each. The first one was control, the 2nd, 3rd and 4th were treated with acrylamide in a concentration of 25, 50 and 100 mM; respectively, the 5th, 6th and 7th were treated with acrylamide similar to the previous samples in addition to vitamin C in a concentration of 100mM. One mL from each tube were taken after four and 24 hours and were used for preparation of hemolysates and were kept at -80 °C till investigation of the biochemical parameters. Results: The concentrations of Malondialdehyd (MDA), nitric oxide (NO) and hydrogen peroxide (H2O2) increased in ACR with/without vit. C treated samples as compared with control. The concentration of reduced glutathione (GSH) and activities of Catalase (CAT), superoxide dismutase (SOD), glutathione reductase (GR), glutathione peroxidase (GPx) and glucose 6 phosphate dehydrogenase (G6PDH) decreased significantly in ACR with/without vit. C treated samples as compared with control. Meanwhile, the concentrations of MDA, NO and H2O2 decreased in samples treated with both ACR and vit. C as compared with that treated with ACR only. The concentration of GSH and activities CAT, SOD, GR, GPx and G6PDH increased significantly in samples treated with both ACR and vit. C as compared with that treated with ACR only. Conclusion: ACR produce its toxic effect through its deleterious action on the antioxidant system through induction of pro-oxidants leading to exhausting of antioxidants. Vitamin C has an ameliorative action on the deleterious action exerted by ACR through improving the balance between pro-oxidants and antioxidant.

ASSESSMENT OF LEAD POISONING KNOWLEDGE AND PERCEPTION IN EASTERN PROVINCE, SAUDI ARABIA: A POPULATION-ANALYSIS STUDY

Batool Albaqshi , Waqer AL Mohammed Hussein, Bayan Al quraini, Heba Shaaban , Ahmed Mostfa, Sahar Issa
College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University

Abstract:
Background: Lead is a heavy metal that occurs naturally and can be found in all part of our environment. People are exposed to lead from different sources including water, air, soil and even in toys and jewelry. Lead poisoning is significant health issue in all group age that can cause harmful effect in all body organs, particularly in children. Frequent exposure to lead may associated with variety of irregularity involving neuronal dysfunction and learning disabilities among children. Therefore, increase awareness of the sources and way of exposure and taking a preventive measure is core element to decrease the possible hazards of it. Limited statistic and information are available about the public awareness of lead poisoning in the Gulf countries and in Saudi Arabia, respectively. Purpose: This study aimed to evaluate public awareness regarding the exposure to lead and its health risk among Saudi population to rise their attention by identify the factors associated with their awareness. Methodology: Random sampling was conducted for a cross-sectional study. A self-administered survey was gathered from 300 participants in Saudi Arabia. Results: The results showed that awareness and general knowledge about lead is insufficient. in order to increase awareness of lead poisoning, most of participants preferred to use social media. Majority of participants had misconceptions regarding lead exposure sources and its detriments to health. Conclusion: Compliance with protective measures could be improved by enhancing the awareness of health risk associated with lead. The findings of this study will provide insights when designing future interventions to promote specific messages to enhance knowledge, change attitude and improve practice regarding awareness of lead poisoning in Saudi Arabia.

HOSPITAL SHOWCASE COMPETITION REPORT

OBJECTIVE

It is performed to share unique experiences and novel practices implemented in the institution.

PRESENTATION DETAILS

There were 9 presentation presented on Monday 7-12-2020 from 3:30 to 6:30 in Le meridian Hotel, Al Khober

PRESENTATION METHOD

Presentations can take any of the following forms:

- Live virtual Presentation
- In-person presentation

The duration of the presentation should be around 10 minutes and 5 minutes for panel discussion.

Evaluation Method

The committee's evaluation will count for 80% of the total vote. After completing the evaluation form, the committee members will meet via Zoom to discuss the evaluation, calculate the scores, and arrange the participants according to preference, to be recorded by the committee chairman. The public vote will count for 20% of the total vote. Voting will be open via the @KSAPT and @EPPC_SPS Twitter accounts for a period of 12 hours, after which the votes will be sorted by the chairman and added to the committee's scores. The names of the five highest-ranked participants will be placed in sealed envelopes by the head of the committee and handed over to the KSAPT 2020 conference president.

No.	Institution Name	Presenter Name	City, Country
01	AL-Haboobi Teaching Hospital	Zinah Zamil Alghezi	Thi-Qar, Iraq
02	Dammam Medical complex	Ras Tanura Hospital	Ras Tanura Hospital
03	Ras Tanura Hospital	Layla Qassim M Al Jaroodi	Ras Tanura, KSA
04	Bqaiq General Hospital	Hussain Naji Aldandan	Hussain Naji Aldandan
05	Dammam Medical Complex	Dammam, KSA	Dammam, KSA
06	Dammam Regional Lab and Blood bank	Duaa Hassan AlDahan	Dammam, KSA
07	Saud Al Babtain Cardiac Center	Ahmed Al Naiem	Dammam, KSA
08	Ahmed Al Naiem	Bader Mohammed Aljoaher	Ras Tanura, KSA
09	King Faisal Medical Complex	Abdulrahman Saed Alswaidi	Taif, KSA

CONCLUSION

A very successful competition with participation from some of the top Hospitals in KSA and one entry from Iraq took the competition globally. We look forward to more international participation and believe in taking this competition to the next level.

ELP Report

AIMS AND OBJECTIVES OF ELP FOR KSAPT 2020

This platform aims to provide all community members who possess good presentation skills and unique ideas an opportunity to share their experiences. Furthermore, we aimed to spark curiosity among healthcare professionals and healthcare enthusiasts (including Medicine, Pharmacy, Nursing, and Allied Health Sciences). Our objectives include are:

- To engage the community in health conferences.
- To create a space for sharing and discussing ideas.
- To provide a platform that allows students to discover their public speaking and problem-solving skills.
- To support ideas that have an impact on society in general or the health sector in particular
- To take advantage of the volunteers' positive energies by allowing them to manage this program (ELP) and allowing them to develop their management, coordination, and communication skills.

PERFORMANCE AND ASSESSMENT (ELP-KSAPT 2020)

The platform functioned smoothly across the three days (5-7/12/2020) with some minor challenges. Additionally, the ELP teams were excited and determined to make this platform a success. The winners' names were sealed by the assigned judges and submitted to be disclosed in the final ceremony for the conference. Winners were announced through social media as well, and their awards were through emails. All participants (15 competitors) received certificates of participation. We are thrilled that the number of beneficiaries of this platform (ELP) has reached 3879 from all society segments.

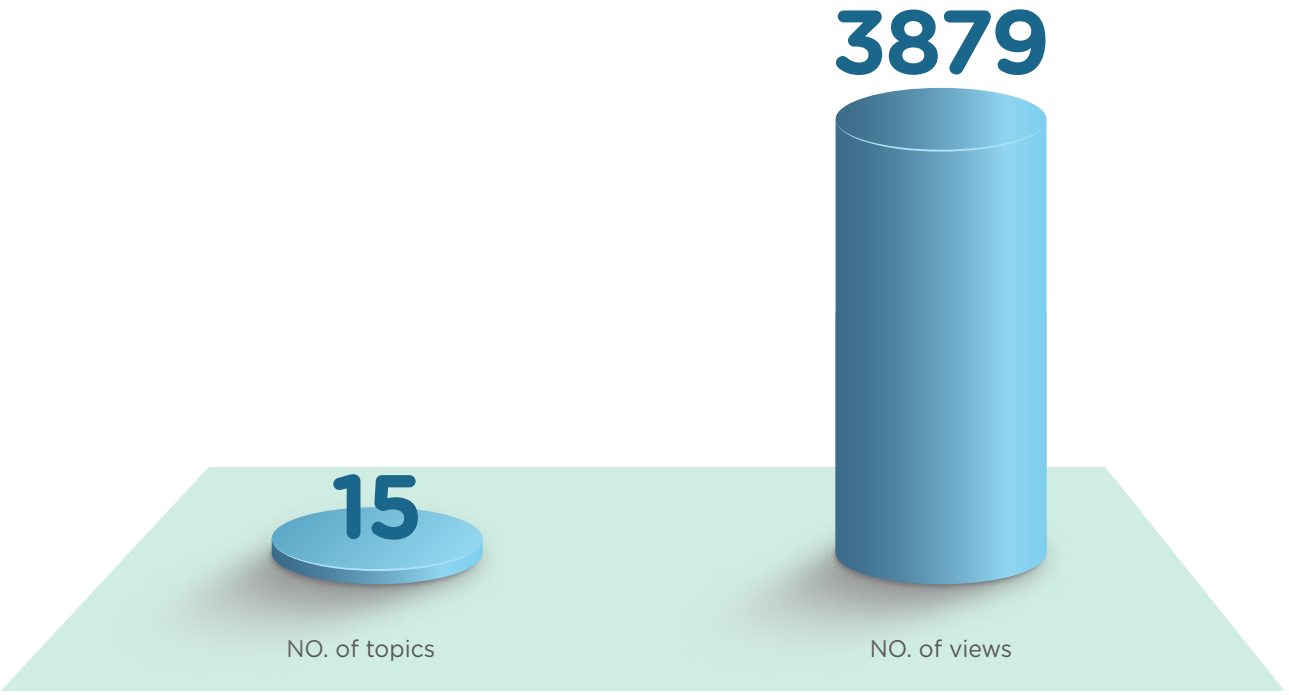
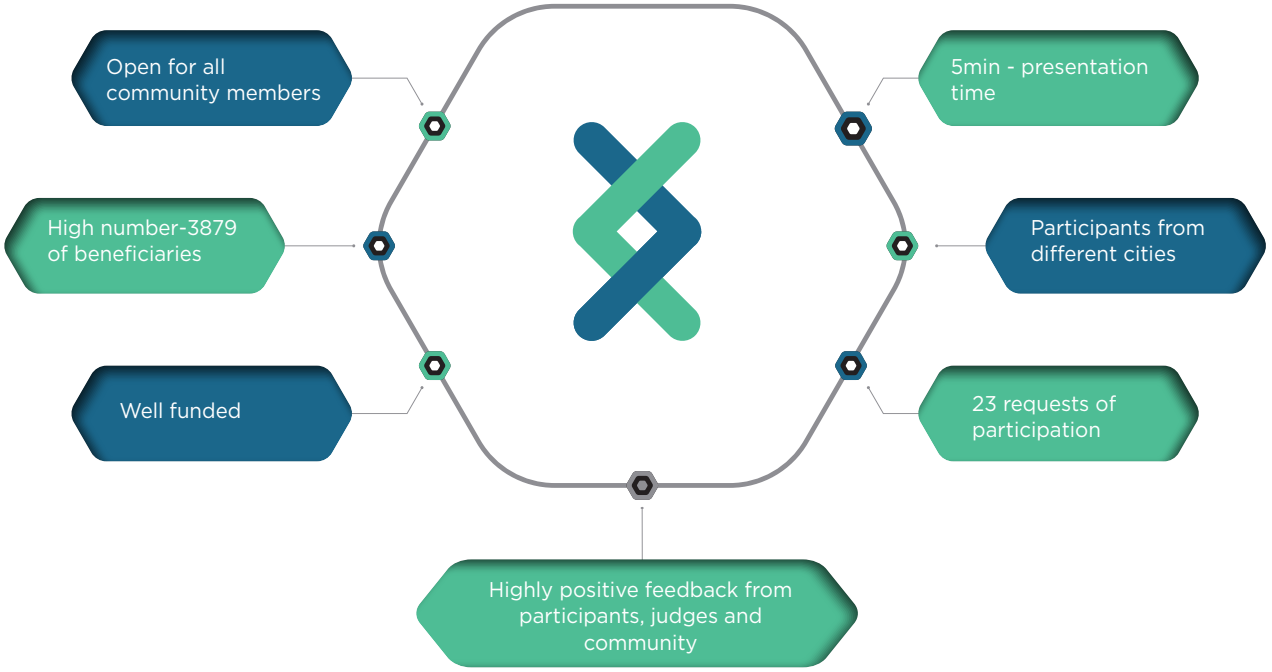


Figure 2: Number of topics and views

In light of these numbers, the ELP achieved most of its objectives, which consider a great success as this platform was held for the first time. Nevertheless, there are some strengths and weaknesses point we have to highlighted in this report for future events, which are listed here:

MAJOR STRENGTHS



CONCLUSION

Despite some challenges to prepare for National Enterprising Learning Platform (ELP) -KSAPT 2020, we succeeded to achieve a highly positive reaction from the community and participants, creating impactful learning experience. We believe that we will return stronger to take this platform to the next level in KSAPT 2021.

Thank you to our platinum sponsor

Lilly was founded in 1876 by Colonel Eli Lilly, a man committed to creating high-quality medicines that met real needs in an era of unreliable elixirs peddled by questionable characters. His charge to the generations of employees who have followed was this: "Take what you find here and make it better and better."
More than 140 years later, we remain committed to his vision through every aspect of our business and the people we serve starting with those who take our medicines, and extending to health care professionals, employees and the communities in which we live.

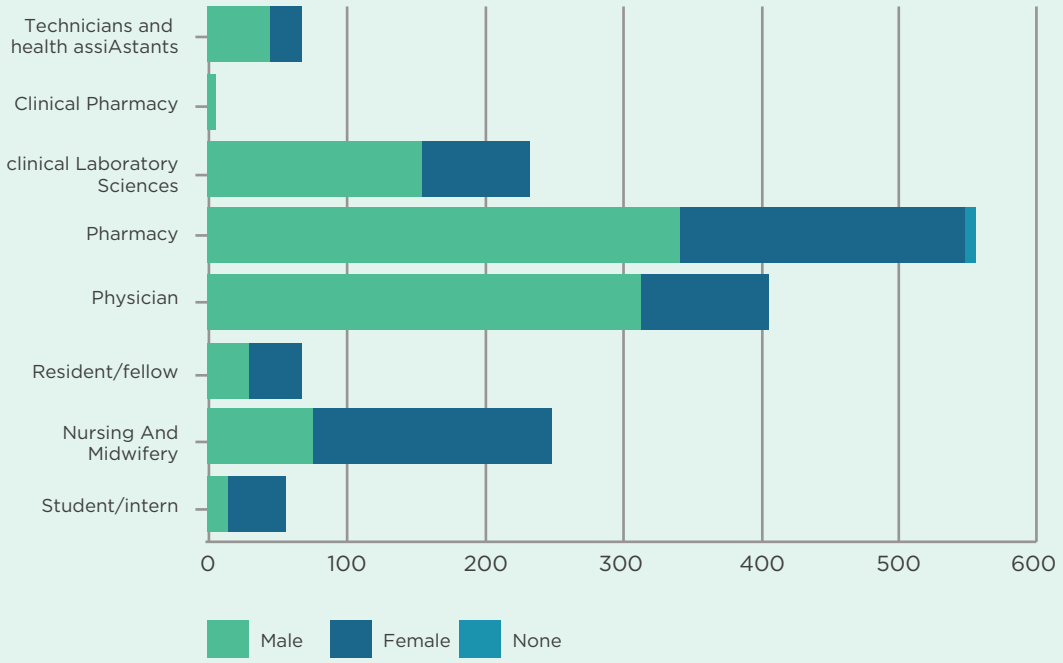
Thank you to our silver sponsors

At Janssen, we're creating a future where disease is a thing of the past. We're the Pharmaceutical Companies of Johnson & Johnson, working tirelessly to make that future a reality for patients everywhere by fighting sickness with science, improving access with ingenuity, and healing hopelessness with heart. We focus on areas of medicine where we can make the biggest difference: Cardiovascular & Metabolism, Immunology, Infectious Diseases & Vaccines, Neuroscience, Oncology, and Pulmonary Hypertension.

KSAPT 2020
EVENT PERFORMANCE REPORT

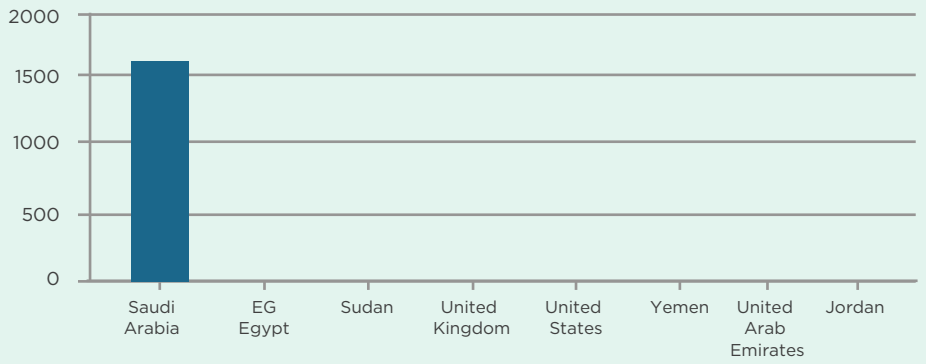
Total Free Participant for Conference	1508 Members - Free
Total Paid Participant for Conference	139 Member - Paid
Total Paid Participant for Workshop only	57 Member - Paid

Statistics By Profession



Profession	Total
Technicians and Health Assistants	57
Clinical Pharmacy	5
Clinical Laboratory Sciences	234
Pharmacy	570
Physician	408
Resident / Fellow	70
Nursing and Midwifery	251
Student / Intern	57

Statistics By Cities

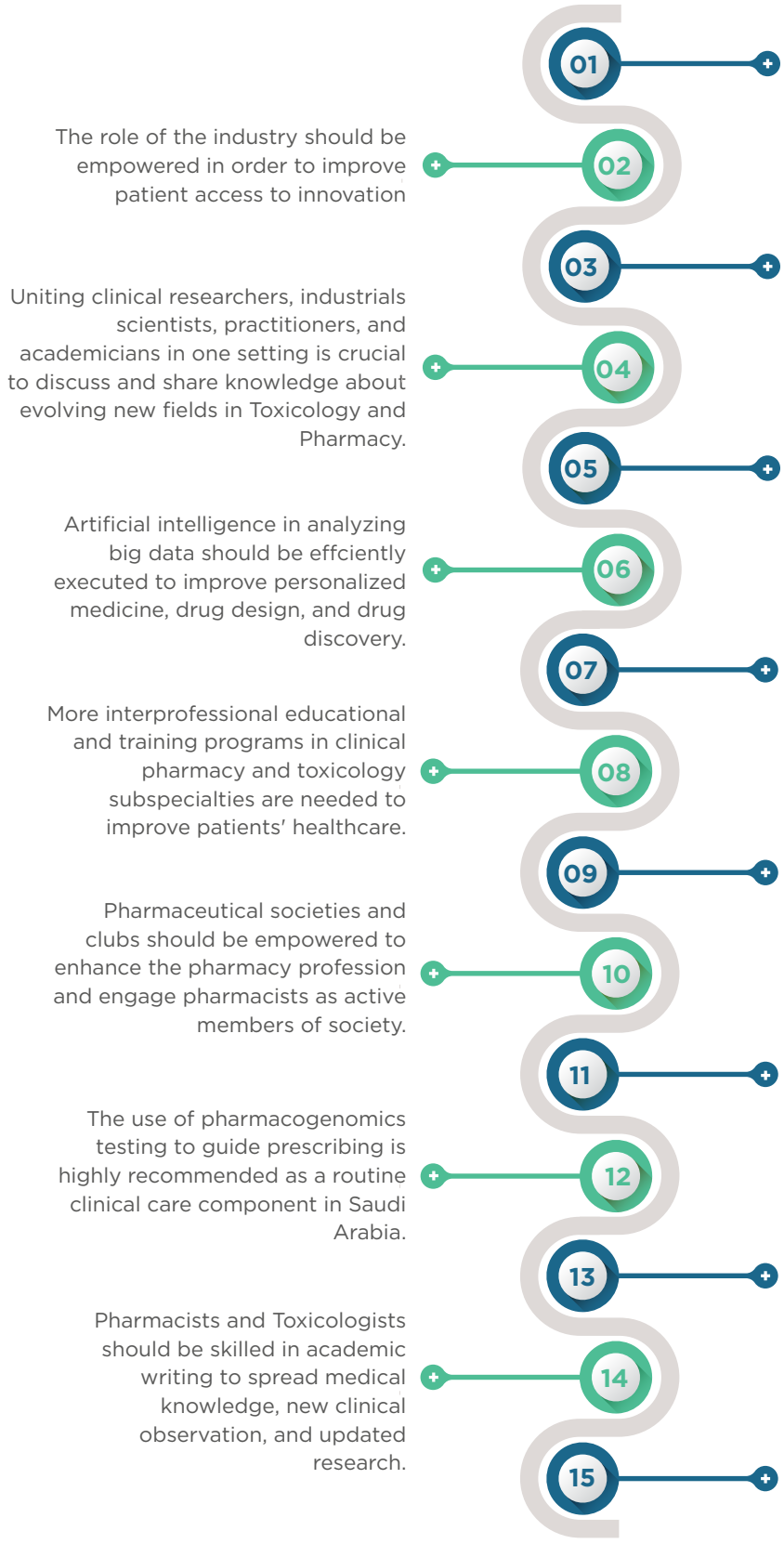


Countries	Total
Saudi Arabia	1631
Egypt	8
Sudan	2
United Kingdom	1
United States	1
Yemen	1
United Arab Emirates	1
Jordan	1

Overall, the event was :

518 Responses

KSAPT 2020 RECOMMENDATIONS FROM THE ADVISORY COMMITTEE



01 Clinical pharmacists and Toxicologists should be engaged in value-based agreements for clinical practice as they can play an essential role from conceptualization to generation of insight.

02 The role of the industry should be empowered in order to improve patient access to innovation

03 Modernizing pharmacy and toxicology practice is needed to enhance drug affairs transformation in Saudi Arabia's health clusters

04 Uniting clinical researchers, industrials scientists, practitioners, and academicians in one setting is crucial to discuss and share knowledge about evolving new fields in Toxicology and Pharmacy.

05 Promoting quality research and real-world evidence in an atmosphere of genuine international cooperation between toxicologists, pharmacists, bioinformatics scientists, academicians, computer

06 Artificial intelligence in analyzing big data should be effciently executed to improve personalized medicine, drug design, and drug discovery.

07 Promoting safe, effective, patient-centered, timely, and effcient interprofessional healthcare should be implemented to meet patients' needs and preferences by all healthcare providers

08 More interprofessional educational and training programs in clinical pharmacy and toxicology subspecialties are needed to improve patients' healthcare.

09 Using machine learning applications should be applied to advance healthcare procedures, particularly in identifying health outcome and prognosis, drug manufacturing, and clinical trials.

10 Pharmaceutical societies and clubs should be empowered to enhance the pharmacy profession and engage pharmacists as active members of society.

11 Critical thinking, skills, and processes should be more exercised in decision-making to solve clinical dilemmas.

12 The use of pharmacogenomics testing to guide prescribing is highly recommended as a routine clinical care component in Saudi Arabia.

13 Practitioners need to increase knowledge about hazardous chemicals and harmful effect on human.

14 Pharmacists and Toxicologists should be skilled in academic writing to spread medical knowledge, new clinical observation, and updated research.

15 Preparing KSAPT to serve as an international platform for interprofessional collaborative researchers worldwide is a priority. This will widen the professional collaborations and opportunities in Toxicology and Pharmacy.

KSAPT 2020 EVENT

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