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Posters

Clinical Pharmacy 2017

Comparison between dinoprostone (PGE2) vaginal gel and PGE2 vaginal tablet for the induction of labour, in term primigravida pregnant women at Women's Hospital-Qatar, a retrospective study

Abdallah Kamal, Mouza Al-Hail, Muna Al-Saadi, Mahmoud Gassim and **Ahmad Morsi**
Women's Hospital, Hamad Medical Corporation, Qatar

Objective: To compare the effectiveness of PGE2 vaginal gel vs tablet for the induction of labour in primigravida women at term.

Design: A retrospective study conducted on patients who received PGE2 between 1 May and 31 October 2015.

Setting: The induction unit/Women Hospital-Qatar.

Main Outcome Measures: To assess the rate of successful vaginal delivery achieved following induction of labour in primigravida induced with PGE2 vaginal tablet compared to gel. In addition to identify the proportion of women delivered vaginally within 24 hours of receiving PGE2 tablet compared to gel.

Results: 63 women received PGE2 gel vs 67 women received tablet. There was insignificant difference between both groups in the percentage of vaginal delivery (70.1% in gel vs 57.1% in tablet, p= 0.123), and insignificant difference in vaginal deliveries within 24 hours (45.7% in gel vs 54.3 % in tablet, p = 0.55). However, a significant difference found when comparing mean time between the first induction dose and vaginal delivery specifically in patients delivered vaginally within 24 hours (771.76 min ± 341.2 in gel vs 989.52 min ± 275.7 in tablet group, p = 0.02). We also found that all patients achieved cesarean section delivery in both groups required epidural medicine for pain relief (p<0.001).

Conclusions: Overall, there were no significant differences in the rate of successful vaginal delivery as well as vaginal delivery within 24 hours between PGE2 vaginal gel and tablet. However, in patients who delivered vaginally within 24 hours, patients receiving vaginal gel showed faster induction to vaginal delivery when compared to tablet.

Biography

Abdallah Kamal, has completed MSc degree in clinical pharmacy from Queens University Belfast/UK in November 2016, working currently as a clinical pharmacist at Women's Hospital/Hamad Medical Corporation/Doha/Qatar

amahmoud11@hamad.qa

Notes:

Clinical outcome and cisplatin excretion influenced by GSTM1, GSTT1 and GSTP1 ile105val polymorphisms in head and neck squamous cell carcinoma patients treated with cisplatin chemoradiation

[1]Eder de Carvalho Pincinato, [2]Anna Paula L Costa, [2]Leisa Lopes-Aguiar, [2]Ericka F D Costa, [2]Tathiane R P Lima, [2]Patricia Moriel, and **[2]Carmen Silvia P Lima**
[1]University of Campinas, Brazil
[2]Mackenzie Presbyterian University, Brazil

Statement of the Problem: Cisplatin (CDDP) associated with radiotherapy (RT) is used in treatment of patients with head and neck squamous cell carcinoma (HNSCC). The responses to treatment as well as its side effects vary among individuals, and this fact may be explained by the genetic variability in metabolism of CDDP. The aim of this study was to access if inherited ability to cellular CDDP detoxification, mediated by GSTs enzymes alters the therapeutic and side effects of CDDP and RT and urinary concentration of CDDP in HNSCC patients.

Methodology & Theoretical Orientation: We evaluated, prospectively, 90 consecutive HNSCC patients, who received CDDP plus RT as treatment. Genotypes of GSTM1, GSTT1 and GSTP1 Ile105Val polymorphisms were analyzed by multiplex polymerase chain reaction (PCR) and PCR followed by restriction enzyme digestion, respectively, in peripheral blood DNA. Treatment side effects as well as renal and hearing toxicities were ranked through questionnaire and laboratory tests. Urinary doses of CDDP were performed by high performance liquid chromatography (HPLC).

Findings: Patients with GSTT1 null genotype presented less vomiting (20.0% vs. 64.4%; P=0.002), ototoxicity (41.7% vs. 79.3%; P=0.03), nephrotoxicity (69.94±21.40 vs. 62.87±20.72 EDTA-51Cr mL/min/1.73m²; P=0.03) and eliminates more CDDP (429.58±116.24 vs. 253.42±95.20 □g CDDP/mg creatinine; P=0.04) than those with the gene. Patients with GSTP1 Ile105Val homozygous variant genotype had shorter progression-free survival and those with GSTP1 Ile105Val homozygous wild genotype had shorter overall survival.

Conclusion & Significance: Our data indicate that SCCHN patients with inherited distinct abilities for CDDP metabolism, associated with GSTT1 and GSTP1 Ile105Val polymorphisms, exhibit distinct toxicities to treatment and urinary CDDP excretion. We believe that this data may constitute preliminary basis of future personalized.

Biography

Eder de Carvalho Pincinato has completed his Doctor degree from University of Campinas, Brazil. He is a Pharmacist, Assistant Professor of Hematology and Coordinator of Pharmacy course at Mackenzie Presbyterian University.

eder.pincinato@mackenzie.br

Notes:

Golden L. Peters, J Pharmacol Ther Res 2017

Developing a long lasting, mutually beneficial relationship between Saint Louis College of Pharmacy and Goa College of Pharmacy

Golden L. Peters
Saint. Louis College of Pharmacy, USA

In 2014, St. Louis College of Pharmacy (STLCOP) began an on-going, long-term partnership with a pharmacy school in southern India – Goa College of Pharmacy. This partnership, aims to strengthen pharmacy education in India through faculty and student exchange. To date our ongoing partnership has included the exchange of eight students and two STLCOP faculties on two visits. Additionally, this fall a STLCOP faculty member and five students will visit Goa College of Pharmacy and a faculty member and two students will travel to STLCOP. There has been an ongoing dialog between both institutions to finalize a formal memorandum of understanding (MOU), which is planned to be finalized and signed into effect during the next visit in October 2017. This poster's aim is to provide the details, timeline, order of actions, successes, pitfalls, and plans for the future that were encountered during the development of this successful international partnership. This poster will provide conference attendees a starting point for creating new, fruitful and long standing international partnerships.

Biography

Golden L. Peters received his B.A. degree from Fontbonne University in Clayton, Missouri, USA and his Doctor of Pharmacy degree from Southern Illinois University – Edwardsville in 2009. He completed a PGY-1 Pharmacy Practice Residency in 2010 at St. Elizabeth's Hospital in affiliation with Southern Illinois University Edwardsville School of Pharmacy. He is currently an Associate Professor of Pharmacy Practice at the St. Louis College of Pharmacy. He is also a Clinical Pharmacy Specialist in Primary Care at the VA St. Louis Health Care System – John Cochran Division. He is an editorial board member for Madridge Journal of Pharmaceutical Research. He has over 25 publications and more than 20 invited international presentations, spanning North America, Europe, Africa, and Asia.

Golden.Peters@stlcop.edu

Notes:

Homocysteine plasma level correlates with Methotrexate induced neurotoxicity in treated pediatric cancer patients

Mona Khalifa, Wael Zekri, Ayda Youssef and **Sanaa Kenawy**
Cairo University, Egypt

Despite its clinical success, methotrexate (MTX) therapy is associated with toxicities such as neurotoxicity, the pathogenesis of which remains unclear. It has been suggested that hyperhomocysteinemia is caused by MTX and is responsible for its neurotoxic effects. The aim of this study was to explore whether hyperhomocysteinemia was related to MTX-induced neurotoxicity. 29 cases with newly diagnosed acute lymphoblastic leukemia or non-hodgkin lymphoblastic lymphoma patients were studied; they were treated on a single clinical protocol that included four courses of high-dose methotrexate (HDMTX; 2.5 or 5.0 g/m2 per day) as consolidation therapy. A trend for higher plasma homocysteine levels among patients with neurotoxicity (P=0.005) was observed. The study participants' median plasma homocysteine concentrations at 42 h. after 1st and 2nd HDMTX (16.5 µmol/L and 13 µmol/L, respectively) were greater than the concentrations immediately before 1st and 2nd HDMTX (6 µmol/L and 7 µmol/L, respectively). The main complication observed during this work was repeated vomiting other complications were memory impairment, low activity. One of the patients comatosed and developed convulsions after the second-high dose MTX (MRI, Leucoencephalopathy), while the observed MRI manifestations during the study were demylination and leucoencephalopathy. It could be concluded that homocysteine level was elevated after HDMTX and its elevation may be related to neurotoxicity risk in treated pediatric cancer patients.

Biography

Mona Khalifa is a Clinical Pharmacist at the National Cancer Institute, Cairo, Egypt. She has completed her Bachelor's degree in Pharmaceutical Sciences from the School of pharmacy, Cairo University. This is the same university where she also got her Master of Science in Pharmacology and Toxicology. Her research interest is focusing on drug-related neurotoxicity in pediatrics and off-label use of drugs for brain disorders.

drmona200@hotmail.com

Notes:

Population pharmacokinetics of Amikacin in critically ill Mexican patients with obesity

Aréchiga-Alvarado N A[1], Milán-Segovia R C[1], Martínez-Gutiérrez F[1], Magaña-Aquino M[2] and **Romano-Moreno S[1]**
[1]University of San Luis Potosí, Mexico
[2]Hospital Central Dr. Ignacio Morones Prieto, Mexico

Background: Amikacin is an aminoglycoside antibiotic that is useful in the treatment of serious infections caused by Gram-negative bacteria. The aim of this study was to analyze the pharmacokinetic behavior of amikacin and estimate the dosing requirements in intensive care unit (ICU) Mexican patients with obesity using a mixed-effect model.

Methods: The patient population comprise 50 ICU patients of Hospital Central "Dr. Ignacio Morones Prieto" in San Luis Potosí (México). A one-compartment intravenous infusion model was used, and the following covariates were tested for their influence on the clearance (CL) and volume of distribution (Vd): age, weight, sex, height, body mass index (BMI), ideal body weight (IBW), adjusted body weight (ABW), serum creatinine, creatinine clearance (CrCL), urea, blood urea nitrogen, clinical diagnosis, mechanical ventilation and concomitant pharmacotherapy. The nonlinear mixed-effect model (NONMEM) was used to assess the population pharmacokinetic model of amikacin in this patient population.

Results: The final population model accounting for amikacin pharmacokinetics in ICU patients was: CL (L/h) = 7.5 (CrCL/130) 0.86, Vd(L) = 20.2 (IBW/68) 2.9, where CrCL and IBW influenced clearance and volume of distribution amikacin, respectively. Internal and external validations were performed to probe the stability and the precision of the final model. Stochastic simulations were executed to propose dosing guidelines based on the CrCL and IBW to reach expected amikacin concentrations.

Conclusion: A population pharmacokinetic model has been developed for ICU Mexican patients with obesity. The predictive performance of this population model for amikacin serum concentrations seems suitable for clinical purposes.

Biography

Aréchiga-Alvarado is a Pharmacobiological Chemist graduated from the Autonomous University of Zacatecas, México. After college, she has worked in a clinical analysis laboratory, later she was a Laboratory Technician at a university and she was in charge of a laboratory of soil and water physicochemical analysis. She is currently graduating from the Master of Pharmacobiological Sciences at the Autonomous University of San Luis Potosí, México.

arechiga.angelica.norma@gmail.com

Notes:

Pharmacotherapy assessment of patients in isolation precautions: A new experience at a university hospital

Patricia Moriel, Karen Prado Herzer Mattos, Cinthia Madeira de Souza and Isabela Romão Gouvêa
University of Campinas, Brazil

Introduction: Since the pharmacotherapy assessment is not implemented in clinical practice in most Brazilian hospitals, every specialist that participates in the care process of a patient can include a new drug in the pharmacotherapy, not taking into consideration the potential drug-drug interaction.

Objectives: This study aim to evaluate the pharmacotherapy of patients in isolation precaution focusing on drug-drug interactions, risks of toxicity and clinical outcomes.

Methods: Evaluation of medical prescription of patients in isolation precautions between September 2015 and May 2016 at general adult intensive care unit and specialized wards of a University Hospital. To identify the potential drug-drug interactions it was used the Micromedex® database. Antibiograms of every patient were followed throughout the antimicrobial treatment to evaluate the clinical outcomes.

Results: Prescriptions of 185 patients were analyzed and 100.0% of them were associated with at least one drug-related problem. Data demonstrated a high prevalence of contraindicated and major potential drug-drug interaction among the medical prescriptions evaluated. The most frequent were the interactions involving fluconazole, amiodarone, fentanyl and midazolam.

Conclusion: This study demonstrates a high prevalence of potential drug-drug interaction resulting from the complexity of pharmacotherapy of patients requiring contact precautions. Nevertheless, drug-drug interactions are among the main evitable causes of adverse drug reaction once the medical prescription assessment is a simple way by which pharmacists can early detect the drug interactions to prevent them from occurring. Specially regarding to antimicrobials, a microbiological diagnosis is quite useful in narrowing the regimen and ensure an accurate and satisfactory treatment.

Biography

Patricia Moriel is a Full Professor in the Faculty of Pharmaceutical Science at State University of Campinas (UNICAMP), Brazil. She is a Leader of the Clinical Pharmacy Group that is involved in the study of pharmacotherapy, drug adverse events, pharmacovigilance, pharmacokinetic, pharmacogenomics influences in adverse events, especially in cancer. She has authored more than 45 research articles, awards, conferences and the granting of a research projects. She has been the director of several works of Master in Medical and Pharmaceutical Science and Doctoral theses.

patricia.moriel@fcf.unicamp.br

Notes:

Skin hyperpigmentation associated with melanocyte activation and inflammatory process following intravenous polymyxin B treatment

Patricia Moriel, Karen Prado Herzer Mattos, Cintra, Isabela Romão Gouvêa, Leonardo Ávila Ferreira and **Paulo Eduardo Neves Ferreira Velho**
University of Campinas, Brazil

Polymyxins were widely used until the 1960s; however, they fell into disfavor owing to their toxicity. The subsequent growth of infections caused by multidrug resistant Gram-negative bacteria led to renewed use of this class of antimicrobials in clinical practice, owing to their low rate of bacterial resistance. Acquired skin hyperpigmentation following intravenous polymyxin B treatment has been previously reported, but little is known about its pathogenesis, clinical course, and treatment. We studied the clinical, dermatoscopic, histologic, and immunohistochemical skin properties of three patients who presented with this disorder. We concluded that hyperpigmentation due to intravenous polymyxin B treatment is associated with an inflammatory process and subsequent melanocyte activation. Since polymyxin B causes the release of histamine, which is known for its melanogenic effect, it is possible that skin darkening is associated with this inflammatory mediator. Histologic and immunohistochemical findings showed an abundant melanocyte-pigmented dendritic network. Langerhans cells hyperplasia and dermal IL-6 overexpression were also found, presumably for an inflammatory process due to polymyxin B use. IL-6 could act as a proinflammatory factor and an inhibitor of exacerbated melanogenesis, as previously described. These clinical and dermatoscopic findings contributed to a better understanding of how the pigmentary reaction manifests. Although the pigmentary disorder neither influence the outcome of the therapy nor warrant discontinuation of treatment, it nevertheless considerably affects the patient's quality of life

Biography

Patricia Moriel is a Full Professor in the Faculty of Pharmaceutical Science at State University of Campinas (UNICAMP), Brazil. She is a Leader of the Clinical Pharmacy Group that is involved in the study of pharmacotherapy, drug adverse events, pharmacovigilance, pharmacokinetic, pharmacogenomics influences in adverse events, especially in cancer. She has authored more than 45 research articles, awards, conferences and the granting of a research projects. She has been the director of several works of Master in Medical and Pharmaceutical Science and Doctoral theses.

patricia.moriel@fcf.unicamp.br

Notes:

5-Fluorouracil cardiotoxicity: Molecular mechanisms and protective effects of simvastatin

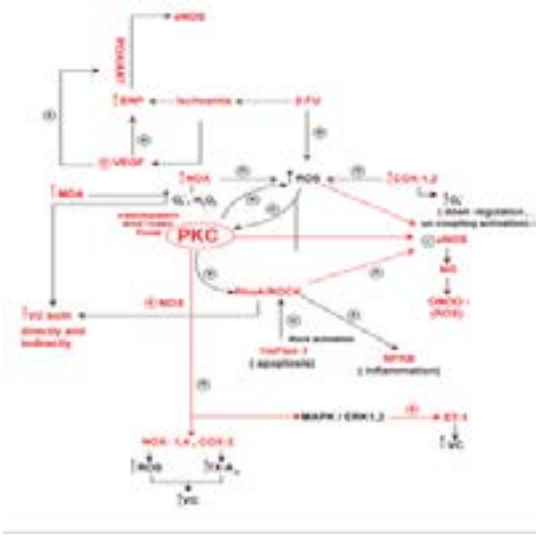
Mohammed R, Sallam N and **El-Abhar H**
Cairo University, Egypt

Background: 5-fluorouracil (5-FU) is a chemotherapeutic agent widely used in the treatment of different solid tumours, especially colorectal cancer. Its use is associated with rare but potentially serious cardiovascular toxicity. This study aims to investigate molecular mechanisms underlying the cardiovascular toxicity of 5-FU and the potential protective effects of simvastatin.

Methods: Adult male albino Wistar rats were randomly divided into four groups (15-20/group). The first group received normal saline (i.p) once weekly for six successive weeks. In the second group rats received 5-FU (50 mg/kg; i.p) once weekly for six successive weeks (cardiotoxic group). Rats of the third group received simvastatin (15 mg/kg/day, p.o.) daily for eight successive weeks. Finally, rats of the forth group received simvastatin daily a week before the first 5-FU injection, then concomitantly for six weeks, and continued alone for another week after the last dose of 5-FU. ECG recording was weekly carried out. Cardiac content of NADPH-oxidase, COX-2, NF-kB, p-eNOS and p-AKT in addition to aortic content of endothelin-1 and thromboxane-A2 were assessed by enzyme-linked immunosorbent assay. Protein expression of cardiac caspase-3 and Rho-kinase was evaluated by western blotting. Serum level of NT-proBNP and cardiac TBARS (thiobarbituric acid reactive substances) were also evaluated. Finally, histopathological evaluation of both cardiac and aortic tissues was carried out.

Results: 5-FU caused histopathological changes in both myocardial and aortic tissues. Myocardial ischemia and QTc prolongation were confirmed by ECG recording. 5-FU increased myocardial NADPH-oxidase and COX-2 content, leading to increased ROS production. Oxidative stress, inflammation and associated apoptosis in the heart were indicated by elevated TBARS, NF-kB content and caspase-3 protein expression, respectively. Elevated aortic tissue content of endothelin-1 and thromboxane-A2, the two potent vasoconstrictors was observed. 5-FU significantly increased ROCK protein expression and p-AKT content, and suppressed p-eNOS level. Finally, elevated serum level of NT-proBNP was observed. Simvastatin was able to prevent most of these abnormalities.

Conclusion: Direct myocardial injury and ischemia caused by endothelial dysfunction and activation of Rho/ROCK pathway are potential mechanisms of 5-FU cardiovascular toxicity. Inhibition of ROCK activity by simvastatin, a drug with potent antioxidant and pleiotropic properties, mitigates the cardiovascular toxicity of 5-FU.



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radwa.nasser@pharma.cu.edu.eg

Notes:

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Accepted Abstracts

Clinical Pharmacy 2017

J Pharmacol Ther Res 2017

Medicine knowledge in pharmacist daily clinical practice

Abduelmula R Abduelkarem
University of Sharjah, UAE

The pharmacy profession continues to shift from being a dispenser of medication to a more active medication manager. Pharmacists are now required to make clinical decisions, (usually with a physician's consent), that affect their patient's medical care. Changing doses, therapeutic switches between medications, and starting and stopping medication are all decisions that pharmacists make on a daily basis. In an era where clinical evidence is growing exponentially, the pharmacist's emerging role as a medication management expert requires a solid grounding in evidence-based practice. Training needs to start at the undergraduate level, and continue throughout a pharmacist's education. But even for practicing pharmacists, short, intensive workshops can make a meaningful difference. And when pharmacists practice in an evidence-based way, they can feel comfortable, they're bringing the best science to bear on pharmacy patient care. My presentation will discuss in details the clinical knowledge needs that will help pushing pharmacy towards evidence based practice.

aabdelkarim@sharjah.ac.ae

J Pharmacol Ther Res 2017

New discovery of treatment of complicated hemorrhoids without surgery

Ahmed M A Masaad
Taif University, Kingdom of Saudi Arabia

Hemorrhoids, also called piles, are vascular structures in the anal canal. In their normal state, they are cushions that help with stool control. They become a disease when swollen or inflamed; the unqualifiedly term “hemorrhoid” is often used to refer to the disease. The signs and symptoms of hemorrhoids depend on the type present. Internal hemorrhoids are usually present with painless, bright red rectal bleeding when defecating. External hemorrhoids often result in pain and swelling in the area of the anus. If bleeding occurs, it is usually darker. The new treatment is mainly depending on mechanism of contract the connective tissue surrounding the venous around anus by effervescent tannin base with strong anti-bacterial, antifungal and anti-viral effect of formula. The safety of drugs was tested in rabbits, rats first and then the experiment was done in hundreds of patients under license of ethics committee of Taif University. The percentage of cure conducted was 99%, this success leads to relive of pain over millions of patients around the world and minimize the risk of surgery treatment and cost beside quick relive of disease in two to three weeks with no chance of relapse of disease again.

ahmad.mosaad@hotmail.com

Notes:

J Pharmacol Ther Res 2017

Multiprofessional medical review among frail elderly people living in nursing homes: What is the impact on appropriateness and outcomes?

Chiara Cattaruzzi, Laura Cadelli, Lucrezia Marcuzzo, Antonella Antonini, Barbara Groppo and Barbara Ros
Integrated University Healthcare Company of Udine, Italy

Background: Polypharmacy and inappropriate prescribing is common in elderly patients and is associated with medication errors, adverse drug reactions and length of hospital stay. Interventions aimed to optimize prescribing appropriateness have been successfully applied in hospital settings. However, there is a paucity of data about the effect of a multiprofessional approach on clinical outcomes in people living in nursing homes.

Objectives: The aim of this study was: to evaluate prescribing appropriateness of therapies in elderly patients residing in nursing homes; to evaluate the impact of this intervention on healthcare outcomes such as admission to Emergency Department (ED) and hospitalization; and to investigate critical areas where further intervention would be required

Methods: We conducted a prospective observational study in 351 frail subjects aged >65 years, who lived in 7 nursing homes between April 2014 and September 2016. Clinical pharmacists reviewed each drug regimen and suggested written modifications on drug use to physicians and nurses. Criteria for optimizing therapies were the START-STOP Criteria, the adherence to the drug formulary or to product information. Drug-drug interactions were also evaluated. Patient medical records were accessed through the regional electronic healthcare database to collect clinical outcomes at six-month.

Preliminary Results: A significant decrease in the prevalence of inappropriate prescriptions (43.9% to 20.9%, $p<0.001$), drug interactions (13.1 to 7.8%, $p<0.001$) and in the total number of drugs (3009 to 2757, $p=0.008$) was observed. Drug withdrawal rate was 17% of total prescriptions. No statistical reduction in hospitalization or ED admission was shown.

Conclusions: A multiprofessional approach to medical review process was successful for decreasing drug inappropriateness, drug interactions and total number of prescribed medications. At least three critical areas in which intervention and training was required were identified: polypharmacy, inadequate severe interactions risk perception and crush drug administration.

chiara.cattaruzzi@asuiud.sanita.fvg.it

Notes:

J Pharmacol Ther Res 2017

Cellular and ionic mechanisms underlying effects of Cilostazol, Milrinone and Isoproterenol to suppress Arrhythmogenesis in an experimental model of early repolarization syndrome

Hector Barajas-Martinez[1], Bence Patocskai[1,2], István Koncz[1,2], Zsolt Gurabi[1,2], Charles Antzelevitch[3] and **Dan Hu[1]**
[1]Masonic Medical Research Laboratory, USA
[2]University of Szeged, Hungary
[3]Lankenau Institute for Medical Research, USA

Background: Early repolarization syndrome (ERS) is associated with polymorphic ventricular tachycardia (PVT) and ventricular fibrillation (VF), leading to sudden cardiac death.

Objective: The present study tests the hypothesis that the Ito-blocking effect of phosphodiesterase-3 (PDE-3) inhibitors plays a role in reversing repolarization heterogeneities responsible for arrhythmogenesis in experimental models of ERS.

Methods & Results: Transmembrane action potentials (AP) were simultaneously recorded from epicardial and endocardial regions of coronary-perfused canine left-ventricular (LV) wedge preparations, together with a transmural pseudo-ECG. The Ito-agonist NS5806 (7-15 μM) and ICa-blocker verapamil (2-3 uM) were used to induce an ER pattern and PVT. Following stable induction of arrhythmogenesis, the PDE-3 inhibitors Cilostazol and Milrinone or Isoproterenol were added to the coronary perfusate. All were effective in restoring the AP dome in the LV epicardium, thus abolishing the repolarization defects responsible for phase-2-reentry (P2R) and PVT. Arrhythmic activity was suppressed in 7/8 preparations by Cilostazol (10 μM), 6/7 by milrinone (2.5 μM) and 7/8 by isoproterenol (0.1-1 μM). Using voltage clamp techniques applied to LV epicardial myocytes, both Cilostazol (10 μM) and milrinone (2.5 μM) were found to reduce Ito by 44.4% and 40.4%, respectively, in addition to their effects to augment ICa.

Conclusions: Our findings suggest that PDE-3 inhibitors exert an ameliorative effect in the setting of ERS by producing an inward shift in the balance of current in the early phases of the epicardial AP via inhibition of Ito as well as augmentation of ICa, thus reversing the repolarization defects underlying development of P2R and VT/VF.

barajash@mmrl.edu

Notes:

J Pharmacol Ther Res 2017

Building and leading an inspired pharmacy team: Practical application of highly effective leadership principles

Mark Brouker
Brouker Leadership Solutions, USA

Building and inspiring a powerful pharmacy team is one of the most important roles of a pharmacy leader. Uninspired teams will perform essential duties but, nothing more. Inspired teams will certainly perform essential duties but, more importantly, these teams will earnestly and proactively accept challenges and initiate effective change before the issue goes from “simple challenge” to “urgent crisis”. In today’s extremely dynamic healthcare environment, inspired pharmacy teams will be able to quickly address challenges that guarantee attainment of long-term goals. This seminar, presented by the only United States Navy Pharmacy Officer in the history of the US Navy to command a Family Medicine Teaching Naval Hospital, will give the pharmacy leader practical and easily applicable tools to build a truly inspired pharmacy team.

brouker@chapman.edu

Notes:

J Pharmacol Ther Res 2017

Inhaled Amikacin in hospital acquired pneumonia post cardiac surgeries

Nirmeen A Sabry[1], Nehal A Hassan[2], Faten Farid Awdallah[2] and **Maggie M Abbassi[1]**
[1]Cairo University, Egypt
[2]National Heart Institute, Egypt

Objective: Nebulized antibiotics offer high efficacy due to significant local concentrations and safety with minimal blood levels. This study evaluates the efficacy and nephrotoxicity of nebulized versus intravenous amikacin in post cardiothoracic surgical patients with nosocomial pneumonia caused by multi-drug resistant gram-negative bacilli.

Design & Patients: Prospective, randomized, controlled study on surgical patients divided into two groups. The first group was administered intravenous amikacin 20 mg/kg once daily. The second group was prescribed amikacin nebulizer 400 mg twice daily. Both groups were co-administered intravenous piperacillin/tazobactam empirically. Recruited patients were diagnosed by either hospital acquired pneumonia or ventilator associated pneumonia where 56 (42.1%) patients were diagnosed with hospital acquired pneumonia, 51 (38.34%) patients were diagnosed with early ventilator associated pneumonia and 26 (19.54%) patients with late ventilator associated pneumonia.

Measurements & Main Results: Clinical cure in both groups was assessed on day 7 of treatment was the primary outcome. Efficacy was additionally evaluated through assessing the length of hospital stay, ICU stay, days on amikacin, days on mechanical ventilator, mechanical ventilator free days, days to reach clinical cure, and mortality rate. Lower nephrotoxicity in the nebulized group was observed through significant preservation of kidney function ($p<0.001$). Although both groups were comparable regarding length of hospital stay, nebulizer group showed shorter ICU stay ($p=0.010$), lower number of days to reach complete clinical cure ($p=0.001$), fewer days on mechanical ventilator ($p=0.035$), and fewer days on amikacin treatment ($p=0.022$).

Conclusion: Nebulized amikacin is a less nephrotoxic option which was associated with less deterioration in kidney function besides lower trough levels and more effective option which was associated with better clinical cure rates, less ICU stay, and fewer days to reach complete recovery compared to IV amikacin for surgical patients with nosocomial pneumonia.

nirmeen.sabry@pharma.cu.edu.eg

Notes:

J Pharmacol Ther Res 2017

Simultaneous determination of Irbesartan and hydrochlorothiazide in human plasma using HPLC coupled with tandem mass spectrometry: Application to bioequivalence studies

Lara Tutunji
University of Jordan, Jordan

A sensitive, specific and selective liquid chromatography/tandem mass spectrometric method has been developed and validated for the simultaneous determination of Irbesartan and hydrochlorothiazide in human plasma. The chromatographic conditions were optimized to achieve high resolution, and peak symmetry with a short retention time for both analytes and the internal standard. Plasma samples were prepared using protein precipitation with acetonitrile, the two analytes and the internal standard losartan were separated on a reverse phase C.sub.18 column (50 mm x 4 mm, 3 [mu] m) using water with 2.5% formic acid, methanol and acetonitrile (40:45:15, v/v/v (%)) as a mobile phase (flow rate of 0.70 mL/min). Irbesartan and hydrochlorothiazide were ionized using ESI source in negative ion mode, prior to detection by multiple reaction monitoring (MRM) mode while monitoring at the following transitions: m/z 296→269 and m/z 296→] 205 for hydrochlorothiazide, 427→175 for Irbesartan. Linearity was demonstrated over the concentration range 0.06-6.00 µg/mL for Irbesartan and 1.00-112.00 ng/mL for hydrochlorothiazide. The method demonstrated high calibration sensitivity (0.2537 and 0.0129 for Irbesartan and HCTZ, respectively). The developed and validated method was successfully applied to a bioequivalence study of Irbesartan (300 mg) with hydrochlorothiazide (12.5 mg) tablet in healthy volunteers (N=36).

tutunji@ju.edu.jo

Notes:

J Pharmacol Ther Res 2017

Facebook as a method to promote a mind-set of continual learning in an ambulatory care pharmacy elective course

Zach Weber
Purdue College of Pharmacy, USA

The use of online resources and social media is common place among college students and practicing pharmacists. To capitalize on this trend, a Facebook group was created in a Doctor of Pharmacy elective course to promote a mindset of continual professional development and learning outside of the didactic curriculum. Doctor of Pharmacy students in their third professional year who were enrolled in an ambulatory care elective course were included in this group. A survey was developed to assess the use of Facebook to promote a mindset of continual learning. This survey was administered anonymously during the first and last weeks of the elective course to gauge students' changing perspectives toward the use of social media to promote a continual-learning mindset. The survey results indicate a significantly higher level of agreement by students that Facebook allowed them to stay up-to-date with pharmacy information and improved their confidence in locating new information relevant to pharmacy practice, and that it could be used as an effective educational tool. This study indicates Facebook has potential as an auxiliary education source for traditional didactic pharmacy curricula. It improved students' perception of their knowledge and confidence in discussing up-to-date pharmacy information with each other and faculty. It also provided some guidance about the importance of learning new information in pharmacy practice. The application of Facebook, or other social media, in pharmacy education could provide enhanced faculty and student communication by capitalizing on a means of information delivery that current students are already accustomed to.

zaweber@purdue.edu

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