บทความที่น่าสนใจประจำเดือน เมษายน 2557

Title :	Optimisation of secondary prevention of stroke: a qualitative study of stroke patients' beliefs, concerns and difficulties with their medicines
Author :	Caroline Souter, Anne Kinnear, Moira Kinnear and Gillian Mead
Journal :	International Journal of Pharmacy Practice: Article first published online, 9 MAR 2014 | DOI: 10.1111/ijpp.12104
Abstract :	Objectives The objectives of this study are to explore stroke patients' and carers' beliefs and concerns about medicines and identify the barriers to medication adherence for secondary stroke prevention. Methods Qualitative semistructured one-on-one interviews were conducted with 30 patients with diagnosis of stroke. Interviews were analysed using the framework approach. Key findings The study suggests that stroke patients' and carers' perceptions of their medicines may influence medicine-taking behaviour. In some cases when beliefs outweighed concerns, practical barriers prevented participants taking their medicines. Negative beliefs about a medicine were strong enough to prevent some participants starting a new medicine. Participants' actions were influenced by the perceived consequences of not taking the medicine and the impact of the adverse effect on their quality of life. Concerns lessened with time with no adverse effects. The importance of the role of the carer and of a medicine-taking routine was evident. Participants reported the inadequacy of information provision and the desire to have more written and verbal information. Some reported total lack of contact with their general practitioner or community pharmacist after hospital discharge. Conclusions Many of the difficulties stroke patients have adhering to secondary prevention strategies are potentially preventable with tailored information provision and appropriate monitoring and follow-up by primary healthcare professionals. We have designed an intervention addressing the identified barriers to medicine taking, the impact of which is currently being measured in a randomised controlled trial of a pharmacist-led home-based clinical medication review in stroke patients.
Database :	Wiley Online Library

Title :	Pharmacological Strategies in Lung Cancer-Induced Cachexia: Effects on Muscle Proteolysis, Autophagy, Structure, and Weakness
Author :	Alba Chacon-Cabrera, Clara Fermoselle, Alejandro J. Urtreger, Mercè Mateu-Jimenez, Miriam J. Diament, Elisa D. Bal de Kier Joffé, Marco Sandri and Esther Barreiro
Journal :	Journal of Cellular Physiology: Accepted manuscript online, 10 MAR 2014 02:59AM EST | DOI: 10.1002/jcp.24611
Abstract :	Cachexia is a relevant comorbid condition of chronic diseases including cancer. Inflammation, oxidative stress, autophagy, ubiquitin–proteasome system, nuclear factor (NF)-κB, and mitogen-activated protein kinases (MAPK) are involved in the pathophysiology of cancer cachexia. Currently available treatment is limited and

	data demonstrating effectiveness in in vivo models are lacking. Our objectives were to explore in respiratory and limb muscles of lung cancer (LC) cachectic mice whether proteasome, NF-κB, and MAPK inhibitors improve muscle mass and function loss through several molecular mechanisms. Body and muscle weights, limb muscle force, protein degradation and the ubiquitin–proteasome system, signaling pathways, oxidative stress and inflammation, autophagy, contractile and functional proteins, myostatin and myogenin, and muscle structure were evaluated in the diaphragm and gastrocnemius of LC (LP07 adenocarcinoma) bearing cachectic mice (BALB/c), with and without concomitant treatment with NF-κB (sulfasalazine), MAPK (U0126), and proteasome (bortezomib) inhibitors. Compared to control animals, in both respiratory and limb muscles of LC cachectic mice: muscle proteolysis, ubiquitinated proteins, autophagy, myostatin, protein oxidation, FoxO-1, NF-κB and MAPK signaling pathways, and muscle abnormalities were increased, while myosin, creatine kinase, myogenin, and slow- and fast-twitch muscle fiber size were decreased. Pharmacological inhibition of NF-κB and MAPK, but not the proteasome system, induced in cancer cachectic animals, a substantial restoration of muscle mass and force through a decrease in muscle protein oxidation and catabolism, myostatin, and autophagy, together with a greater content of myogenin, and contractile and functional proteins. Attenuation of MAPK and NF-κB signaling pathway effects on muscles is beneficial in cancer-induced cachexia. J. Cell. Physiol. 9999: XX–XX, 2014. © 2014 Wiley Periodicals, Inc.
Database :	Wiley Online Library

Title :	Are children with malaria at increased risk of bacterial infection? Invasive bacterial co-infection in African children with Plasmodium falciparum malaria: a systematic review
Author :	James Church and Kathryn Maitland
Journal :	BMC Medicine 2014, 12:31 | doi:10.1186/1741-7015-12-31
Abstract :	Background Severe malaria remains a major cause of pediatric hospital admission across Africa. Invasive bacterial infection (IBI) is a recognized complication of Plasmodium falciparum malaria, resulting in a substantially worse outcome. Whether a biological relationship exists between malaria infection and IBI susceptibility remains unclear. We, therefore, examined the extent, nature and evidence of this association. Methods We conducted a systematic search in August 2012 of three major scientific databases, PubMed, Embase and Africa Wide Information, for articles describing bacterial infection among children with P. falciparum malaria using the search string '(malaria OR plasmodium) AND (bacteria OR bacterial OR bacteremia OR bacteraemia OR sepsis OR septicaemia OR septicemia).' Eligiblity criteria also included studies of children hospitalized with malaria or outpatient attendances in sub-Saharan Africa. Results A total of 25 studies across 11 African countries fulfilled our criteria. They comprised twenty cohort analyses, two randomized controlled trials and three

	prospective epidemiological studies. In the meta-analysis of 7,208 children with severe malaria the mean prevalence of IBI was 6.4% (95% confidence interval (CI) 5.81 to 6.98%). In a further meta-analysis of 20,889 children hospitalised with all-severity malaria and 27,641 children with non-malarial febrile illness the mean prevalence of IBI was 5.58 (95% CI 5.5 to 5.66%) in children with malaria and 7.77% (95% CI 7.72 to 7.83%) in non-malaria illness. Ten studies reported mortality stratified by IBI. Case fatality was higher at 81 of 336, 24.1% (95% CI 18.9 to 29.4) in children with malaria/IBI co-infection compared to 585 of 5,760, 10.2% (95% CI 9.3 to 10.98) with malaria alone. Enteric gram-negative organisms were over-represented in malaria cases, non-typhoidal Salmonellae being the most commonest isolate. There was weak evidence indicating IBI was more common in the severe anemia manifestation of severe malaria. Conclusions The accumulated evidence suggests that children with recent or acute malaria are at risk of bacterial infection, which results in an increased risk of mortality. Characterising the exact nature of this association is challenging due to the paucity of appropriate severity-matched controls and the heterogeneous data. Further research to define those at greatest risk is necessary to target antimicrobial treatment.
Database :	BioMed Central

Title :	Catalpol provides protective effects against cerebral ischaemia/reperfusion injury in gerbils
Author :	Yan-ru Liu, Peng-wei Li, Jian-jun Suo, Yan Sun, Bo-ai Zhang, Hong Lu, Hong-can Zhu1 and Guo-bin Zhang
Journal :	Journal of Pharmacy and Pharmacology: Article first published online: 10 APR 2014, DOI: 10.1111/jphp.12261
Abstract :	Objectives To investigate the protective effect of catalpol on cerebral ischaemia/reperfusion (CI/R) injury in gerbils and further explore the underlying mechanism. Methods A gerbil model of CI/R was prepared by bilateral common carotid occlusion for 10 min followed by 6 h reperfusion. Catalpol (5, 10 or 20 mg/kg per day) was injected intraperitoneally for 3 days before the carotid occlusion. Stroke index was measured during the reperfusion. The contents of endogenous neuropeptides, endothelin-1 (ET-1) and calcitonin gene-related peptide in plasma were evaluated by radioimmunoassay. Superoxide dismutase (SOD) and malondialdehyde (MDA) in brain tissue homogenate were also examined. Key findings The results showed that catalpol significantly improved the stroke index compared with CI/R control group ($P < 0.05$ or $P < 0.01$). Catalpol significantly increased the activity of SOD at the doses of 10 and 20 mg/kg ($P \leqslant 0.05$), decreased the brain MDA content and the plasma level of ET-1 at the doses of 10 and 20 mg/kg ($P \leqslant 0.01$). Conclusions These data suggested that the efficacy of catalpol pretreatment on CI/R injury may be attributed to reduction of free radicals and inhibition of lipid peroxidation

	and ET-1 production.
Database :	Wiley Online Library

Title :	Financial Side Effects: Why Patients Should Be Informed of Costs
Author :	Alicia Hall
Journal :	Hastings Center Report: Article first published online: 2 APR 2014, DOI: 10.1002/hast.312
Abstract :	The U.S. health care system is ostensibly market based and therefore at least partially reliant on competition and consumer demand to regulate costs. Yet information about an essential feature of market transactions—costs—is typically obscure to patients until long after treatment. When discussing what must be disclosed for informed consent, the same list of required information is often mentioned regardless of the health care system in question, and information about costs rarely merits a place within this list. However, our assumptions about what a moral principle requires need to be responsive to the realities of the health care system in which the principle is applied. This paper explores the moral foundations of disclosure and informed consent to argue that, in a market-based system of the sort found in the United States, these same considerations support a requirement to disclose out-of-pocket costs before patients receive care. Next, I consider two objections to this view: first, that health care practitioners should focus solely on medical considerations in their encounters with patients and, second, that disclosing out-of-pocket costs would be too difficult to be mandated. I argue that medical and financial interests are inseparable within the U.S. health care system. If the difficulties in disclosing costs are deemed insurmountable, then the current system may prove unsustainable, both morally and financially, since we face the same practical impediments to implementing any meaningful consumer-driven, market-based health care reform. Finally, I explore some of the consequences of failing to disclose costs. The requirements of disclosing costs can be supported by the principle of respect for autonomy, regardless of the consequences, but in light of the consequences of the decision of whether to disclose, a concern about justice provides further support
Database :	Wiley Online Library

Title :	Hypomethylating Agent 5-Aza-2′-deoxycytidine (DAC) Ameliorates Multiple Sclerosis in Mouse Models
Author :	Katia Mangano, Paolo Fagone, Klaus Bendtzen, Pier Luigi Meroni, Quattrocchi, Santa Mammana, Michelino Di Rosa, Lucia Malaguarnera, Marinella Coco, Gaetano Magro, Roberto Di Marco and Ferdinando Nicoletti
Journal :	Journal of Cellular Physiology: Accepted Article (Accepted, unedited articles published online and citable. The final edited and typeset version of record will appear in future.) DOI: 10.1002/jcp.24641
Abstract :	Increasing evidence supports the role of epigenetics in the development of autoimmune disorders and the possibility of using epigenetic modifying drugs in the context of MS has not yet been investigated. We have explored the effect of the hypomethylating agent 5-aza-2′-deoxycytidine (DAC) in two murine models of experimental allergic encephalomyelitis (EAE). DAC treatment was associated

	with a significant amelioration of the clinical and histological hallmarks of EAE in both models. These effects were observed both in prophylactic and therapeutic regimens. The milder course of the disease was associated with a reduction in the number of spinal cord infiltrating lymphocytes and amelioration of the histopathological signs associated with EAE. In addition, increased transcript levels of anti-inflammatory cytokines and decreased mRNA expression of pro-inflammatory mediators were also observed. Finally, DAC treatment increased the percentage of circulating regulatory T cells by inducing Foxp3 expression via demethylation of a CpG island in Foxp3. J. Cell. Physiol. © 2014 Wiley Periodicals, Inc.
Database :	Wiley Online Library

Title :	Conversion of major soy isoflavone glucosides and aglycones in in vitro intestinal models
Author :	Mohammed A. Islam, Ans Punt, Bert Spenkelink, Albertinka J. Murk, F. X. Rolaf van Leeuwen and Ivonne M. C. M. Rietjens
Journal :	Molecular Nutrition & Food Research: Volume 58, Issue 3, pages 503–515, March 2014
Abstract :	This study compares conversion of three major soy isoflavone glucosides and their aglycones in a series of in vitro intestinal models. Methods and results In an in vitro human digestion model isoflavone glucosides were not deconjugated, whereas studies in a Caco-2 transwell model confirmed that deconjugation is essential to facilitate transport across the intestinal barrier. Deconjugation was shown upon incubation of the isoflavone glucosides with rat as well as human intestinal S9. In incubations with rat intestinal S9 lactase phlorizin hydrolase, glucocerebrosidase, and cytosolic broad-specific β-glucosidase all contribute significantly to deconjugation, whereas in incubations with human intestinal S9 deconjugation appeared to occur mainly through the activity of broad-specific β-glucosidase. Species differences in glucuronidation and sulfation were limited and generally within an order of magnitude with 7-O-glucuronides being the major metabolites for all three isoflavone aglycones and the glucuronidation during first pass metabolism being more efficient in rats than in humans. Comparison of the catalytic efficiencies reveals that deconjugation is less efficient than conjugation confirming that aglycones are unlikely to enter the systemic circulation. Conclusion Altogether, the data point at possible differences in the characteristics for intestinal conversion of the major soy isoflavones between rat and human, especially with respect to their deconjugation.
Database :	Wiley Online Library

Title :	Protein Nanoparticles for Intracellular Delivery of Therapeutic Enzymes
Author :	Lina Herrera Estrada, Stanley Chu and Julie A. Champion
Journal :	Journal of Pharmaceutical Sciences: Early View, Article first published online: 16 APR 2014 , DOI: 10.1002/jps.23974
Abstract :	The use of enzymes as therapeutics is very promising because of their catalytic

	activity and specificity. However, intracellular delivery of active enzymes is challenging due to their low stability and large size. The production of protein-enzyme nanoparticles was investigated with the goal of developing a protein carrier for active enzyme delivery. β-Galactosidase (β-gal), an enzyme whose deficiency is the cause of some lysosomal storage disorders, was incorporated into enhanced green fluorescent protein nanoparticles prepared via desolvation. Particle size was found to be sensitive to the type of cross-linker, cross-linking time, and the presence of imidazole. The results indicate that β-gal activity is highly retained (>70%) after particle fabrication and >85% of protein is incorporated in the particles. Protein-enzyme nanoparticles exhibited higher internalization in multiple cell lines in vitro, compared with the soluble enzyme. Importantly, β-gal retained its activity following intracellular delivery. These data demonstrate that protein nanoparticles are a biocompatible, high-efficiency alternative for intracellular delivery of active enzyme therapeutics. © 2014 Wiley Periodicals, Inc. and the American Pharmacists Association J Pharm Sci
Database :	Wiley Online Library

Title :	Mechanical Strategies to Increase Nutritional and Sensory Quality of Virgin Olive Oil by Modulating the Endogenous Enzyme Activities
Author :	M aria Lisa Clodoveo, Rim Hachicha Hbaieb, Faten Kotti, Giacomo Scarascia Mugnozza and Mohamed Gargouri
Journal :	Comprehensive Reviews in Food Science and Food Safety: Volume 13, Issue 2, pages 135–154, March 2014
Abstract :	This monograph is a critical review of the biological activities that occur during virgin olive oil (VOO) extraction process. Strategic choices of plant engineering systems and of processing technologies should be made to condition the enzymatic activities, in order to modulate the nutritional and the sensory quality of the product toward the consumer expectations. "Modulation" of the product quality properties has the main aim to predetermine the quantity and the quality of 2 classes of substances: polyphenols and volatile compounds responsible of VOO nutritional and sensory characteristics. In the 1st section, a systematic analysis of the literature has been carried out to investigate the main olive enzymatic activities involved in the complex biotransformation that occurs during the mechanical extraction process. In the 2nd section, a critical and interpretative discussion of the influence of each step of the extraction process on the polyphenols and the volatile compounds has been performed. The effect of the different mechanical devices that are part of the extraction process is analyzed and recommendations, strategies, and possible avenues for future researches are suggested.
Database :	Wiley Online Library

Title :	Modifying the Release Properties of Liposomes Toward Personalized Medicine
Author :	D avid Cipolla, Huiying Wu, Igor Gonda, Simon Eastman, Tom Redelmeier and Hak-Kim Chan
Journal :	Journal of Pharmaceutical Sciences: Early View, Article first published online: 8 APR 2014 , DOI: 10.1002/jps.23969
Abstract :	Surfactant–liposome interactions have historically been investigated as a simplified model of solubilization and breakdown of biological membranes by surfactants. In

	contrast, our goal was to utilize surfactants to modify the encapsulation and release properties of liposomes. The ability to manufacture one liposomal formulation, which could be modified by the addition of a surfactant to support a wide range of release profiles, would provide greater flexibility than manufacturing multiple batches of liposomes, each differing in composition and with its own specific release profile. A liposomal ciprofloxacin formulation was modified by the addition of various surfactants. These formulations were characterized in terms of liposome structure by cryo-TEM imaging, vesicle size by dynamic light scattering, drug encapsulation by centrifugation–filtration, and in vitro release (IVR) performance. The addition of polysorbate 20 or polysorbate 80 to liposomal ciprofloxacin, in a hypotonic environment, resulted in a concentration-dependent loss of encapsulated drug, and above 0.4% polysorbate 20, or 0.2% polysorbate 80, a modified IVR profile as well. This study demonstrates that the encapsulation and release properties of a liposomal formulation can be modified postmanufacture by the addition of judiciously chosen surfactants in combination with osmotic swelling of the liposomes and may support a personalized approach to treating patients. © 2014 Wiley Periodicals, Inc. and the American Pharmacists Association J Pharm Sci
Database :	Wiley Online Library