Abstract

**Introduction**: Potential complications associated with screw malposition may result in neurological deficits or vascular injuries. Spine surgery has significantly developed under the assistance of technological progress. The advantages of applying robotic technology in spine surgery include the possibility of improving screw accuracy, reducing complications, decreasing fluoroscopy use.

**Areas covered**: We critically evaluated the current literature on the radiographic and clinical outcomes of robot-assisted spine surgery, including accuracy, radiation exposure, operative time, and complication rates.

**Expert opinion**: Robotic-assisted spine surgery shows promising results and has the potentials for further investigations. The robot-assisted spine surgery is appeared to be more accurate in pedicle screw placement than the free-hand technique. In general, the robot-assisted technique is associated with shorter radiation exposure time but longer operative time than free-hand technique. For higher accuracy of robotic-assisted spine surgery, technical advancement and high-quality researches are needed. Artificial intelligence technology, decompression function, and higher accuracy are the directions for the development of robotic-assisted spine surgery.

**Database**

Taylor & Francis Online Journals
Abstract

Introduction: The toxicity of potent new biological therapies for cancer has limited their utility. By improving tumor specificity, antibody prodrugs can widen or even create a therapeutic window for anticancer agents that are difficult or impossible to use otherwise because of poor tolerability.

Areas covered: This review will describe the current status of the field of antibody prodrugs, focusing on ProbodyTM therapeutics, including the principles behind their design, application to a variety of different antibody-based therapies, preclinical examples of their activity and safety, and early results of Phase 1 trials.

Expert Opinion: Proof of concept for the antibody prodrug approach, which is defined as demonstration of potent antitumor activity with improved safety, has been extensively established preclinically as well as preliminarily in early clinical trials in human patients. However, experience with antibody prodrugs is limited, and important challenges remain. Principal among them are how to design the molecules to provide the most effective protection from toxicities while preserving efficacy, how to optimize clinical pharmacology, and how to determine which among the many possible clinical applications is the best use of this promising technology.
Abstract

**Aim:** This meta-analysis aimed to determine the effect of aerobic training, compared to non-aerobic interventions, on vascular and metabolic risk factors for recurrent stroke.

**Method:** This study was conducted using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines. Searches were performed in PubMed, Embase, Cochrane library and Cinahl up to May 8th 2019. Randomized clinical trials evaluating the effect of solely aerobic training on vascular and metabolic risk factors for recurrent stroke were included in a meta-analysis if relevant outcomes were reported in at least two articles.

**Results:** Our search resulted in a total of 7381 hits. Eleven outcomes out of nine articles were included in the meta-analysis. A significant positive effect of aerobic training was found on systolic blood pressure (−3.59 mmHg, 95% CI −6.14 to −1.05) and fasting glucose (−0.12 mmol/l, 95% CI −0.23 to −0.02). The effect on systolic blood pressure further improved when only high-quality studies were included (−4.95 mmHg, 95% CI −8.24 to −1.66).

**Conclusion:** Aerobic training results in a significant positive effect on systolic blood pressure and fasting glucose after stroke when compared to non-aerobic usual care or non-aerobic exercise.
Title: Impaired albumin function: a novel potential indicator for liver function damage?
Author: Lejia Sun, Huanhuan Yin, Meixi Liu, Gang Xu, Xiaoxiang Zhou, Penglei Ge, Huayu Yang & Yilei Mao
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Abstract
Albumin is the most abundant plasma protein and albumin infusion is commonly used. Conventionally, the biologic and therapeutic effects of albumin have been thought to be due to its oncotic properties. However, albumin has a variety of biologic functions, including molecular transport, anti-oxidation, anti-inflammation, endothelial stabilisation, anti-thrombotic effects, and the adjustment of capillary permeability. Despite this, the functions of albumin have not been thoroughly investigated. Recent studies have shown non-alcoholic fatty liver disease (NAFLD), viral hepatitis, cirrhosis, and liver failure to be associated with impairments in albumin function, which are associated with impairments in liver function and disease prognosis. Post-translational modifications of albumin cause structural modifications that affect protein function. Recently, the concentration of albumin associated with normal function, the 'efficient albumin concentration', has been attracting more interest. In addition, although many biologic markers, including albumin concentration, are widely used for the assessment of early liver dysfunction in patients with liver diseases, the predictive values are unsatisfactory. However, clinical evidence has suggested that albumin function may represent a novel biomarker of early impairment in liver function. In this review, we summarise the factors affecting albumin function and discuss the clinical significance of impairments in albumin function in various liver diseases.

Database
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Abstract

A key question in drugs research is why people use psychoactive substances. Diverse motives such as boredom, habit, and pain relief have served as explanations, but little is known about how adult cannabis users motivate their use in prohibitionist policy contexts, like Sweden. The aim is to explore what motives a sample of adult Swedish cannabis users refer to when they give meaning to their use. We ask: what aspects of cannabis use (e.g. drug effects, individual characteristics and social contexts) are emphasized in their accounts, and how are such aspects combined to describe motives and justify use? In this study, motives are perceived as culturally situated action, and our analysis is based on online text messages (n = 238) and interviews (n = 12). Participants emphasized either the characteristics of the use situation (motives such as party, relaxation and social function) or of him-/herself as an individual (motives such as mindfulness, identity marker and somatic function). They often mentioned medical and recreational motives in the same account, and carefully presented themselves as rational individuals. The motives reflect that the drugs discourse is increasingly medicalized, that responsibility is highly esteemed in contemporary societies, and that cannabis use is still stigmatized in Sweden.
Abstract

Acetaminophen protein adducts (adducts) are a well-established biomarker to diagnose acetaminophen toxicity. To date, the quantitative relationship between acetaminophen exposure, which drives adduct formation, and adduct exposure remains to be established. Our study characterized the adduct formation and disposition in adults using the approach of population parent-metabolite modeling. It demonstrated formation-limited pharmacokinetics (PK) for adducts in healthy subjects. This finding expands the existing knowledge on adduct PK that showed an apparent long elimination half-life. We then allometrically scaled the adduct PK model to children, simulated the adduct profiles, and compared these simulated profiles with those observed in an independent cohort of children. The scaled model significantly overpredicted the adduct concentrations in children early on in treatment and underpredicted concentrations following repeated acetaminophen doses. These results suggest that children demonstrate different adduct PK behavior from that of adults, most likely because of increased reactive metabolite detoxification in children. In summary, we described the first PK model linking acetaminophen and acetaminophen protein adduct concentrations, which provides a semimechanistic understanding of varying profiles of adduct exposure in adults and children.

Database

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Abstract
This work aims to investigate the renal effect of hydrogen sulfide (H2S), in the experimentally induced diabetic nephropathy, besides the role of activation of $\text{K}_{\text{ATP}}$ channel in that effect. Thirty-two adult male albino rats randomly divided into four groups: Control, streptozotocin-induced diabetic (diabetic nephropathy [DN]), DN+NaHS (the H2S inducer), and DN+NaHS+Glibenclamide (a selective $\text{K}_{\text{ATP}}$ channel blocker) groups. Results showed that kidney functions in the diabetic group improved by NaHS proved by the significant decrease in the measured renal injury markers when compared with the diabetic group with an obvious role of inflammation and oxidative stress. However, the improved kidney functions produced by NaHS was reduced by the combination with Glibenclamide. Glibenclamide combination led also to a significant increase in renal total antioxidant capacity, in addition to a significant decrease in renal total nitric oxide (NO) level. Accordingly, the results from the present work revealed that the renoprotective effects of H2S in the case of DN through its effects on renal tissue antioxidants and NO can be partially dependent on activation of $\text{K}_{\text{ATP}}$ channels, while its effect on renal tissue proinflammatory cytokines is independent of it.
Title: ‘Sharing may not be caring’ – Prescription medication sharing among adults in Saudi Arabia

Author: Faten Alhomoud

Journal: International Journal of Pharmacy Practice

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Doi: https://doi.org/10.1111/ijpp.12592

Abstract

Objectives: The aim of the current study was to describe prescription medication sharing behaviours (i.e. borrowing and lending) among adults living in Saudi Arabia.

Methods: This cross-sectional survey was conducted in Saudi Arabia during December 2018. The eligibility criteria were an ability to communicate in Arabic or English and aged ≥18 years. An online survey was distributed to a convenience sample, supplemented by snowballing, by email and social media via an Internet link leading to a web-based survey platform in QuestionPro to assess their medication sharing behaviours. Bivariate and multivariate analyses were used to assess the associations.

Key findings: A total of 667 completed the questionnaire. The prevalence of borrowing and lending prescription medication was found to be 14% and 16% in 2018 (past year), respectively. Twenty per cent of participants revealed that they had given a medication prescribed for one child to another child in their care, and 75% reported having leftover prescription medicine at home. The majority (90%) had borrowed or lent on one to three occasions. A wide range of medications were borrowed and lent mainly between immediate family members. Different reasons have been identified for medicine borrowing or lending behaviours.

Conclusions: Borrowing and lending prescription medications are a common practice in the Saudi population. Further research is warranted into the development of successful approaches or interventions to reduce medication sharing behaviour.

Database

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Abstract

Objectives: Our main aim was to identify the factors that may influence consumers’ acceptance of mobile phone caller tunes to increase awareness of consumer reporting of suspected adverse drug reactions (ADRs). Mobile phone caller tunes — the songs or messages callers hear — are popular in Africa and Asia but have not been used to aid reporting of adverse drug reactions (ADRs). We also aimed to evaluate the psychometric properties of a survey instrument adapted for caller tunes and ADRs.

Methods: A cross-sectional survey based on the technology acceptance model (TAM) was conducted among 486 non-ADR-themed caller tune users and 470 mobile phone users with no caller tunes in Accra, Ghana. Participants were purposively recruited from voluntary blood donation sites. After testing the validity and reliability of TAM constructs, a structural equation modelling approach was used to evaluate the factors that could influence the acceptance of caller tunes for increasing awareness of consumer reporting of ADRs.

Key findings: Perceived usefulness and perceived ease of use had significant positive effects on consumers’ acceptance of caller tunes for increasing awareness of consumer reporting of ADRs. However, whereas free of cost had significant positive effects on the acceptance of caller tunes among those with non-ADR-themed caller tunes ($\beta = 0.15, P = 0.006$), it was not so for those lacking caller tunes ($\beta = 0.05, P = 0.229$). The survey instrument met acceptable validity and reliability criteria.

Conclusions: Our findings show that consumers would generally accept caller tunes on ADRs — if created — to aid consumer reporting of suspected ADRs, but there are research and practice considerations.
Title: Multisystemic Imaging Findings in Chinese Patients With Erdheim-Chester Disease
Author: Fengdan Wang, Xinxin Cao, Na Niu, Yan Zhang, Yining Wang, Feng Feng, Zhengyu Jin
Journal: American Journal of Roentgenology
Doi: 10.2214/AJR.19.21523

Abstract

OBJECTIVE. Radiology is essential for diagnosing and managing Erdheim-Chester disease (ECD), a rare multisystemic non-Langerhans cell histiocytic neoplasm. This study aimed to systemically investigate imaging characteristics of patients with ECD.

MATERIALS AND METHODS. Radiographic, CT, and MR images of 28 Chinese patients (14 male, 14 female; 5–65 years old) diagnosed with ECD on histopathology at our medical center between January 2014 and January 2019 were retrospectively analyzed. Two radiologists analyzed the images in consensus and recorded the imaging manifestations qualitatively.

RESULTS. Seventeen of the 23 patients (73.9%) who underwent CNS evaluation had findings positive for ECD including supratentorial and infratentorial regions; infiltration of the corpus callosum, choroid plexus, pineal body, and walls of cerebral arteries; and brain nodules mimicking metastases. In the facial and orbital regions, postorbital masses (34.8%) and masses in the nasal sinuses and mastoid processes were noted. Moreover, bone involvement was found in 27 (96.4%) patients, with lower extremities most commonly affected (85.7%); pathologic fracture caused by bone involvement was also observed. On chest CT, pulmonary parenchyma, mesenchyme, pleura, and mediastinum were seen to be infiltrated by ECD (57.1%). Half (50.0%) of the 28 patients had cardiovascular involvement with infiltration of the aorta and its branches, coronary arteries, or branches of the superior mesenteric artery resulting in stenosis and ischemic symptoms. In addition to retroperitoneal involvement in 13 (46.4%) patients, a presacral mass wrapping bilateral pelvic ureters and thickening of the mesentery, peritoneum, and omentum were also detected.

CONCLUSION. Patients with ECD should be evaluated systemically, because involvement of vital organs could be lethal.

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