Hot Articles

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Health Science
Longer time spent in bed attempting to sleep is associated with rapid renal function decline: the Dongfeng–Tongji cohort study

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Annals of Medicine

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Abstract

Introduction: Prospective evidence on the relation between time in bed and renal dysfunction remains limited. We aimed to investigate the association of time spent in bed attempting to sleep (TSBS) with renal function decline in a middle-aged and elderly Chinese population.

Methods: About 16,733 eligible participants with a mean age of 62.3 years at baseline were included. Rapid renal function decline was defined as (baseline eGFR – revisit eGFR)/years of follow-up ≥5 mL/min per 1.73 m2/year. A total of 1738 study participants experienced rapid renal function decline after a median 4.6-year follow-up. Logistic regression models were used for multivariate analyses.

Results: The adjusted odds ratio (OR) of rapid renal function decline was 1.18 (95% CI: 1.02, 1.37) for TSBS ≥9 h/night compared with TSBS 7 to <8 h/night. This association remained significant (OR = 1.19, 95% CI: 1.03, 1.38) after further adjustment for sleep quality, midday napping and usage of sleeping pills. Particularly, the association appeared to be prominent in individuals with diabetes.

Conclusions: Longer TSBS (≥9 h) was independently associated with an increased risk of rapid renal function decline. Our findings emphasized the importance to have optimal TSBS.

Database

Taylor & Francis Online Journal
Abstract

**Introduction**: The anti-CD20 chimeric monoclonal antibody rituximab has revolutionized the treatment of B-cell malignancies, significantly improving patient clinical outcome. Recently, some single-group studies have suggested that adding rituximab to chemotherapy can improve the outcome of CD20-positive B-cell acute lymphoblastic leukemia (ALL) patients.

**Areas covered**: An overview of the current insights of rituximab in adult ALL patients is presented here. In particular, we focused on results of multicenter randomized phase III trial (GRAALL-2005- Group for Research on Adult Acute Lymphoblastic Leukemia) that evaluated the benefit of associating rituximab to chemotherapy in Ph-negative, B-lineage ALL expressing the CD20 antigen.

**Expert opinion**: Data from clinical trials confirm that rituximab enhances the efficacy of chemotherapy without additive toxicity in ALL. However, results of GRAAL 2005 study represent only a modest incremental improvement in the treatment of ALL. Other promising compounds as single agent or in combination with chemotherapy are currently in different stages of clinical development. The GRAALL 2005 study sets the stage for other prospective studies which will further elucidate the role of monoclonal antibodies in the management of ALL.

**Database**

Taylor & Francis Online Journal
**Title:** Pregnancy outcomes of women with spina bifida

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**Journal:** Disability and Rehabilitation

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**Abstract**

**Purpose:** To assess the pregnancy outcomes of women with spina bifida.

**Materials and methods:** We analyzed a population-based cohort of 397 pregnant women with spina bifida and 1,083,211 without spina bifida who delivered infants in hospitals in Quebec, Canada, 1989-2013. Outcomes included maternal and infant morbidity and mortality at delivery. We used log-binomial regression models to estimate prevalence ratios (PR) and 95% confidence intervals (CI) for the association of maternal spina bifida with pregnancy outcomes, accounting for maternal characteristics.

**Results:** Women with spina bifida had a higher prevalence of several adverse outcomes compared with women who had no birth defects. Maternal risks were highest for intensive care unit admission during the delivery hospitalization (PR 3.41, CI 95% 1.56–7.43) and respiratory morbidity (PR 9.46, CI 95% 3.31–26.99). Infant risks were greatest for intracranial hemorrhage (PR 6.85, CI 95% 2.23–21.08), birth hypoxia (PR 1.64, CI 95% 1.21–2.22), and hospital length of stay ≥14 days (PR 2.56, CI 95% 1.58–4.15). After adjustment for confounders, maternal spina bifida was associated with risk of oral clefts and abdominal wall defects in infants.

**Conclusions:** Women with spina bifida have an increased risk of severe maternal and infant complications at delivery, compared with no spina bifida.

**Database**

Taylor & Francis Online Journal
Abstract

Cell-penetrating peptide (CPP) is used for the delivery of biomacromolecules across the cell membrane and is limited in cancer therapy due to the lack of cell selectivity. Epidermal growth factor receptor (EGFR) has been widely used in clinical targeted therapy for tumors. Here we reported a novel tumor targeting cell-penetrating peptide (TCPP), EHB (ELBD-C6H) with 20-fold and 3000-fold greater transmembrane ability and tumor cell selectivity than our previously reported S3-HBD and classic CPP TAT, respectively. In this new TCPP, a specific alpha helix structure was inserted into a repeated amino acid (AA) sequence formed by tandem multiple selected key AA residues of vaccinia growth factor (VGF), and this sequence was then fused to a tailored heparin binding domain sequence (C6H) derived from heparin-binding epidermal growth factor-like growth factor to intensify its targeting delivery ability. EHB could carry anticancer proteins such as MAP30 (Momordica Antiviral Protein 30 kDa) into EGFR-overexpressing cancer cell and inhibit cell growth, but it had a greatly reduced interaction with normal cells. These results indicated that EHB, as a novel efficient TCPP for the selective delivery of drug molecules into cancer cells, would help to improve the efficacy and safety of anti-tumor drugs.

Database

Taylor & Francis Online Journal
Abstract

Introduction: Pharmacologic treatment of Myasthenia Gravis presents challenges due to poor tolerability in some patients. Conventional ptosis crutches have limitations such as interference with blinking which causes ocular surface drying, and frequent irritation of the eyes. To address this problem, a modular and adjustable ptosis crutch for elevating the upper eyelid in Myasthenia Gravis patients has been proposed as a non-surgical and low-cost solution.

Areas covered: This paper reviews the literature on the challenges in the treatment of Myasthenia Gravis globally and focuses on a modular and adjustable ptosis crutch that has been developed by the Medical Device Laboratory at the University of Cape Town.

Expert commentary: The new medical device has potential as a simple, effective and unobtrusive solution to elevate the drooping upper eyelid(s) above the visual axis without the need for medication and surgery. Access to the technology is provided through an open source platform which makes it available globally. Open access provides opportunities for further open innovation to address the current limitations of the device, ultimately for the benefit not only of people suffering from Myasthenia Gravis but also of those with ptosis from other aetiologies.

Database

Taylor & Francis Online Journal
Abstract

**Introduction:** Epithelial ovarian cancer (EOC) is the most common cause of death among gynecological malignancies. Despite surgical and pharmacological efforts to improve patients’ outcome, persistent and recurrent EOC remains an un-eradicable disease. Chimeric associated antigens (CAR) T cells are T lymphocytes expressing an engineered T cell receptor that activate the immune response after an MHC unrestricted recognition of specific antigens, including tumor associated antigens (TAAs).

CART cells have been shown to be effective in the treatment of hematologic tumors even if frequently associated with potentially severe toxicity and high production costs.

**Areas covered:** In this review, we will focus on preclinical and clinical studies evaluating CART activity in EOC in order to identify possible difficulties and advantages of their use in this particular setting.

**Expert Opinion:** The pattern of diffusion within the peritoneal cavity, the tumor microenvironment and the high rate of TAAs make EOC a particularly interesting model for CART cells use. Data from preclinical studies indicate a potential activity of CARTs in EOC, but robust clinical data are still awaited. Further studies are needed to determine the best methods of administration and the most effective CAR type to treat EOC patients.

**Database**

Taylor & Francis Online Journal
Title: Bibliometric analysis of literature in pharmacy education: 2000–2016

Author: Waleed M. Sweileh, Samah W. Al-Jabi, Sa’ed H. Zyoud and Ansam F. Sawalha

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Abstract

Objectives

Improving pharmacy education requires continuous research to optimize education and consequently pharmacy practice. The goal of this study is to assess national and international contributions to pharmacy education research and present results in comparative bibliometric format.

Methods

Search strategy based on journal name and specific keywords pertaining to pharmacy education were used to retrieve the worldwide literature in pharmacy education using Scopus database during the period from 2000 to 2016. Bibliometric indicators were presented as top 10 list of countries, institutions and authors. VOSviewer was used to visualize international collaboration, while ArcMap10.1 software was used for geographical mapping of publications.

Key findings

A total of 5363 documents, mostly as research articles (4027; 75.1%), were retrieved. A noticeable increase in publications was seen from 2007 to 2011. The USA contributed to more than half (53.6%) of worldwide research output. Saudi Arabia had the highest percentage of international authors representing international collaboration. There was an increase in multi-authored publications with time. The American Journal of Pharmaceutical Education (AJPE) ranked first (2822, 52.6%) while the American Association of Colleges of Pharmacy (AACP) had the largest research output with 141 (2.6%) publications. The vast majority of highly cited articles were published in AJPE, and highly cited topics included the use of social media in pharmacy education and the multi-professional learning experience.

Conclusion

Pharmacy education research is gaining momentum and is addressing various fields in education. Research in pharmacy education should be encouraged, particularly in developing countries, where education and practice are still lagging behind.

Database

Wiley Online Library
Abstract

Mycophenolic acid (MPA) is an approved immunosuppressive agent widely prescribed to prevent rejection after kidney transplantation. Wide between-subject variability (BSV) in MPA exposure exists which in part may be due to variability in enterohepatic recirculation (EHC). Several modeling strategies were developed to evaluate EHC as part of MPA pharmacokinetics, however mechanistic representation of EHC is limited. These models have not provided a satisfactory representation of the physiology of EHC in their modeling assumptions. The aim of this study was i) to develop an integrated model of MPA (total and unbound) and its metabolites (MPAG and acyl-MPAG) in kidney recipients, where this model provides a more physiological representation of EHC process, and ii) to evaluate the effect of donor and recipient clinical covariates and genotypes on MPA disposition. A five-compartment model with first-order input into an unbound MPA compartment connected to the MPAG, acyl-MPAG, and gallbladder compartment best fit the data. To represent the EHC process, the model was built based on the physiological concepts related to the hepatobiliary system and the gallbladder filling and emptying processes. The effect of cyclosporine versus tacrolimus on clearance of unbound MPA was included in the base model. Covariate analysis showed creatinine clearance to be significant on oral clearance of unbound MPA. The hepatic nuclear factor 1 alpha (HNF1A) genetic single nucleotide polymorphism (SNP) (rs2393791) in the recipient significantly affected the fraction of enterohepatically-circulated drug. Oral clearance of MPAG was affected by recipient IMPDH1 SNP (rs2288553), diabetes at the time of transplant, and donor sex.
Title: Modeling HIV-HCV coinfection epidemiology in the direct-acting antiviral era: the road to elimination

Victor Virlogeux, Fabien Zoulim, Pascal Pugliese, Isabelle Poizot-Martin, Marc-Antoine Valantin, Lise Cuzin, Jacques Reynes, Eric Billaud, Thomas Huleux, Firouze Bani-Sadr, David Rey, Anne Frésard, Christine Jacomet, Claudine Duvivier, Antoine Cheret, Laurent Rustache-Mathieu, Bruno Hoen, André Cabié, Laurent Cotte and the Dat’AIDS Study Group

Author: BMC Medicine

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Abstract

Background

HCV treatment uptake has drastically increased in HIV-HCV coinfected patients in France since direct-acting antiviral (DAA) treatment approval, resulting in HCV cure in 63% of all HIV-HCV patients by the end of 2015. We investigated the impact of scaling-up DAA on HCV prevalence in the whole HIV population and in various risk groups over the next 10 years in France using a transmission dynamic compartmental model.

Methods

The model was based on epidemiological data from the French Dat’AIDS cohort. Eight risk groups were considered, including high-risk (HR) and low-risk (LR) men who have sex with men (MSM) and male/female heterosexuals, intravenous drug users, or patients from other risk groups. The model was calibrated on prevalence and incidence data observed in the cohort between 2012 and 2015.

Results

On January 1, 2016, 156,811 patients were registered as infected with HIV in France (24,900 undiagnosed patients) of whom 7938 (5.1%) had detectable HCV-RNA (722 undiagnosed patients). Assuming a treatment coverage (TC) rate of 30%/year (i.e., the observed rate in 2015), model projections showed that HCV prevalence among HIV patients is expected to drop to 0.81% in 2026. Sub-analyses showed a similar decrease of HIV-HCV prevalence in most risk groups, including LR MSM. Due to higher infection and reinfection rates, predicted prevalence in HR MSM remained stable from 6.96% in 2016 to 6.34% in 2026. Increasing annual TC rate in HR MSM to 50/70% would decrease HCV prevalence in this group to 2.35/1.25% in 2026. With a 30% TC rate, undiagnosed patients would account for 34% of HCV infections in 2026.

Conclusions

Our model suggests that DAA could nearly eliminate coinfection in France within 10 years for most risk groups, including LR MSM. Elimination in HR MSM will require increased TC.
Validation of the 2015 American Thyroid Association Management Guidelines for Thyroid Nodules With Benign Cytologic Findings in the Era of the Bethesda System

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American Journal of Roentgenology

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Abstract

OBJECTIVE. The purpose of this study is to investigate follow-up strategies for cytologically benign thyroid nodules according to size and ultrasound (US) pattern according to the 2015 American Thyroid Association (ATA) guidelines in the era of the Bethesda system.

MATERIALS AND METHODS. This retrospective study included 1208 patients with 1230 nodules that were cytologically benign at initial fine-needle aspiration performed from June 2012 to December 2014. False-negative rates (FNRs) were calculated by considering nodule size and US pattern according to the 2015 ATA guidelines and were compared between nodules with the high-suspicion US pattern and nodules with the high- or intermediate-suspicion US patterns according to size.

RESULTS. Twenty-five of the 1230 nodules (2.0%) were malignant. The FNRs were 5.1% (8/158) for nodules with the high-suspicion US pattern and 1.6% (17/1072) for nodules with other US patterns. With regard to nodule size, the FNRs were 3.2% (9/277) for nodules 3 cm or larger and 5.2% (6/115) for nodules 4 cm or larger. The FNRs of nodules with the high-suspicion pattern were not significantly higher than those of nodules with the high- or intermediate-suspicion patterns among nodules 2 cm or larger (2.5% vs 1.9%; p = 0.208), 3 cm or larger (3.4% vs 2.9%; p = 0.498), and 4 cm or larger (5.4% vs 3.8%; p = 0.353).

CONCLUSION. Thyroid nodules with initial benign cytologic findings had a low malignancy rate in the era of the Bethesda system, regardless of US pattern and size. Therefore, any immediate diagnostic intervention may be discouraged in cytologically benign nodules.

Database

American Roentgen Ray Society