บทความที่น่าสนใจประจำเดือน สิงหาคม 2559

สาขาวิทยาศาสตร์สุขภาพ

Title :	Effect of Low Furanocoumarin Hybrid Grapefruit Juice Consumption on Midazolam Pharmacokinetics
Author :	Marina Kawaguchi-Suzuki, Negar Nasiri-Kenari, Jonathan Shuster, Fred Gmitter, Paul Cancalon, Felipe de Oliveria, Jennifer Kight, Eileen Handberg, Carl Pepine, Reginald F. Frye and Rhonda M. Cooper-DeHoff
Journal :	The Journal of Clinical Pharmacology: Accepted manuscript online: 9 AUG 2016 05:06AM EST | DOI: 10.1002/jcph.807
Abstract :	The objectives of this study were to investigate the effect of grapefruit juice low in furanocoumarins on CYP3A activity and to summarize previous findings of enzyme inhibition measured by the metabolism of midazolam after intake of grapefruit juice. Twelve healthy volunteers participated in a prospective, randomized, double-blinded, three-way crossover clinical study to determine the effect of regular grapefruit juice (RGJ) and a novel, low furanocoumarin hybrid grapefruit juice (HGJ) on the metabolism of oral midazolam, used as a probe for in vivo CYP3A activity, compared with water as a control. The RGJ was 100% hand-squeezed Hudson grapefruit juice, and the HGJ contained low amounts of furanocoumarin constituents. The point estimates (90% confidence intervals) for the RGJ/water midazolam AUC geometric mean ratio was 122% (107 – 140). The point estimate for the HGJ/water midazolam AUC ratio was within the 80%-125% bioequivalence range, indicating an absence of interaction. This finding also prompted a systematic review of available evidence on the pharmacokinetic alteration of midazolam by grapefruit juice. While most studies demonstrated alteration in midazolam pharmacokinetics supporting inhibition of CYP3A activity as a likely mechanism, the cohorts included in these studies and the extent of the pharmacokinetic interaction varied widely. The current study indicated grapefruit juice-drug interaction varies substantially based on patient characteristics and/or grapefruit juice product-related factors, including the amount of furanocoumarin constituents present in the juice.
Database :	Wiley Online Library

Title :	Chemoresistance of Lung and Breast Cancer Cells Growing Under Prolonged Periods of Serum Starvation
Author :	Juan Sebastian Yakisich, Rajkumar Venkatadri, Neelam Azad and Anand Krishnan V. Iyer
Journal :	Journal of Cellular Physiology: Accepted manuscript online: 9 AUG 2016 05:47PM EST | DOI: 10.1002/jcp.25514
Abstract :	The efficacy of chemotherapy is hindered by both tumor heterogeneity and acquired or intrinsic multi- drug resistance caused by the contribution of multidrug resistance proteins and stemness-associated prosurvival markers. Therefore, targeting multi-drug resistant cells would be much more effective against cancer. In this study, we characterized the chemoresistance properties of adherent (anchorage- dependent) lung H460 and breast MCF-7 cancer cells growing under prolonged periods of serum starvation (PPSS). We found that under PPSS, both cell lines were highly resistant to Paclitaxel, Colchicine, Hydroxyurea, Obatoclax, Wortmannin and LY294002. Levels of several proteins associated with increased stemness such as Sox2, MDR1, ABCG2 and Bcl-2 were found to be elevated in H460 cells but not in MCF-7 cells. While pharmacological inhibition of either MDR1, ABCG2, Bcl-2 with Verapamil, Sorafenib or Obatoclax respectively decreased the levels of their target proteins under routine culture conditions as expected, such inhibition did not reverse PX resistance in PPSS conditions. Paradoxically, treatment with inhibitors in serum-starved conditions produced an elevation of their respective target proteins. In addition, we found that Digitoxin, an FDA approved drug that decrease the viability of cancer cells growing under PPSS, downregulates the expression of Sox2, MDR1, phospho- AKT, Wnt5a/b and β-catenin. Our data suggests that PPSS-induced chemoresistance is the result of extensive rewiring of intracellular signaling networks and that multi-resistance can be effectively overcome by simultaneously targeting multiple targets of the rewired network. Furthermore, our PPSS model provides a simple and useful tool to screen drugs for their ability to target multiple pathways of cancer resistance.
Database :	Wiley Online Library

Title :	DWI in Pediatric Small-Bowel Crohn Disease: Are Apparent Diffusion Coefficients Surrogates for Disease Activity in Patients Receiving Infliximab Therapy?
Author :	Jonathan R. Dillman, et al.
Journal :	American Journal of Roentgenology | Aug 9, 2016 (Ahead of Print)
Abstract :	OBJECTIVE. The purpose of this study was to determine prospectively whether bowel wall apparent diffusion coefficient (ADC) measurements can be used to monitor treatment response to infliximab therapy in the setting of pediatric small-bowel Crohn disease. SUBJECTS AND METHODS. Twenty-eight pediatric subjects with newly diagnosed biopsy-proven Crohn disease of the distal or terminal ileum treated with infliximab were enrolled. Subjects underwent MR enterography at baseline, 1 month after therapy, and 6 months after therapy. Imaging features were documented, including bowel wall ADC and arterial or enteric phase contrast-enhanced signal intensity normalized to that of unenhanced imaging. A linear mixed model assessed the relationship between ADC and time; patient age and sex and azathioprine combination therapy were covariates. The diagnostic performance (with 95% CIs) of an increase in bowel wall ADC of 20% or more for identifying response to infliximab was calculated using a decrease in normalized contrast-enhanced bowel wall signal intensity of 20% or more as the reference standard. RESULTS. Bowel wall ADC increased over time (mean [± SD], 1180 ± 200 × 10^{-6} mm2/s at baseline, 1420 ± 420 × 10^{-6} mm2/s at 1 month, and 1450 ± 450 × 10^{-6} mm2/s at 6 months; $p = 0.0003$); azathioprine therapy modulated this rate of change ($p = 0.003$). There was a statistically significant negative correlation between change in ADC and change in normalized contrast-enhanced signal intensity over time ($\rho = -0.36$; $p < 0.001$). The diagnostic performance of change in ADC for identifying response to infliximab therapy was sensitivity of 0.58 (95% CI, 0.34–0.80), specificity of 0.52 (95% CI, 0.31–0.72), positive predictive value of 0.48 (95% CI, 0.27–0.69), and negative predictive value of 0.62 (95% CI, 0.38–0.82). CONCLUSION. Bowel wall ADC increases over time in pediatric subjects receiving infliximab, but the diagnostic performance of ADC is likely insufficient for reliable treatment monitoring.
Database :	American Roentgen Ray Society

Title :	Pediatric Chest Radiographs: Common and Less Common Errors
Author :	Sarah J. Menashe, Ramesh S. Iyer, Marguerite T. Parisi, Randolph K. Otto and A. Luana Stanescu
Journal :	American Journal of Roentgenology | 1-9. 10.2214/AJR.16.16449 (Ahead of Print)
Abstract :	OBJECTIVE. Radiographic imaging of the pediatric chest presents several unique challenges and nuances, stemming from congenital variants and pathologic processes specific to this population. Errors in interpretation may lead to inappropriate further imaging, incurring additional radiation exposure and cost, as well as psychologic effects on the patients and their families. CONCLUSION. Here, we aim to highlight some common and less common pitfalls in pediatric chest radiography, as well as some tools for avoiding potential mistakes.
Database :	American Roentgen Ray Society

Title :	Relationship between depression, self-care behaviors, and treatment success among older Medicare beneficiaries with type 2 diabetes
Author :	Priyanka Gaitonde and Fadia T. Shaya
Journal :	Journal of Pharmaceutical Health Services Research: Version of Record online: 25 JUL 2016 | DOI: 10.1111/jphs.12147
Abstract :	Objective Comorbid depression among patients with diabetes is associated with an increased disease burden, healthcare utilization and adverse outcomes. However, little is known about how comorbid depression in older adults with diabetes affects diabetes treatment success. This study investigates the association between comorbid depression, diabetes-related self-care behaviors and blood glucose control among older Medicare beneficiaries with type 2 diabetes. Methods This pooled cross-sectional study used the Medicare Current Beneficiary Survey (MCBS) data for years 2006, 2008 and 2010. Depression was categorized into mild/episodic and moderate/severe. We defined levels of treatment success based on gradients of blood glucose control: all the time to little/none of the time. We used ordered-logit regression models for analyses.

	Key findings Among the study population of older Medicare beneficiaries with diabetes (n = 2418), 6.2% had episodic/mild depression and 7.9% had moderate/severe depression. Low frequency of performing self-check for blood glucose or sores on feet was not associated with either mild/episodic depression (OR = 0.92; 95% CI, 0.64 to 1.33)/(OR = 0.98; CI, 0.69 to 1.39) or moderate/severe depression (OR = 1.18; 95% CI, 0.83 to 1.66)/(OR = 0.98; 95% CI, 0.7 to 1.4) respectively. Patients with mild/episodic depression were more likely to reach blood glucose control little/none of the time, as compared to those with no comorbid depression (OR = 1.62; 95% CI, 1.17 to 2.26). Conclusions Comorbid mild/episodic depression is associated with low treatment success among older Medicare beneficiaries with diabetes; however, neither levels of comorbid depression are associated with regularity in performing self-care behavior.
Database :	Wiley Online Library

Title :	The role of community pharmacists in supporting self-management in patients with psoriasis
Author :	Rod Tucker and Derek Stewart
Journal :	International Journal of Pharmacy Practice: Version of Record online: 4 AUG 2016 | DOI: 10.1111/ijpp.12298
Abstract :	Background The majority of patients with psoriasis have mild to moderate disease which can be managed in primary care with topical therapies. The supportive role of pharmacists for patients with long-term dermatological conditions is largely unknown. Objective To assess the impact of an educational intervention delivered by community pharmacists to improve self-management for people with psoriasis. Method The study involved a pre- and post-intervention design. Seven community pharmacies were selected based on their location (urban, rural etc.) and the

	pharmacists recruited via local comprehensive research networks. Patients with mild to moderate psoriasis were recruited either opportunistically or via a letter of invite by pharmacists who undertook a face-to-face consultation with one follow-up visit after 6 weeks. The primary outcome was the change in person-centred dermatology self-care index (PEDESI) score and secondary outcomes were the self-assessed psoriasis and severity index (SAPASI), measuring disease severity and the dermatology quality of life index (DLQI). Key findings A total of 47 patients were recruited. At 6 weeks, 42/47 (89.3%) patients completed the follow-up consultation. There was a significant increase in mean PEDESI scores (25.15 versus 17.78, $P < 0.001$) at 6 weeks compared to baseline. Similarly, SAPASI (11.60 versus 7.74, $P < 0.001$) and DLQI (7.21 versus 4.14, $P < 0.001$) scores improved significantly. Conclusion Pharmacist-assisted support for patients with psoriasis improved knowledge, reduced disease severity and the impact on quality of life. These results suggest that community pharmacists might have an important role to play in facilitating self-management for patients with psoriasis.
Database :	Wiley Online Library

Title :	A placebo-controlled trial of 'one-minute qigong exercise' on the reduction of blood pressure among patients with essential hypertension
Author :	Xinwee Chen, Wan N Arifin, Nani Draman, Nadiah Wan-Arfah, Muhammad I Ajalal, Han H Chen and Nyi N Naing
Journal :	Focus on Alternative and Complementary Therapies: Version of Record online: 22 JUL 2016 | DOI: 10.1111/fct.12254
Abstract :	Background Hypertension, defined as the persistent elevation of both systolic and diastolic blood pressure (SBP and DBP), and can lead to cardiovascular, cerebrovascular and renal morbidity and mortality if untreated. In Malaysia, primary hypertension among adults is relatively high and a large proportion of cases remains undiagnosed.

	Qigong is a traditional Chinese exercise that has been shown to have positive health effects. Objective This study aimed to evaluate the effectiveness of a 5-day 'one-minute qigong exercise' programme on the reduction of blood pressure among patients with primary hypertension. Methods An open-label, parallel-group, controlled trial was conducted among participants with essential hypertension who were staff of Universiti Sains Malaysia (USM). The participants were assigned to either the 'one-minute qigong exercise' programme or control, and underwent respective sessions for 5 consecutive days. The outcomes – SBP and DBP – were measured by standardised assessors using manual mercury sphygmomanometers. Repeated measures ANCOVA was performed to compare groups over time. Results At the end of the study, 21 (56.8%) and 25 (92.6%) participants remained in the qigong and control groups, respectively. Overall, there was no significant within- or between-group effect for mean SBP, while there was a marginally significant difference in mean DBP at the DBP×Group interaction level (P=0.049). Mean DBP on day 2 was statistically significantly different between groups (P=0.041). Conclusion Our study showed that the 'one-minute qigong exercise' programme, carried out over a period of 5 consecutive days, offers no additional benefit to control in reducing blood pressure in persons with primary hypertension.
Database :	Wiley Online Library

Title :	S-Nitrosoglutathione ameliorates acute renal dysfunction in a rat model of lipopolysaccharide-induced sepsis
Author :	Devadoss J. Samuvel, Anandakumar Shunmugavel, Avtar K. Singh, Inderjit Singh and Mushfiquddin Khan
Journal :	Journal of Pharmacy and Pharmacology: Version of Record online: 3 AUG 2016 | DOI: 10.1111/jphp.12608

Abstract :	Objective Sepsis induces an inflammatory response that results in acute renal failure (ARF). The current study is to evaluate the role of S-Nitrosoglutathione (GSNO) in renoprotection from lipopolysaccharide (LPS)-induced sepsis. Methods Rats were divided to three groups. First group received LPS (5 mg/kg body weight), second group was treated with LPS + GSNO (50 μg/kg body weight), and third group was administered with vehicle (saline). They were sacrificed on day 1 and 3 post-LPS injection. Serum levels of nitric oxide (NO), creatinine and blood urea nitrogen (BUN) were analysed. Tissue morphology, T lymphocyte infiltrations, and the expression of inflammatory (TNF-α, iNOS) and anti-inflammatory (IL-10) mediators as well as glutathione (GSH) levels were determined. Key finding Lipopolysaccharide significantly decreased body weight and increased cellular T lymphocyte infiltration, caspase-3 and iNOS and decreased PPAR-γ in renal tissue. NO, creatinine and BUN were significantly elevated after LPS challenge, and they significantly decreased after GSNO treatment. TNF-α level was found significantly increased in LPS-treated serum and kidney. GSNO treatment of LPS-challenged rats decreased caspase-3, iNOS, TNF-α, T lymphocyte infiltration and remarkably increased levels of IL-10, PPAR-γ and GSH. Conclusion GSNO can be used as a renoprotective agent for the treatment of sepsis-induced acute kidney injury.
Database :	Wiley Online Library

Title :	DJ-1/Park7 Sensitive Na+/H+ Exchanger 1 (NHE1) in CD4+ T Cells
Author :	Yuetao Zhou, Xiaolong Shi, Hong Chen, Shaqiu Zhang, Madhuri S Salker, Andreas F Mack, Michael Föller, Tak W. Mak, Yogesh Singh and Florian Lang
Journal :	Journal of Cellular Physiology: Accepted manuscript online: 10 AUG 2016 06:30PM EST | DOI: 10.1002/jcp.25516
Abstract :	DJ-1/Park7 is a redox-sensitive chaperone protein counteracting oxidation and presumably contributing to the control of oxidative stress responses and thus inflammation. DJ-1 gene deletion exacerbates the progression of Parkinson's disease presumably by augmenting oxidative stress. Formation of reactive oxygen species (ROS) is paralleled by activation of the Na+/H+ exchanger 1 (NHE1). ROS formation in CD4+ T cells plays a decisive role in regulating inflammatory responses. In the present study we explored whether DJ-1 is expressed in CD4+ T cells and affects ROS production as well as NHE1 in those cells. To this end, DJ-1 and NHE1 transcript and protein levels were quantified by qRT-PCR and Western blotting respectively, intracellular pH (pHi) utilizing bis-(2-carboxyethyl)-5-(and-6)-carboxyfluorescein (BCECF) fluorescence, NHE activity from realkalinization after an ammonium pulse, and ROS production utilizing 2',7' –dichlorofluorescin diacetate (DCFDA) fluorescence. As a result DJ-1 was expressed in CD4+ T cells. ROS formation, NHE1 transcript levels, NHE1 protein, and NHE activity were higher in CD4+ T cells from DJ-1 deficient mice than in CD4+ T cells from wild type mice. Antioxidant N-acetyl-cysteine (NAC) and protein tyrosine kinase (PTK) inhibitor staurosporine decreased the NHE activity in DJ-1 deficient CD4+ T cells, and blunted the difference between DJ-1-/- and DJ-1+/+ CD4+ T cells, an observation pointing to a role of ROS in the up-regulation of NHE1 in DJ-1-/- CD4+ T cells. In conclusion, DJ-1 is a powerful regulator of ROS production as well as NHE1 expression and activity in CD4+ T cells.
Database :	Wiley Online Library

Title :	Divergence of helper, cytotoxic, and regulatory T cells in the decidua from miscarriage
Author :	Yasuhiko Ebina, Shigeki Shimada, Masashi Deguchi, Yoko Maesawa, Norifumi Iijima and Hideto Yamada
Journal :	American Journal of Reproductive Immunology: Version of Record online: 27 JUL 2016 | DOI: 10.1111/aji.12546
Abstract :	Problem The aim of this prospective study was to evaluate phenotypic differences of helper T (Th), cytotoxic T (Tc), and regulatory T (Treg) cells in the deciduae of missed miscarriage with a normal chromosome karyotype of a fetus (MN) and missed miscarriage with an abnormal chromosome karyotype of a fetus (MA). Methods of study The decidua of 19 MN and 28 MA was obtained. Additionally, the decidua of 15 induced abortion (IA) and the endometrium of 19 non-pregnant women (EM) were obtained. IFN-γ+, IL-17+, CD25highFoxp3+ cells in CD4+ (Th) cells, and IFN-γ+ cells in CD8+ (Tc) cells were evaluated by flow cytometry. Results The percentages of IFN-γ+ Tc and CD4+CD25highFoxp3+ (Treg) cells in MN were significantly increased as compared with MA and IA. The percentage of IFN-γ+ Th in MN was increased as compared with IA. Conclusion Activation of IFN-γ+ Tc and Treg cells in the decidua might be associated with the pathophysiology underlying MN.
Database :	Wiley Online Library