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Scientific Tracks & Abstracts

(Day 1)

Haydar Al-Tukmagi, Clin Pharmacol Biopharm 2016, 5:4(Suppl)
http://dx.doi.org/10.4172/2167-065X.C1.022

The Iraqi board of clinical pharmacy

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Since the mid-nineties of 20th century, the Iraqi clinical pharmacists were trying to find their real role in hospitals. Although, the one year clinical pharmacy program is good, but it is neither a specialized program nor hospitals residency and is not recognized by Ministry of Higher Education. In addition, it does not cover the advances in medicine. Establishing of Board Certification Program began to be the good idea since 2000. After 2003, with the well-known situation in Iraq, the idea was rejected in 2005 by the Arabic Board for the Medical Specializations because of lack of such branch of study. The idea was shifted to be as a branch of Iraqi Board of Medical Specializations which is one of Iraqi Ministry of Higher Education and Scientific Researches institutes. It was approved in 15-5-2011 as the first branch of such study in the region. The first 8 students were registered and started the study on 1-10-2012 in Medical City Hospital in Baghdad after a competition of 87 pharmacists. The 4 years training program for the resident clinical pharmacists depends on the American Board of Clinical Pharmacy under supervision of more than 40 consultant physicians and 20 consultant pharmacists. Applying the pharmaceutical care plan for patients in oncology, pediatrics and dialysis, besides the application of TDM and PK for drugs, are the main roles of the board graduated in hospitals and it will be the corner stone for the new job description of pharmacists in hospitals that we lack.

Biography

Haydar Al-Tukmagi has completed his PhD from Baghdad College of Pharmacy in 2011 and he has been working as an Assistant Professor in Clinical Pharmacy since 2012. He is the Chief of Clinical Pharmacy Department in College of Pharmacy-Baghdad University, a Team Director of Community Pharmacy Services in Iraqi Pharmacists Syndicate since 5 years, Establishing Member of the Iraqi Clinical Pharmacy Association, Supervisor of more than 12 postgraduate students and also a Consultant Pharmacist in MOH. He has published 17 papers in the field of clinical and community pharmacy.

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Notes:

Wang Jing-Wen et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Exploration and construction of clinical pharmacist training innovation mode in China

Wang Jing-Wen, Wang Lei, You Guo-Jiao, Qiao Yi, Wu Yin, Zhang Wei, Lu Yao, Zhao Xian and Wen Ai-Dong
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Purpose: The study aims at establishing a training mode for clinical pharmacists. It is expected that internationalization process of clinical pharmacist training in China can be propelled and education level and quality can be improved.

Methods: A total of 100 senior clinical pharmacists in the tertiary teaching hospitals were randomly divided into two groups, 50 pharmacists in either group. Traditional training methods (TTM) were taken in group A, while clinical practical problem training methods (CPM) were adopted in group B. Some distinctive teaching modes such as role exchange, case discussion, mobile pharmaceutical care and virtual classroom were carried out during the training period in group B. 28 scales were established for teaching evaluation so that students may perform quality assessment in the whole process including clinical practice, teaching ward-round, design of examination questions, etc.

Results: Compared with the group A (using TTM), the group B (using CPM) had remarkable superiority in regard to professional quality, clinical competence and effects of teaching. In terms of medication indicators CPM had a higher degree of contribution to the level of clinical medication compared with TTM, which was more evident in preventing errors and risks in the medication with respect to the rate of medication without indications, the occurrence of repeated medication, over-dosage and the frequency of drug administration. Moreover, the scale of satisfaction showed that CPM was highly approved by physicians, nurses, patients and their relatives. As a result, students of group B also obtained more confidence and sense of identity from the profession of clinical pharmacist.

Conclusion: It is the first time that CPM teaching mode is implemented in China. In the clinical teaching practice CPM may provide an effective training for improving students' ability of autonomous learning, innovative thinking and problem-solving, which improves the overall effectiveness of clinical teaching and plays a prominent role in upgrading the education quality and training level for clinical pharmacists.

Biography

Wang Jing-Wen is the Deputy Director of the Department of Pharmacy, Xijing Hospital, Fourth Military Medical University, China. She is a Program Specialist for the rational use of antibiotics universal program at NHFPC (National Health and Family Planning Commission of the People's Republic of China). She is mainly engaged in exploration and construction of Clinical Pharmacist Training Innovation Mode in China and carrying out severe infections specialty medications work. She is a Chinese Medical Association Clinical Pharmacist. She is the Deputy Editor of 5 books and has published more than 30 papers in reputed journals.

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Roseane Maria Maia Santos, Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Evaluation of a probable regulatory network between CYP1A1, CYP1A2 fragment and AHR on coffee consumption

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Coffee is the most widely consumed beverage worldwide with known health benefits. Besides caffeine, coffee contains a very complex mixture of organic compounds, such as chlorogenic acids, caffeic acid, kahweol, trigonelline, minerals. However, coffee when roasted also produces polycyclic aromatic hydrocarbons, some of them with carcinogenic effects. Caffeine is primarily metabolized by CYP1A2 responsible for approximately 95% of caffeine metabolism. CYP1A2 presents polymorphism that can determine a decrease in the enzyme inducibility. Carriers of variant CYP1A2*1F allele are slow caffeine metabolizers, whereas individuals who are homozygous for CYP1A2*1A allele are fast metabolizers. CYP1A1 encodes another member of the cytochrome P450 superfamily of enzymes, which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. Its expression is induced by some polycyclic aromatic hydrocarbons, some of which are found in cigarette smoke. Genomic-wide association studies) of coffee drinking suggest a strong association with CYP1A1/CYP1A2 and AHR genes. An increased intake of caffeine was associated with having a T-allele for CYP1A1-CYP1A2. They also found that another intergenic loci at 7p21 that corresponds to aryl hydrocarbon receptor (AHR), has a regulatory role in basal and substrate-induced expression of CYP1A1 and CYP1A2. They concluded that it is possible that genotypes associated with increased CYP1A2 enzyme activity, resulted in increased caffeine metabolism. This new study's objective is to examine if there is a relationship between coffee consumption and CYP1A1, CYP1A2 and AHR genotypes in the population of our previous pilot study.

Biography

Roseane Maria Maia Santos has completed her PhD from SUNY at Buffalo and is an Associate Professor at Department of Pharmaceutical Sciences at School of Pharmacy. She has published many papers, participated as peer Reviewer for various journals and has written chapters and textbooks in Portuguese, English and Korean.

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Christina Yuen Ki Leung, Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Advanced clinical pharmacy system in a reformed hospital in China aiming to improve the quality of patient care and to enhance the job satisfaction of the clinical pharmacists

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The University of Hong Kong-Shenzhen Hospital adopts the good pharmacy practices from the West and has implemented an advanced clinical pharmacy system. We have been using near-patients and near-doctors approach to provide high quality of clinical pharmacy service to patients and healthcare professionals to ensure safety and efficacy of drugs use. The clinical pharmacists join the doctor-led ward rounds regularly on selected wards such as ICU and Medicines Wards. For all newly admitted in-patients, the clinical pharmacists carry out medication reconciliation and the information is recorded in the electronic prescribing system permanently. They also check the in-patient prescriptions for clinical appropriateness using approved reference sources. In addition, pharmacists involve actively in warfarin patient counseling service and in the stroke clinical pathway for our in-patients. Since early 2015, clinical pharmacists have participated in the smoking cessation clinic, pediatric respiratory clinic and diabetic clinic to provide patient counseling services. In addition, clinical pharmacists deliver drugs-related talks for patients in the Cardiac Rehabilitation Centre and on Endocrine Ward regularly and have prepared medication-related videos and patient leaflets. Furthermore, clinical pharmacists give talks to patients in the Out-Patient Forum regarding drugs use for smoking cessation, drugs use in hepatitis B, safe use of insulin injection, effective use of inhalation devices and medication safety in children including use of oral syringe. All these quality improvement plans are to enhance medication safety and optimization of drugs use. Clinical pharmacists in China find this experience rewarding and have gained lots of job satisfaction by noticing the positive impact on the quality of patient care.

Biography

Christina Yuen Ki Leung has completed two Bachelor degrees in England; Management Sciences degree followed by a Pharmacy degree. Following the registration as a Pharmacist in England, she has worked in a number of teaching hospitals in London. After completing Junior Pharmacist training and the Postgraduate Diploma in Pharmacy Practice, she spent 12 years as Women's and Children's Pharmacist, mainly specializing in Pediatric ICU, Pediatric Liver, Obstetrics and Gynecology. She has published a number of articles including two articles relating to drugs use in pediatric liver diseases for UK children healthcare magazine. She is also a registered Pharmacist in Hong Kong and currently working as a Senior Pharmacist (Clinical Pharmacy Service) at the HKU-SZH in China. She is also the Honorary Lecturer of the Department of Pharmacology and Pharmacy at the University of Hong Kong.

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Sabah H. Akrawi et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Potentiation of gentamicin induced nephrotoxicity by molsidomine in rats

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Reactive oxygen metabolites have been implicated in gentamicin induced nephrotoxicity. This study tests whether or not nephrotoxicity of gentamicin is associated with cellular activation or lipid peroxidation and the use of vasodilator, molsidomine, plays a role in the renal lesion. Male Wister 200-300 g rats were distributed randomly into five groups, Saline treated group, Molsidomine treated group, Gentamicin treated group, Molsidomine + Gentamicin treated group, and Gentamicin + Ethanol treated group. The results showed that gentamicin induced nephrotoxicity was associated with a significant activation of cellular lipid peroxidation manifested by high serum and cortical tissue malondialdehyde, and the use of molsidomine aggravates this process. These data indicate that vasodilators and in particular those with nitric oxide (NO) dinating property may be extremely harmful when used with gentamicin.

Biography

Sabah Akrawi, PhD, graduated from the College of Pharmacy/University of Kentucky/USA. He is an assoc. Prof. of Clinical Pharmacokinetic and Biopharmaceutic and a faculty member at the College of Clinical Pharmacy/King Faisal University/KSA. He supervised 17 postgraduate pharmacy students, and he has published more than 26 articles. He is a member of the scientific council of the KFU and chaired many defense committees for graduation of graduate students.

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Rahaf M Ajaj et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Aroma Niche: New innovative opportunities related to aromatherapy in the United Arab Emirates (UAE)

Rahaf M Ajaj and Mohammed A Salem, Suzan M Shahin
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The United Arab Emirates (UAE) is a country located in the arid region of the world. The UAE economy is an oil-based economy, which is a non-renewable resource. Besides, the fresh water resources in the country are scarce and limited to ground water, which is also a non-renewable water resource, that's expected to be vanished soon. Though the country has harsh environmental conditions, however, it is a home for around 700 to 750 plant species, in which, "based on our last findings", 135 species are considered as essential oil-bearing species. Many of these aromatic plants were significantly used by bedouins in the traditional practices; also have great economic potential (e.g. pharmaceutical, aromatherapy, food, cosmetic, fragrance, hygiene, etc.). The purpose of this work is to spot the light on new innovative opportunities related to aromatherapy. The idea is to establish "AROMA NICHE" as the first leading aromatherapy company in the UAE that provides superior quality essential oils from the UAE native plants at competitive market prices. The company is a unique of its kind for extracting the original aroma of the native plant species, grown under their original ecological niche. The promising company goal is to be an eco-friendly company, following the best environmental practices in sustainability and providing certified organic health care products. We believe that desert plant species who survive the arid conditions are capable of providing high quality ingredients with potential applications in aromatherapy. "AROMA NICHE" is an officially registered idea in the Science and Innovation Park, UAE University. The company's passion is to offer 100% natural products based on the solid scientific evidences of traditional herbal medicine and laboratory research works. We promise to cross the boundaries of traditional knowledge, modern science and technology and provide our customers luxurious health care products in aromatherapy that are 100% locally produced.

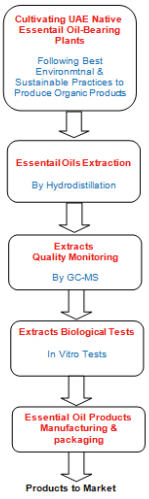

Figure 1: The promising aromatherapy company overview.

Biography

Rahaf Ajaj is a Ph.D. candidate in the Department of Aridland Agriculture at the United Arab Emirates University. She received Master degree in Radiation Protection, Post-Graduate diploma in Radiation Protection and Safety OF Radiation Sources and Bachelor in Medical Physics. In her PhD., Ajaj conducts research on the activity concentration of NORM/TENORM level in soil. She aims to establish a baseline measurement for radioactivity in the soil in the UAE. Ms. Ajaj is one of the co-founders of the promising company "Aroma Niche". Currently, Aroma Niche is officially a registered company in the Science an Innovation Park/ UAEU, in the idea to prototype" I2P" stage.

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Suzan M Shahin et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Insights into the ethnomedicinal applications of *Aerva javanica* with scanning electron microscope (SEM) photos

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Aerva javanica, "known as desert cotton" is an essential oil-bearing plant species. This plant is belonging to the *Amaranthaceae* (cockscomb) family. *A. javanica* is a perennial xerophytic shrub, which is common and widespread in tropical and subtropical dry areas. *A. javanica* has various applications in the traditional herbal medicine of many countries "e.g. Saudi Arabia, Pakistan and United Arab Emirates". The main purpose of this work is to discuss detailed insights about the ethnomedicinal practices related to this plant, which provide insights into the possible applications in the modern medicine field. Also, the study will provide detailed information about the general characteristic of *A. javanica* essential oil. Including it is yield, physical characteristics, main chemical groups, main chemical constituents and it is biological activities. Supported with plant part indication and essential oil extraction technology. Also, the study will illustrate scanning electron microscope (SEM) photos for *A. javanica* leaf (abaxial and adaxial views) collected from the United Arab Emirates wildlife flora. In conclusion, the work will provide some recommendations related to the possible future applications based on *A. javanica* in the pharmaceutical field.

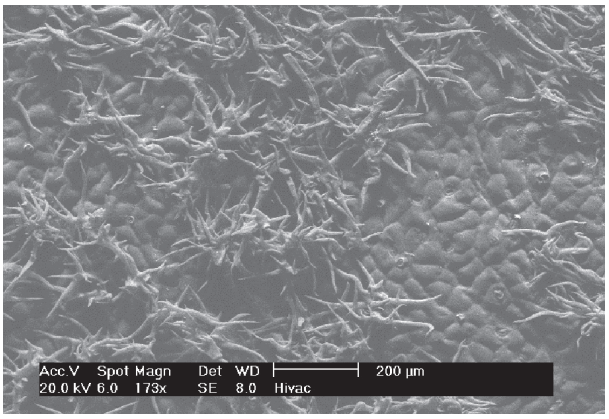

Figure 1: The promising aromatherapy company overview.

Biography

Suzan M Shahin is the Lead Ambassador for all graduate students at the United Arab Emirates University (UAEU). She is a Researcher and PhD candidate in the Aridland Agriculture Department, College of Food and Agriculture, UAEU. She worked as an Instructor in the arid land agriculture department, UAEU, for the period from 2013 to 2015. Her research interests are the UAE indigenous plants, medicinal plants, essential oil extraction and analysis, aromatherapy, anti-oxidant biological activities, natural resources, natural drugs, environmental sciences and sustainable environmental approaches. She is the Co-founder of the promising company Aroma Niche in collaboration with professional members from arid land agriculture, chemical engineering and business administration.

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Sara Louise Joe, Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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IDS-iontophoretic delivery of Sumatriptan-trials, tribulations but little triumph: A perspective

Sara Louise Joe
There's a Pharmacist in the House LLC, USA

With a dear health care provider (DHCP) letter, dated June 10, 2016, Teva Pharmaceuticals temporarily suspended the sale, marketing and distribution of ZECUITY® (Sumatriptan Iontophoretic Transdermal System) due to post-marketing reports of application site reactions described as "burn" and/or "scar" in patients treated with ZECUITY®. The first and only FDA-approved migraine patch's September 2015 release, indicated for the acute treatment of migraine headaches with or without aura had represented what was thought to be a game-changing treatment option for millions of migraine patients, especially those with migraine-related nausea (MRN). Accordingly, a beginning-to-end study was launched in the interest of preventing reoccurrence, analyzing root causes and providing corrective tools and solutions. The science of iontophoretic delivery systems, the technology of transdermal route of administrations, and methods of adverse event reporting and post-marketing surveillance were scrutinized.

Biography

Sara Louise Joe is the President of There's a Pharmacist in the House, LLC, an independent Pharmacist Consultant coalition engaged in developing research, educational and clinical strategies and initiatives for healthcare providers and consumers. She has over 25 years of experience as a Pharmacist in retail, hospital and pharmacy informatics practice. She has earned her BS in Pharmacy from Temple University in Philadelphia, PA, USA and her Doctorate of Pharmacy from Broadmore University in Stamford, Ontario, Canada. She has previously been an Adjunct Professor of Pharmacology at South University-Virginia Beach, VA, USA and was awarded CVS Pharmacist of The Year in her region in 1992 and 1993. She is a 2016-17 APhA delegate for the Academy of Pharmacy Practice and Management (APhA-APPM) delegation and an active Member of the APhA Medication Therapy Management Special Interest Group Committee.

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Scientific Tracks & Abstracts

(Day 2)

Stefan Bughi et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Addressing inpatient polypharmacy: A multidisciplinary team intervention to improve patient safety

Stefan Bughi, Ashley Manchanda, Stephanie A Bughi, Richard Wong, Fernando Gonzalez, Shan-Pin Fanchiang, Brian Joyo, Bryan Kakehashi, Almara Nazarian, Andrew Wong and Sylvia Shaw
Rancho Los Amigos National Rehabilitation Center, USA

Background: Polypharmacy (PPRx) is common among US patient population, and may be as high as 50% in patients over 65. PPRx among inpatients can be associated with an increased rate of medical errors, adverse reactions, prolong hospitalization and cost.

Aim: The goals of the present project were to explore the prevalence of PPRx at our facility and raise awareness and provide guidance regarding reduction of PPRx.

Methods: Using electronic medical record we reviewed the medication list for the inpatients admitted at our facility in the spring of 2016. PPRx was defined as taking more than 10 drugs. Hospitalists were informed about the risks and possible consequences of PPRx and modalities to correct them. Interventions via multidisciplinary team work, safety rounds and improve communication in addressing PPRx were implemented, as part of a quality/safety improvement project.

Results: Among the 105 inpatients, 87 (83%) experienced PPRx, taking an average of 15.6 medications. The average patient age was 48.7±10.7 years, 78/87 (90%) were male and 9/87 (10%) were female. These patients received a total of 1353 medications, of which 56% were scheduled medications (SM) and 44% were PRN meds. Among many patients with PPRx: H2 Blockers/PPI's were prescribed without a clinical diagnosis; Benadryl was frequently used as a PRN sleep medication; and muscle relaxant and narcotics were frequently prescribed concomitantly. The project outcome reflected in the April 2016 data, which compared with the data from April 2015 showed an 80% decrease of prescribed multiple sedating agents.

Conclusion: Successful interventions to decrease polypharmacy require multidisciplinary team work, educational interventions and increase communication.

Biography

Stefan Bughi is a Clinical Associate Professor of Medicine at the Keck School of Medicine, University of Southern California in Los Angeles in the Division of Diabetes/Endocrinology. He is board certified in Internal Medicine and Endocrinology and presently working as a Physician Specialist at Rancho Los Amigos National Rehabilitation Center (RLANRC). He is the Chair of Graduate Medical Education, the Chair of the Physician Well-Being Committee and the Physician Patient Safety Officer at RLANRC. He is also a Member of the Medication Safety Committee. He is a Fellow of the American Board of Diabetes and Fellow of the American Institute of Stress. He has completed his Master's in Academic Medicine from USC Keck School of Medicine. His research interests include human factor and patient safety, endocrinology of stress and the effects of stress on psychosomatic disorders and stress and medical profession. He has presented his research data at local, national and international meetings.

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Emma Yeritsyan et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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AP-PRP-1 antiplatelet properties of proline rich polypeptide-1 (PRP-1)

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The hypothalamic PRP-1 produced in NSO and NPO possesses multiple pharmacological properties: Immunomodulator, antibacterial and antiviral, antitumor, neuroprotective including recently discovered cerebrovascular effects and anticoagulation activity of PRP-1 underlay the investigation of its role on platelet aggregation mapping process. The antiplatelet property of PRP-1 was demonstrated on ADP-tem induced method using ROTEM platelet system. The healthy volunteers (n=22) aged 20-35 were involved in the experiment. The statistical analysis was performed using ANOVA test. Obtained results demonstrate that the incubation of PRP-1 (in concentration 0.024 μg/μl) with blood samples characterized by standard parameters of aggregation process (A6, MS and AUC) did not induce any significant changes on platelet aggregation process after ADP-tem initiation. In spite of this, incubation of PRP-1 with blood samples characterized by high level of aggregation process parameters leads to prevention of ADP induced aggregation which is appeared by decreasing of A6, MS and AUC levels for 52%, 62% and 55,6% ($p<0.01$) accordingly. In case of PRP-1 incubation with blood samples characterized by low level of baseline aggregation process parameters leads to increasing of A6, MS and AUC values for 58.5%, 85.1% and 93.9% accordingly. It is noticeable that in both cases (blood samples with low and high level of aggregation process parameters) PRP-1 incubation turns the platelet aggregation parameters level into direction leading to their standard values. Thus, the presented investigation indicates that PRP-1 possesses regulatory role on aggregation process. These data could be served for design and development of novel antiplatelet agents based on PRP-1 structure.

Biography

Emma Yeritsyan is currently a PhD student at the Yerevan State Medical University. She has obtained her Bachelor's and Master's degree from the Faculty of Pharmacy, Yerevan State Medical University. She has also worked at the Scientific Center of Drug and Medical Technology Expertise as an Expert. She has published more than 15 papers in scientific journals and has also participated in several conferences.

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Mervat Alsous et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Depression among patients with diabetic foot in Jordan

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Objectives: The aims of this study were to assess depressive symptoms in patients with diabetic foot using center for epidemiologic studies depression scale (CES-D) and investigate the association between depressive symptoms and characteristics of patients with diabetic foot.

Methods: A sample of 108 patients with diabetic foot was recruited from May 2015-November 2015. The center (CES-D) was used to assess risk for depression among patients using cut-off score ≥27. Patients' demographic data and medical history were collected using pre-structured forms.

Results: Of the entire sample, 38.9% have risk for major depression according to CES-D score. Univariate analyses showed that age, gender, income, duration of DM were not associated with an increase in risk for major depression among patients with diabetic foot. On the other hand according to logistic regression analysis, retinopathy were significantly associated with increased depressive symptoms among diabetic foot patients (odds ratio 3.41(p=0.017). Being on a combination of oral hypoglycemic agents and insulin treatment was significantly associated with lower depressive symptoms (odds ratio 3.38 (p=0.022). Patients with primary education level have the highest odds ratio among all factors associated with risk for major depression (OR, 4.07; p=0.003).

Conclusion: The risk for major depression among patients with diabetic foot in Jordan is high compared to general diabetic population. This was associated with low educational level, retinopathy, and not taking combination of oral hypoglycemic agents and insulin. There is a need for routine screening for depression in patients with diabetic foot to help in the prevention, early detection of depression and even referral to a psychiatrist.

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Daniel Roberto Magdaleno Rodriguez et al., Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Efficiency and safety of combining silybin, lipoteichoic acid and selenomethionine in the treatment of non-alcoholic fatty liver

Daniel Roberto Magdaleno Rodriguez, Avila Lamadrid Pamela Georgina, Sanchez Flores Jessica, Cortes Moreno Gabriela Yanet and Lara Padilla Eleazar
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Obesity has become a public global health, we cannot lose sight that this disease has reached epidemic global proportions, which is why the World Health Organization (WHO) calls obesity as the epidemic of the century. The purpose of this study was to evaluate the efficacy and safety of the combination of silymarin, selenomethionine and alpha lipoteichoic acid in adult patients with non-alcoholic fatty liver using different dosages, comparing changes in patients receiving doses every 8 hours against the patients that received doses every 12 hours. It was evaluated the biochemical changes through blood, morphological determinations by ultrasound and anthropometric measurements. It was a longitudinal, prospective and comparative study during 12 weeks. This study was conducted under 88 exogenous obese patients, aged between 18 and 60 years of both sexes with Body Mass Index (BMI) between 30 and 45 kg/m^2 and diagnosed with fatty liver confirmed by ultrasound with sub-clinical alterations in liver enzymes. Patients were randomized into two groups of 44 subjects each and were administered for three months the combination of silymarin, selenomethionine and alpha lipoteichoic acid with dosage of one capsule every 8 hours (group 1) and every 12 hours (group 2).

Biography

Daniel Roberto Magdaleno Rodriguez is currently a Medical student of Superior School of Medicine (Escuela Superior de Medicina) at Instituto Politécnico Nacional, Mexico. He is a Junior Researcher who has been working at the Obesity Center of the School since 2013 on different research lines regarding obesity, diabetes, fatty liver, metabolic syndrome and hypertension. His recent research is focused on drug effectiveness and security for obesity and fatty liver treatment. He is also the CEO and Founder of AIMEDS A.C.

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Pamela Georgina Avila Lamadrid, Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Randomized controlled clinical trial open to 24 weeks of efficiency and safety in outpatient with obesity grade I and II treated with Clobenzorex vs. Clobenzorex with melatonin

Pamela Georgina Avila Lamadrid, Magdaleno Rodriguez Daniel Roberto, Sanchez Flores Jessica, Cortes Moreno Gabriela Yanet and Lara Padilla Eleazar
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Introduction: Obesity is a disease characterized by the excess of adipose tissue (fat) in the body. Such disease is determined in adult persons when there is a Body Mass Index (BMI) is equal or higher than 30 kg/m^2.

Purpose: To evaluate the efficacy and safety of Clobenzorex 60 mg/Melatonin 3 mg (morning or night) against to Clobenzorex 60 mg in Mexicans with exogenous obesity during 24 weeks.

Methodology: It was a longitudinal, prospective and comparative study. This study was conducted under 180 exogenous obese patients, administered: (1) Treatment "A" (Clobenzorex 60 mg/Melatonin 3 mg 1 capsule VO, morning), (2) Treatment "B" (Clobenzorex 60 mg/capsule VO Melatonin 3 mg one night) or (3) Treatment "C" (60 mg 1 capsule Clobenzorex VO, morning). Efficacy was evaluated by weight loss (kg), BMI, waist-to-hip ratio (WHR) and percentage of body fat. On the other hand safety was evaluated by recording adverse events occurred.

Results: The treatment "A" causes polydipsia, xerostomia and headache, treatment "B" had a safety advantage for shorter duration and number of adverse events. Finally, "C" treatment compared to "A" and "B"" treatment, had the lowest rate of adverse effects by causing only one, which could be polydipsia, headache or constipation.

Conclusion & Significance: All treatments were clinically effective. Greater reduction of the WHR and waist circumference was observed when using Clobenzorex. However, Clobenzorex/Melatonin (night) resulted safer due to the lower number and duration of adverse events.

Biography

Pamela Georgina Avila Lamadrid is currently a Medical student of Superior School of Medicine (Escuela Superior de Medicina) at Instituto Politecnico Nacional, Mexico. She is a Junior Researcher who has been working at the Obesity Center of the School since 2016 on different research lines regarding obesity, diabetes, fatty liver, metabolic syndrome and hypertension. Her most important recent research is focused on drug effectiveness and security for obesity and fatty liver treatment.

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Antonios Ramsis Gaber Mikhaeel, Clin Pharmacol Biopharm 2016, 5:4(Suppl)
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Hydroquinone and its derivatives in treatment of hyperpigmentation

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Hydroquinone is well known as a product for treatment of hyperpigmentation. But in the Middle Eastern countries bleaching became the major interest for Eastern/Arabic woman even for males also. This feeling to have lighter skin is increased at the recent era due to multimedia connection between countries Eastern & Western which motivate Eastern people to be lighter. Since around 10 years hydroquinone was dispensed plain in form of cream, then a pharmaceutical company in Egypt started to produce it in combined form with Tretinoin. Hydroquinone (HQ) is one of the most effective inhibitors of melanogenesis *in vitro* and *in vivo* and is widely used for the treatment of melanosis and other hyperpigmentary disorders. In an attempt to get some insight into the molecular mechanism of the depigmenting action, which is still very poorly understood, we have investigated the effect of HQ on the tyrosinase catalyzed conversion of tyrosine to melanin. Incubation of 0.5 mM tyrosine with 0.07 U per ml tyrosinase in phosphate buffer at pH 6.8 in the presence of 0.5 mM HQ led to no detectable melanin formation, due to the preferential oxidation of HQ with respect to tyrosine (HPLC evidence). Kinetic investigations showed that HQ is a poorer substrate of tyrosinase than tyrosine; yet, it may be effectively oxidized in the presence of tyrosine owing to the generation of catalytic amounts of dopa acting as co-factor of tyrosinase. Product analysis of HQ oxidation with tyrosinase in the presence of dopa showed the predominant formation in the early stages of hydroxybenzoquinone (HBQ), arising from enzymatic hydroxylation and subsequent oxidation of HQ, along with lower amounts of benzoquinone (BQ). These results suggest that the depigmenting activity of HQ may partly be related to the ability of the compound to act as an alternate substrate of tyrosinase, thereby competing for tyrosine oxidation in active melanocytes. Also monobenzyl ether of hydroquinone is misused by some patient and even it is considered as treatment of vitiligo but also started to be used as a cream for treatment of hyperpigmentation.

Biography

Antonios Ramsis Gaber Mikhaeel has completed his Bachelor of Pharmacy degree from Misr University for Science and Technology, Cairo, Egypt. He is the Owner and Manager of Ramsis Pharmacy in Cairo, Egypt and also a Senior Pharmacist of Muscat Dermatology & Laser Center, Muscat, Oman.

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A comparative study on efficacy of polymyxin B, neomycin and polymyxin B, neomycin, hydrocortisone in the treatment of Otitis Externa

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Introduction: Acute otitis externa is a common condition involving inflammation of the ear canal. The acute form is caused primarily by bacterial infection, with *Pseudomonas aeruginosa* and *Staphylococcus aureus* the most common pathogens. Acute otitis externa presents with the rapid onset of ear canal inflammation, resulting in otalgia, itching, canal edema, canal erythema, and otorrhea and often occurs following swimming or minor trauma from inappropriate cleaning. Tenderness with movement of the tragus or pinna is a classic finding. Neomycin/polymyxin B/hydrocortisone preparations are a reasonable first-line therapy when the tympanic membrane is intact. Oral antibiotics are reserved for cases in which the infection has spread beyond the ear canal or in patients at risk of a rapidly progressing infection.

Aim: To compare the efficacy of polymyxin B, Neomycin and Polymyxin B, Neomycin, Hydrocortisone in the treatment of Otitis externa.

Methodology: This study was carried out in the Department of ENT, Nepal Medical College Teaching Hospital (NMCTH), Nepal from August 2012 to May 2014. This, prospective randomized study included patients with otitis externa. Patients of all age groups and both gender were included in this study. Patients were randomized into two groups; Group A patients, who received Polymyxin B, Neomycin and Group B patients who received Polymyxin B, Neomycin, Hydrocortisone. Pack soaked either with polymyxin B neomycin/ hydrocortisone and applied for 48 hours. If not recover again applied for next 48 hours.

Biography

Mayuri Gupta Pathak obtained MD in Clinical Pharmacology from Nepal Medical College Teaching Hospital (NMCTH), Kathmandu, Nepal in 2015. She obtained MBBS from Kathmandu Medical College Teaching Hospital (KMCTH), Kathmandu, NEPAL in 2006. She is currently working as Lecturer at Patan Academic of Health Science (PAHS), Kathmandu Nepal. She worked as a tutor in Clinical Pharmacology before starting MD for 3 months in NMCTH. Her trainings include Neonatal advanced life support in KMCTH, Interdepartmental clinical meeting on "Diabetics and Anesthesia" in KMCTH and advanced cardiac life support in Anesthesia in NMCTH.

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Evaluation of intestinal permeability and efflux of lamivudine using *ex vivo* method in Franz cells

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For orally administered drugs, the bioavailability is an important parameter related to the absorption process. In the gut, most of compounds are transported mainly by trans-cellular passive diffusion. However, the presence of efflux transporters, as P-glycoprotein (P-gp), can interfere on the absorption process. Lamivudine (3TC) is widely used for HIV treatment and its bioavailability has been reported as variable (around 80%). Based on that, the intestinal permeability and efflux were evaluated for 3TC using *ex vivo* method in Franz cells. Male Wistar rats were anesthetized and a portion of jejunum was mounted in the Franz cells. The experiments were performed considering the direction apical (A) to basolateral (B). A Ringer-Krebs-Hepes modified solution was used as transport media and 3TC was solubilized for permeability studies while 3TC with P-gp inhibitor verapamil were solubilized for efflux experiments. The transport media with drug or drug with verapamil was added in the donor compartment and samples were collected from the receptor chamber. The viability of all intestinal membranes was checked by trans-epithelial electrical resistance (TEER) before and after experiments. Metoprolol was used as marker of high permeability. The apparent permeability (Papp) of 3TC was 1.26 (± 0.27)x10-5 cm/s and for 3TC with verapamil was 3.77 (±1.1)x10-5 cm/s. These results suggest that 3TC is a P-gp substrate. In the literature, 3TC is a weak P-gp substrate in MDCK-MDR1, which corroborates with the results obtained in Franz cells. The differences between results of 3TC and 3TC with verapamil suggest that the antiretroviral is a P-gp substrate, which may be related to its variable bioavailability. In addition, the study showed that the Franz cells device can be used for efflux studies.

Biography

Andre Bersani Dezani has completed his Master's degree in 2010 and since then, he is completing his PhD thesis related to permeability studies using different methods as *ex vivo, in situ* and *in vitro* models. His research field also includes "Solubility, biopharmaceutical classification systems (BCS and BDDCS), dissolution studies and ADME prediction". He was a Visiting Scholar at Benet Lab, University of California San Francisco, USA.

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Permeability study using the single-pass intestinal perfusion in rats: Is the zidovudine a substrate for P-gp?

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The small intestine is the main site of absorption for many drugs orally administered and it depends on solubility and permeability characteristics of the compound to reach the bloodstream. Many drugs are absorbed mainly by trans-cellular passive diffusion, but the presence of efflux transporters, such as P-glycoprotein (P-gp) can hamper the permeation. The oral bioavailability of zidovudine (AZT) is not complete and among other factors, efflux transport can be involved on its permeation process. Thus, this study aims to evaluate the permeability of AZT and its interaction with P-gp using the single-pass intestinal perfusion (SPIP) in rats. Male Wistar rats were anesthetized with ketamine-xylazine mixture. Blank perfusion solution pH 6.5 at 37°C was pumped into jejunum to clean any residual debris. Then, the perfusion solution containing AZT was pumped into intestine and samples were collected from the distal portion. The same procedure was made for AZT with P-gp inhibitor verapamil and all samples were quantified by HPLC method. Metoprolol and ranitidine were used as permeability marker substances in this study. The effective permeability (Peff) of AZT was 4.37 (±0.45)x10^{-5} cm/s. For AZT with verapamil, the Peff was 5.44 (±0.39)x10^{-5} cm/s. These results showed that AZT has an interaction with P-gp. That is in accordance with other *in vitro* and *ex vivo* studies reported in the literature, which can explain the variability on the oral bioavailability. The comparison between AZT and AZT with verapamil results led to conclude that AZT had its permeability increased when verapamil was used. Thus, AZT can have an interaction with P-gp which may influence on its permeability and contribute for its incomplete bioavailability.

Biography

Thaisa Marinho Dezani has completed her Master's degree in 2012 and since then, she is completing her PhD thesis related to permeability studies using different methods as *in situ, ex vivo* and *in vitro* models. Her research field also includes "Solubility, biopharmaceutical classification systems (BCS and BDDCS), dissolution studies and ADME prediction". She was a Visiting Scholar at Benet Lab, University of California San Francisco, USA.

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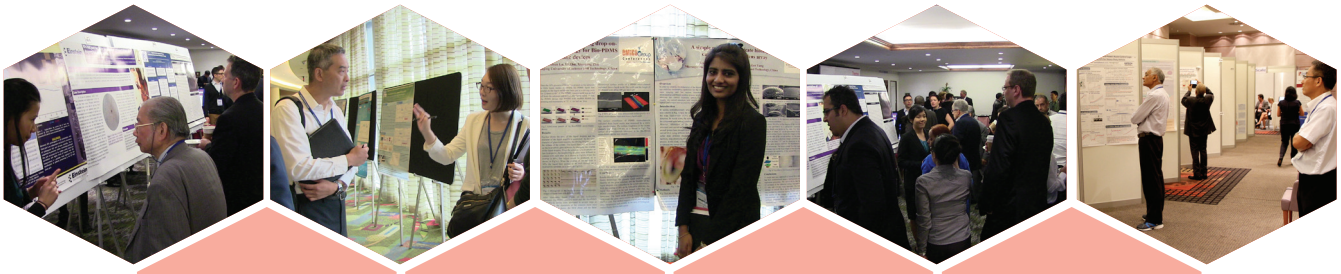

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Nanotechnology and Microfluidics for Biomedical Application

Hongbo Zhang
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International Conference on Statement Nanobiotechnology is a novel discipline that indicate the merger of biological and nanotechnology. It is a multidisciplinary subject, which interplay between physics, materials science, synthetic organic chemistry, engineering and biology. To efficiently diagnostic and treat diseases, the understanding of detail mechanism of disease occur would be critical. The qualitative and quantitative analysis at the molecular scope in real time is highly demanded but very challenging to achieve. Nanobiotechnology is to solve the fascinating problems offered by biology through designing and synthesizing of specific nanomaterials and utilize specific techniques. DNA nanotechnology is one important example of nanobiotechnology. As the central genetic molecule in biological systems, DNA possesses many exceptional properties, including its biological function, biocompatibility, molecular recognition ability, and nanoscale controllability. These unique attributes enabled the creation of functional DNA nanostructures, which act as natural bridge between nanotechnology and biotechnology, leading to far-ranging real-world applications. Microfluidic technology is revolutionary for high throughput diagnostics and other biological applications. In Prof. David A. Weitz's group in Harvard University (http://weitzlab.seas.harvard.edu/), they have developed the droplet based microfluidic techniques for Single Cell RNA-Sequencing using DNA Barcode Beads; Single-cell Polymerase Chain Reaction for metagenomic studies and Sepsis Diagnosis; Single-cell analysis, screening and sorting; high-throughput culturing of single cells for selection based on extracellular metabolite production or consumption and etc. In addition, microfluidic technology is also powerful in nano/micro-fabrications. All kinds of monodisperse nano/micro-particles can be fabricated in microfluidic channels at high efficiency. Herein, I am planning to utilize different nanobiotechnology tools, especially DNA nanotechnology and microfluidic techniques to investigate the real-world fascinating problems in biology, to understand the detail mechanism of cell signaling, gene expression and to develop nanomachines for disease diagnostics and treatments.

Biography

Hongbo Zhang, (PhD in Pharmacy) is an Assistant Professor in Åbo Akademic University, Finland. In December 2012, he received his PhD from the Faculty of Pharmacy, University of Helsinki. Then Dr. Zhang joined Adj. Prof. Hélder A. Santos' group in University of Helsinki, as a Postdoctoral Fellow in January 2013 and visited Prof. David A. Weitz's group at Harvard University in March 2014 to October 2015. Dr. Zhang is specialized in nanomedicine, controlled drug delivery, microfluidics, imaging, molecular biology and drug metabolism. He has published more than 30 publications (total impact factor > 200). His research focus is to bridge nanotechnology to biology, including utilizing functional nanoparticles on biomedical applications. In addition, Dr. Zhang is an expert in microfluidics techniques. Dr. Zhang is currently leading two research projects, from Jane and Aatos Erkko Foundation (2015-2018) and Academic of Finland (2016-2019).

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