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Clinical
Pharmacy

A Review On The Side Effects Of Memantine

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A Review on The Side Effects of Memantine

Introduction

Memantine (MEM) is a non-competetive antagonist of NMDA receptors and is the first licensed drug to be used for treatment of severe Alzeimer's disease in UK and has been used for treatment of dementia for over ten years in Germany. It's believed that memantine's mechanism of action is the blockade of current flow through NMDA (N-methyl D-asparate) receptors' channels. MEM has been used as a neuroprotective agent for the treatment of dementias: AD, vascular dementia and HIV-1 demenia.

Methods

In this review we gathered data from more than 10 studies including 5 case report, 2 reviews, 2 case control and 1 experimental studies.

Results

A variety of side effects can be associated with Mem. In this report, we reviewed the possible side effects of MEM from confusion, headache, dizziness, hallucinatons and tiredness to more severe ones like syncope, cardiac failure, vertigo, transient ischemic attacks, ataxia, hypokinesia and anaemia. Other reported dose-related side effects include nausea, dizziness, restlessness and a feeling of pressure within the head. Also changes in sexual activity, such as impaired arousal, were reported. However The most common side effect is somnolence.

Conclusion

Clinical use of MEM in rat suggests that, if used in prosperous doses (with an increasing dose titration regimen over 2–4 weeks, 5–30 mg), it produces minimal or no side-effects; nevertheless, the large doses taken acutely may result in drowsiness, dizziness or fainting.

Keywords:

Memantine, Antidementia, NMDA receptors, Somnolence, Alzeimer's disease, review

Formulation, phytochemical analysis and evaluation of the efficacy of topical preparation from *Dorema ammoniacum* D. Don oleo-gum-resin in patients with chloasma: A randomized, double-blind, placebo-controlled trial

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Introduction

Melasma or chloasma is a common hyperpigmentary skin disorder. It causes brown to gray-brown patches, usually on the face, which remains difficult to treat, and can effect on community relations, daily routines, mental health and other aspects of person's life. *Dorema ammoniacum* D. Don, which flourishes in springtime and early summer, is a plant from Apiaceae family. The *Dorema ammoniacum* D. oleo-gum-resin is used as expectorant, stimulant, vasodilator, and antimicrobial agent. The aim of present study is to evaluate the efficacy of topical preparation from *Dorema ammoniacum* D. in patients with melasma.

Methods

Preliminary phytochemical analysis was performed on plant extract. The available formulations were extracted from Iranian medicine sources and the topical form of the final product was selected. Several topical formulations were performed and the optimum formula regarding viscosity, PH, microbial control, rabbit skin irritation test and physical controls was selected for the trial. Cases of melasma diagnosed clinically (based upon history and the clinical findings), aged 14 to 66 years, were selected. In this double-blinded, randomized clinical trial, 60 patients were divided into two groups by simple random sampling method. The cases in-group A, were treated by *Dorema ammoniacum* D. topical cream 10% (twice daily). In-group B, cases received placebo topical cream (twice daily) for a month. They were monitored on days 0, 15, and 30 of the study. The efficacy was assessed based on melasma area and severity score (MASI), as well as melasma quality of life score (MelasQOL) and any adverse effects noted.

Results

The preliminary identification test confirms the nature of the substance used in the study. A total of 42 compounds were identified in the essential oil of the *Dorema ammoniacum* D., representing 60.5% of the total essential oil composition. Of these Cuparene compounds, the highest amount was obtained with 31.14%. After a month of melasma treatment, there was improvement in the MASI score in the treatment group as compared to the placebo group. There was a significant difference between treatment and placebo groups in terms of mean MASI score ($p < 0.05$). The MelasQOL score also improved in *Dorema ammoniacum* D. topical cream as a treatment for melasma versus placebo. Only mild itching was reported in a patient from group A, while there was no report of adverse effects from the placebo group.

Conclusion

Topical formulation of *Dorema ammoniacum* D. approved to be an effective and safe preparation which can remarkably decrease the severity of melasma. Further clinical examinations with larger sample size and longer duration of trial is suggested to confirm the claims of this traditional remedy in the treatment of chloasma.

Keywords

chloasma, topical cream, herb, traditional medicine, melasma, MASI, plant

Efficacy and safety of ibrutinib in patients with mantel cell lymphoma: a Systematic Review

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BACKGROUND AND OBJECTIVE: Mantel cell lymphoma is one of the types of non-Hodgkin's type B cell cancers that is rare but invasive. Ibrutinib, a type of Bruton kinase inhibitor, was approved in 2013 to treat the disease. Our systematic review examines the results of clinical trials that have studied the efficacy and side effects of ibrutinib in mantle cell patients.

MATERIALS AND METHODS: Search Method: Databases of PubMed, Cochrane CENTRAL, Embase, Web of Knowledge and Clinical Trials, Searched for keywords such as "ibrutinib" and "mantle cell lymphoma" that linked the drug to the disease without a time-limiting filter.

FINDINS: Out of 1558 articles found, after the removal process of duplicate and unrelated articles, 18 articles remained and their information- Such as Demographic data, efficacy data, and adverse event profiles in patients were extracted. 9 phase I studies and 9 phase II / III studies were reviewed. There was only one randomized clinical trial study in this study. Of these studies, only one phase II study examined the effects of ibrutinib on newly diagnosed patients, and the remaining studies examined drug effects on patients with recurrent / refractory disease. Except for one Phase I study and three Phase II / III studies, you have trained others to study ibrutinib in consultation with other medications

CONCLUTION: Common side effects of Ibrutinib included diarrhea, exhaustion, and nausea, and dangerous complications included thrombocytopenia, neutropenia, and anemia. The prevalence and severity of these or other adverse events based on the drug added to ibrutinib varied widely between studies. Based on comparisons of effectiveness indicators such as PFS (Progression-free survival) and ORR (Overall Response Rate) and as well as complication profiles in patients, the combination of ibrutinib and rituximib was one of the most effective and least effective drug combinations for recurrent / refractory mantle cell lymphoma (with ORR: 88% vs. ORR: 68% in ibrutinib alone). This combination also worked well in the treatment of newly diagnosed patients (ORR: 100%). Other drug combinations reviewed in the review need further study.

***KEYWORDS*:** Bruton kinase inhibitor,ibrutinib, mantel cell lymphoma

A Brief Review of the Cold Atmospheric Plasma Application in Medical Sciences

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Introduction

This review is to introduce the enthusiasts of Cold Atmospheric Plasma(CAP) to the application of plasma in medical sciences. In physical sciences, plasmas are described as the fourth state of matter in addition to solids, liquids and gases. Current research mainly focuses on the non-thermal plasmas: applications below the threshold of thermal damage (slightly above room temperature) aim at inducing a specific response or chemical modification by generating active species that are either produced in the plasma or in the tissue brought into contact with plasma. Plasma applications hold big potential,for example, in wound healing, such as efficient disinfection or sterilization, therapy of various skin infections or tissue regeneration.

Medical applications of plasma: 'plasmamedicine'

Blood coagulation

The authors show that plasmas can trigger natural blood coagulation processes. They performed in vitro experiments in which they exposed blood samples to low-temperature plasmas generated by the FE-DBD device. The rates of blood coagulation in plasma-treated samples were 15 times higher than in non-treated control samples.

Wound healing

In study of 65 diabetic patients with purulent and necrotic lesions of the lower extremities that all phases of the wound healing process were shortened under NO therapy with a system called 'Plazon'. Plasmas may help with the treatment and again it is unlikely that plasmas will 'cure' the underlying disease. But by eliminating bacterial and fungal infections, plasmas may well reduce the suffering, support the treatment and speed up the recovery.

Skin diseases

Most dermatological problems are associated with bacterial or fungal (side) effects. There are over a thousand skin diseases ranging from acneiform eruptions, dermatitis, melanocytic (cancerous), pruritic to vascular related afflictions. Whilst plasmas are unlikely (based on our current technology) to cure such diseases, they can help to reduce complications through bacteria and fungi. In future, with 'designer' plasmas becoming a 'molecular drug delivery agent', even treatments of some of the diseases themselves may become possible.

Cancer treatment

Tumor cell nuclei rapidly shrink, and tumor blood flow stops. Melanomas are observed to shrink by 90% within two weeks following treatment. These pioneering results clearly indicate that CAP have good potential in treating cancer.

Conclusion

Plasma Health Care has developed in the last few years into an innovative and growing field of research and development. Applications of plasmas will expand, in dermatology, and more and more possible indications will arise in the context of multi-disciplinary research. Feedback, collaboration and suggestions from physicists, biologists, chemists, engineers and physicians will facilitate further medical research.

In any case, non-thermal plasmas appear to be one of the most promising and expanding fields of research in medicine.

Keywords

Plasma, Plasma Medicine, Plazon, Cancer treatment, NO therapy, Healing

The Effect of Pomegranate Peel Gel on Orgasm and Sexual Satisfaction of Women in ReproduRandomized, Controlled Clinical Trial

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Introduction

Orgasm and sexual satisfaction are part of women's sexual function. Among the physiological factors affecting orgasm, followed by sexual satisfaction, is the strength of the pelvic floor muscle. Atony and laxity of these muscles could cause an interruption to the rise of women to an orgasm and eventually reduce sexual satisfaction. Pomegranate peel is considered as astringent material in traditional medicine. In studies of plants with similar pomegranate peel compounds vaginal tightness properties have been observed. The aim of this study was to determine the effect of pomegranate peel gel on orgasm and sexual satisfaction of women of reproductive age.

Methods

This study was a randomized, two-groups, tri-blind clinical trial on 110 women aged 18-45 years old was referring Imam Reza Hospital in Mashhad, Iran in 2019-2018. The study Participants were randomly assigned into two groups of pomegranate gel and placebo for 8 weeks. The instrument of this study was the Demographic Questionnaire and Orgasm and Sexual Satisfaction Questionnaire (FSFI). Sexual function of women was assessed in two groups of orgasm and sexual satisfaction before, 4 and 8 weeks after intervention in two groups. Finally, the data were analyzed Stata software using Independent T-test, Mann-Whitney, T-paired, Wilcoxon and Friedman and P value less than 0.05 was considered significant.

Result

The results showed that at the beginning of the study, there was no statistically significant difference in female sexual function in the mean score of orgasm (P = 0.748) and sexual satisfaction (P = 0.9222) in the two groups of intervention and placebo. But after 4 and 8 weeks of intervention, the mean scores of this domains were significantly higher than the placebo group (P <0.001).

Conclusion

Using pomegranate peel gel can effectively improve female sexual function in orgasm and increase the sexual satisfaction of women.

Inappropriate disk selection for isolated pathogens: a call to action

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Introduction: The results of antibiotic susceptibility pattern help physician to select the appropriate antibiotic for pathogens. The aim of our study was to evaluate the appropriateness of disk selection for isolated bacterial.

Methods: From June 2017 to March 2018 all specimens received at the laboratory of the heart center were studied, retrospectively. Disk diffusion method in the Muller Hinton Agar medium were used for determination of antimicrobial susceptibility pattern of isolates. The antibiogram result for each isolate was assessed based on The Clinical & Laboratory Standards Institute disk selection guide.

Results: The mean age of our recruited patients was 63.73±16.24 years and the most of them were female (84/153, 54.9%). Of 153 samples, 100 (65.4%) were from urine, 42 (27.5%) from tracheal and the others (7.2%) from the blood. The most of the specimens (74/153, 48.4%) were received from coronary care units. Escherichia coli was the most frequent isolates (65/153, 42.48%) followed by Klebsiella spp. (32/153, 20.92%). The inappropriate antimicrobial disks selection was occurring among in 34.73% and 68.09% of isolated Escherichia coli and Klebsiella spp., respectively. The resistance rates of two later pathogens to third generation cephalosporins, aminoglycoside and carbapenem were 42.19%, 26.23%, 16.67% for Escherichia coli and 63.64%, 31.03%, 50% for Klebsiella spp., respectively.

Conclusion: Wrong disk selection was common in the present study. Establishment and implementation of the Clinical & Laboratory Standards Institute guideline could be helpful for appropriate disk selection.

Key word: antibiogram, appropriateness, disk diffusion, CLSI

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Evaluation of the Synergistic Effect of Colistin with other Antibiotics Against Multidrug-Resistant (MDR) *Acinetobacter baumannii* Isolates

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Introduction

WHO has identified antibiotic resistance as one of the three major threats to human health (1). *Acinetobacter baumannii*, a gram-negative pathogen, is one of six important and dangerous microorganisms worldwide and is often associated with nosocomial infections, such as bacteraemia, pneumonia, meningitis, and urinary tract infections (2). Deaths from *Acinetobacter* infections have been reported from 40 to 70% for VAP, 25 to 30% for meningitis, and 34 to 49% for bacteraemia (3). However, colistin, tigecycline, and ampicillin/sulbactam are the only high-impact antibiotics and the last line of treatment for multidrug-resistant *Acinetobacter baumannii* (MDR) (4). So, the aim of the present study, was to evaluate the best potential antibiotic combinations for the treatment of strain infections by investigating the synergistic effect of synergist colistin with several antibiotics.

Methods

Acinetobacter baumannii strains were isolated from biological specimens of patients admitted to Al-Zahra Hospital in Isfahan related nosocomial infections. Microdilution method was used for determination of minimum inhibitory concentration (MIC) of every antibiotic. Finally, the Checkerboard method was used to determine the synergistic effects between colistin and meropenem, azithromycin, ciprofloxacin, levofloxacin, ceftazidime, cefepime, amikacin, co-trimoxazole, doxycycline, ceftriaxone, and gentamicin. FIC index was used to judge the combination effects of antibiotics.

Results

According to the results of about 20 investigated biological samples, 44 % of patients showed synergistic effects between colistin and azithromycin as well as doxycycline. Furthermore, the percent of synergistic effects between colistin and ciprofloxacin and levofloxacin were determined as 31.

Conclusion

The results of this study showed that the combination usage of colistin and doxycycline, azythromycin, and fluoroquinolones can help to the treatment of infections induced by multidrug-resistant *Acinetobacter baumannii.* These findings can be used in other hospitals that are concerned about treating these infections.

Keywords

Acinetobacter baumannii, Colistin, Multidrug-resistant, Synergistic effect

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Drug Utilization and Polypharmacy among Adults: a population-based prospective cohort study in Shahrekord

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Introduction

By aging the need for health care, including the medications utilization rises. Which means increasing the prevalence of potentially inappropriate medication use that is associated with an increased risk for adverse drug events, morbidity, and utilization of health care resources.
The aim of this study is to evaluate the medication use patterns and the prevalence of polypharmacy and its components among adults aged 35 through 70 year old, who were imported in Shahrekord cohort study (SCS).

Methods
In this cross-sectional study, data was analyzed from the SCS, a population-based prospective, consisting of 10000 people aged from 35-70 years, which started in November 2015. Information on medication use was based on face-to-face interviews and polypharmacy was defined as the use of 5 or more drugs concurrently. Other measurements included were age, sex and comorbidity.

Results
Between 10000 individuals from age 35 to 70 in SCS, 6160 individuals had no medication. The total number of 10365 medications had been taken in 3840 people, which means 2.72 (±2.07) drugs per person. Though the 37.4% of those who received medications had one drug, 17.2% were exposed to polypharmacy and the highest amount of medications was 17. Aspirin (8.6%), losartan (7.9%), levothyroxine (7.7%) and atorvastatin (6.7%) were the most prevalent drugs in the population. There was a higher prevalence of polypharmacy among elderly and also female sex.

Conclusion
This study highlights the increasing of polypharmacy exposure in cardiovascular disease, older population and women. Further studies are needed to determine association between socioeconomic status and drug use.

Keywords: Drug utilization, Polypharmacy, Adults, Cross-sectional, Cohort study, Iran

The Relationship between Vitamin D Deficiency and Vitiligo: a Systematic Review

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Introduction

Vitiligo is a chronic, autoimmune, depigmenting skin disorder characterized by the progressive loss of melanocytes from the epidermis. Vitamin D is an important hormone that is synthesized in the skin by sunlight. Vitamin D deficiency is linked to autoimmune diseases. The purpose of this study was to examine whether there is a relationship between low levels of vitamin D and vitiligo.

Methods

In current systematic review national and international electronic databases, including the Cochrane Library, Pubmed, Science Direct, Scopuse, SID and Magiran were searched from inception to August 2019 for entries. The keywords used in the searches included: ″Vitamin D or 25(OH)D3 or 25-hydroxy vitamin D″ and ″serum level and vitamin D level″ and their combinations in title/abstract. No language restrictions were applied. Two review authors independently scanned the title and abstract of each article and 30 studies were retrieved. Reference lists of collected articles were also reviewed to find additional studies

Results

Among the 30 studies (26 case-control studies in which the sample size ranged from 25 to 408 cases, 2 systematic reviews and meta-analysis studies, 1 prospective study and 1 retrospective-large scale study) selected for inclusion in 21 studies: low serum 25(OH) D levels was associated with vitiligo and in 9 articles, no significant association was found between vitiligo and vitamin D deficiency.

Conclusion

The findings of this study suggest that there is a probable relationship between vitamin D deficiency and vitiligo. However, further studies with larger sample size and considering variables such as age, sex, seasonality and gender are required to confirm the role of vitamin D deficiency in vitiligo.

Keywords: Serum 25-(OH)D, Vitiligo, Vitamin D

Pyroptosis Block to Prevent CD4 Cell Death in Acquired Immune Deficiency Syndrome

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Introduction

Acquired immune deficiency syndrome (AIDS) is a severe loss of the body's cellular immunity. Aids is a potentially life-threatening condition caused by the human immunodeficiency virus (HIV). AIDS is a global pandemic. As of 2016, approximately 36.7 million people have HIV. There is currently no cure or effective HIV vaccine. Treatment consists of highly active antiretroviral therapy (HAART) which slows progression of the disease. Studying the relation of new antiretroviral drug (caspase-1 inhibitor) and aids treatment is a main goal.

Methods

This essay was a systematic review of English articles published in PubMed, Nature and Science since 2010. Being up to date, matching with keywords and accessing the full text were incoming metrics.

Results

The papers address a mystery: why immune cells die in people with HIV. A 2010 study showed that HIV does not directly kill most of these cells, called CD4 cells. Instead, the cells often self-destruct. They found that most of the cellular suicide occurs via a process called “pyroptosis”. A key protein involved in pyroptosis is caspase 1, and an experimental caspase-1 inhibitor made by Vertex Pharmaceuticals (VX-765) had already been tested in humans as a potential treatment for epilepsy. The drug, failed to help epileptics, but studies suggested that it was safe. Scientists tested VX-765 in HIV-infected cells cultured from human tonsils and spleens, and found that it blocked pyroptosis and prevented CD4 cell death.

Conclusion

The approach could one day provide an alternative to the antiretroviral drugs currently used by 9.7 million people worldwide to manage HIV infection. HIV infection causes a mass suicide of immune cells a process that can be halted by an experimental drug such as VX-765 that blocks cellular self-destruction.

Keywords

AIDS/HIV treatment, Pyroptosis, Caspase-1 inhibitor, Vertex Pharmaceuticals (VX-765)

Breast Cancer Prevention with Bisphosphonates and Aromatase Inhibitors

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Introduction

IARC (International Agency for Research on Cancer) in 2018 claims that the world faces more than 18million new cases of cancer, of which 9million will lead to death. The average incidence of cancer in Iran is similar to the world (world:182per100,000people, Iran:158per100,000people). Breast cancer has greatest incidence in the world (11.6%) and in Iran (12.5%). Bisphosphonates and aromatase inhibitors(AIs) are two class of cheap drugs that prevent the loss of bone density. Studying the effects of bisphosphonates and AIs on breast cancer prevention is main goal.

Methods

This essay is a systematic review of English articles published in PubMed, Research gate and Lancet since 2010. Being up to date, matching with keywords and accessing the full text were incoming metrics.

Results

Compared to Herceptin and Tamoxifen, AIs were able to reduce the likelihood of the cancer recurring by about a third over 5years. AIs also reduced the risk of dying by about15% over the10 years. When AIs were compared to no treatment at all, the reduced risk of dying shot up to40%. Bisphosphonates could reduce secondary tumors growing in the bone by17%. Researchers found that 2-5years with bisphosphonates reduced recurrence of cancer in the bone by28% and cut death rates by18% over the course of a decade. There are, however, some side effects to taking AIs. AIs can cause a reduction in bone density so two types of drug should be used together.

Conclusion

These results show bisphosphonates reduce the chance of breast cancer returning in the bones. Aromatase inhibitors block the body's ability to make estrogen, which can fuel the growth of breast cancer. These cheap treatments should be considered for routine use in the treatment of early breast cancer. Further research is still important to how to give these drugs in combination with each other.

Keywords

Aromatase inhibitors, Bisphosphonates, Breast cancer prevention, Bone

Inhibitory Evaluation of Commercial Disinfectants against *E.coli* Isolated from Clinical Samples

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Introduction

Nosocomial infections are one of the significant causes of mortality all over the world, but it can be easily managed by adequate application of correct type of disinfectant. The purpose of this study was to evaluate the bactericidal activity of some routine used disinfectants in Mousavi hospital (Procept instro، Procept med ،Procept floor) and some disinfectants (Aniosyme DD1, Aniospray ,Steranios ،Surfanios) that use in Valiasr hospital against *E. coli* isolated from clinical samples and environment. Also, the rate of hospital disinfectants bactericidal effect was evaluated by time killing assay.

Methods

In this research the susceptibility of 100 clinical isolates of *E. coli* against disinfection was determined by obtaining the Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) for each of these compounds were examined. Also to evaluate the effect of organic load on the activity of the disinfectants, %5 bovine albumin was applied as dirty condition in standard suspension test. Then, in a separate trial the time required to kill isolated bacteria in the face of disinfection in the hospital was measured.

Results and discussion

According to the results Procept med have the lowest and Steranios had the highest Minimum Inhibitory Concentration and Minimum Bactericidal Concentrations among tested hospital products. The testes showed that efficacy of disinfection reduced in the presence of %5 organic matters (5% albumin, dirty condition), especially the efficacy of Surfanios and Anio spray. Surprisingly, all of the disinfectants had bactericidal effect in the first minute of testing.

Conclusion

The results indicate that the Procept med was most effective agent against E. coli, while Steranios was the poorest agent in our study And all disinfectants had a bactericidal effect in the first minute.

Keywords

Clinical isolates, Commercial disinfectants, *E. coli*, MBC, MIC, Time killing assay

Clinicopathological significance of DNA methyltransferase 1 expression in laryngeal squamous cell carcinoma

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Introduction

DNMT1 encoded an enzyme that affect promoter methylation status is thought to play an important role in the development of cancers. Regarding to less information about the biological and clinical significance changes of this gene in Laryngeal Squamous Cell carcinoma (LSCC), the current study was designed to evaluate the contribution of DNMT1 expression as diagnostic biomarker in development of LSCC.

Methods

DNMT1 mRNA expression quantified by comparative RT-qPCR in 33 fresh frozen laryngeal tumors and 33 adjacent normal tissue. Relationship between the expression of DNMT1 in tumor tissue and various clinicopathological features were also analyzed.

Results

We found the mRNA levels of DNMT1 was significantly elevated in LSCC than that of in no-tumor tissues ($P<0.0001$) The expression of DNMT1 was strongly associated with histologic grade. No significant relationships existed with other clinicopathological parameters.

Conclusion

Our findings indicated that the expression of DNMT1 markedly increased in LSCC. It seems these genes can be used as a diagnostic biomarker in development of LSCC.

Keywords

Laryngeal squamous cell carcinoma, DNA methyltransferase, Expressional analysis, Real-time PCR, Biomarker, Histologic grade

The effect of probiotics in obesity,systematic review

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Introduction: The worldwide prevalence of obesity has nearly more than doubled. The association of obesity has been proven in many diseases, such as atherosclerosis and liver disease and some cancers.Because of pharmacological treatments are less effective in preventing obesity,administration of probiotics improves the body weight, abdominal fat and barrier function.Certain strain of probiotics may regulate body weight by influencing the host metabolic,neuroendocrìne and immune function.

Methods: PubMed, Google Scholar and Google were searched from 2014 up to 20 October 2018.
Result: Studies were reviewed for efficacy of probiotics in obesity.these studies showed significant weight loss and obesity treatment with probiotics from different strains of Lactobacillus and Bifidobacterium families. These probiotics (obesity treatments), which are effective on loss weight, including Lactobacillus gasseri, Lactobacillus Paracasei, Lactobacillus rhamnosus, Lactobacillus plantarum,bifidobacterium animal. These studies have shown different effects such as 1. Lipase reduction in 40% of examined probiotics 2. An increase in ANGL 4 in 20% of probiotics, 3. the reduction ratio of (inflammatory factor) M1macrophage/ (noninflammatory factor) M2 macrophage 4. reduction of leptin (fat mass) in 80% probiotics, 5. the increasing of visceral fat tissue metabolism was seen in in 80% of studied probiotics.

Discussion: The effect of Lactobacillus Paracasei on weight loss was demonstrated by an increase in the ANGPTL4 inhibitor (lipoprotein lipase inhibitor), as well as the reduction of plasma triglycerides (TG) and reduction of IGA activity of adipose tissue (as an inflammatory factor) . In addition to these effects, probiotics can increase sympathetic nervous activity in brown adipose tissue (BAT-SNA) and in white adipose tissue (WAT-SNA) . Other effects of probiotics, includes the reduction of VLDL and TG. Lactobacillus gasseri reduces the amount of macrophage M1 (a pro-inflammatory factor) to M2 macrophages (an anti-inflammatory factor), which indicates the effect of reducing inflammation in the treatment of obesity . Lactobacillus rhamnosus and Bifidobacterium reduce TNFα (an anti-inflammatory effect on adipose tissue) and Leptin (= fat mass) and then it leads to lose weight . Lactobacillus Paracasei and
Lactobacillus Plantarum, through increasing metabolism of visceral fat and subcutaneous adipose tissue causes weight loss . Other effects of Bifidobacterium and Lactobacillus Paracasei and Lactobacillus rhamnosus are the increase of insulin levels in the blood and the increase of hepatic metabolism.
Conclusions: Attention to these useful some probiotics such as species of lactobacillus and bifidobacterium can help us to obtain new drugs in treatment of obesity by reduction of inflammatory and immune response.also this kind of treatment will make the majority of patients with obesity more receptive and therefore more effective.
Key words: probiotic,lactobacillus,obesity,inflammatory

Evaluation of Herbal Combination of Fenugreek, Fennel, Chicory, Barley and Soya in prevention of Cancer-induced Cachexia/Anorexia in Solid Tumors' Patients: A Randomized, Double-blinded, Placebo-controlled Clinical Trial

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Abstract

Introduction

Cancer anorexia-cachexia syndrome (CACS) are one of the major problems of patients with advanced malignancies, which has a significant impact on their treatment, quality of life and survival rates. Despite the numerous studies on the control and treatment of cachexia, there is no definitive treatment for the improvement of these patients yet. The aim of this study was to determine the effectiveness of adding General tonic® supplement (Composed of Fenugreek, Fennel, Chicory, Carrot, Peas, soya and barely) to standard treatment of cachexia (megestrol acetate).

Method

This study was a randomized, double-blind, placebo-controlled trial that was conducted at a period of one year on 55 eligible patients. All adult patients with advanced malignancies who had anorexia and at least 5% weight loss in the past two months, if they had other included criteria and received megestrol acetate as a routine cachexia treatment, were included into the study. Herbal supplementation or placebo was administered to patients with a dose of 3 sachets per day for one month. According to the study goals, demographics information, weight variations, anthropometric indices, and data from Anderson, Edmonton, FAACT and quality of life (EORTC) questionnaires were recorded at baseline and after one-month follow-up.

Result

Study was completed with 55 patients. The results showed that weight changes in the intervention group was significantly better than the placebo group, so that the patients in the intervention group experienced an average weight gain of 0.9 kg, but patients in the placebo group had averaged 0.6 kg weight loss (*P* value<0.001). There were no significant changes in the anthropometric indices such as mid arm muscle circumference (MAMC), triceps skinfold thickness (TSF), and grip strength in each group. No changes were noted about quality of life indicators and FAACT criteria. Finally, in Edmonton and Anderson questionnaires, changes were only significant in two variants including anorexia (*P* value<0.001) and fatigue (*P* value= 0.008) between two groups, that indicating the effectiveness of the herbal supplement in these cases.

Conclusion

Considering the positive results obtained from the General tonic® supplementation in improving weight and appetite of patients, this supplement can be used as an adjunct therapy for patients suffering from cancer-induced cachexia. The larger studies with more sample size and longer follow-up are warranted.

Keywords

Cancer induced cachexia-anorexia, Megestrol acetate, General Tonic® herbal combination, Clinical trial

Potential Drug-drug Interactions in Solid Tumor Patients at Hematology-oncology Hospital, Seyedoshohada, Iran, 2017

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Abstract

Introduction

Drug-drug intraction is identified by effect of a drug, food or each substance leads to changes in pharmacokinetic and pharmacodynamics parameters of other drug. The aim of this study was to evaluate frequency and probable risk factors for moderate and major drug–drug interactions in patients suffering from solid tumor at a referral hematology–oncology hospital, Seyedoshohada, Iran.

Method

We considered all solid tumor patients admitted to hematology–oncology ward of Seyedoshohada hospital during a 6-month period who received at least two anti-cancer or non-anti-cancer medications concomitantly. Potential drug–drug interactions between anti-cancer and non-anti-cancer medications during ward stay were identified by Lexi-Interact on-line software App Version 1.1.

Results

Two hundred twenty seven drug–drug interactions with moderate or major severity were detected from 141 patients (48.9% male and 51.1% female). More than 80.8% of patients had encountered at least one potential drug–drug interactions. Drug interaction with moderate severity (44.4%) was the most identified potential drug–drug interactions. Most of drug–drug interactions (64 %) were classified as pharmacodynamics. Antiemetic agents (7.14 %) were the most common medication classes responsible for detected drug–drug interactions. The interaction between granisetron and metoclopramide was the most frequent drug–drug interactions (19.2%). The interaction between two anti-cancer agents was docetaxel with carboplatin. The number of administered medications was determined as an independent risk factor for providing drug–drug interactions.

Discussion and conclusion

Potential drug–drug interactions occur frequently in solid tumor cancer patients at oncology ward of Seyedoshohada hospital. Most of these drug interactions have major severity which is matter of concern. Drug–drug interactions in oncology are more critical and will lead to more problematic issue in management of cancer patients.

Keywords

Drug–drug interactions, Hematology-oncology, Malignancy, Solid tumor

Evaluation of Allopurinol Efficacy on Hepatic Steatosis in Patients with Nonalcoholic Fatty Liver Disease

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Introduction

Nonalcoholic fatty liver disease (NAFLD) refers to the presence of hepatic steatosis when no other causes for secondary hepatic fat accumulation are present. NAFLD may progress to cirrhosis and be a potential cause of cryptogenic cirrhosis. It is the most common liver disorder in Western industrialized countries. Xanthine oxidase (XO) activation plays a potential role in the pathogenesis of NAFLD. So we aimed to evaluate the effects of allopurinol in a blinded, parallel-group trial in adult patients with NAFLD.

Methods

Forty-four adult patients with diagnosis of NAFLD were randomized in a 1:1 ratio to receive allopurinol (100 mg once daily for the first 2 weeks, 100 mg twice daily for the second 2 weeks, and 300 mg once daily thereafter) or placebo for 4 months. Primary outcome was improvement in hepatic steatosis. Hepatic steatosis was assessed using liver attenuation index (LAI) on non-contrast computed tomography imaging. LAI was defined as hepatic attenuation minus splenic attenuation.

Results

At the end of the study period, patients in the allopurinol group experienced a significant reduction in serum uric acid (-1.0 ± 0.6 vs. 0.3 ± 0.7, $p < 0.001$) compared to the placebo group. Additionally, a significant increase in LAI was only observed in allopurinol recipients (5.2 ± 6.7 vs. -1.3 ± 4.1, $p = 0.001$). The difference between two groups in LAI changes remained significant after adjustment for covariates ($p = 0.006$ and $p = 0.003$, respectively). Serious adverse events causing medication noncompliance or patient withdrawal were not observed in study groups.

Conclusion

Allopurinol markedly improved hepatic steatosis in patients with NAFLD without any serious adverse events.

Keywords

Allopurinol, Computed Tomography, Hepatic Steatosis, Liver Attenuation Index, Nonalcoholic Fatty Liver Disease, Xanthine oxidase,

Evaluation of Medication Errors in CCU ward of a Teaching hospital In Tabriz

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Introduction
Through the time passage, several studies have been revealed that Medication Errors (MEs) and afterward harmful consequences are among the most dangerous events which happen in the hospitals. MEs can impose economic loss to medical center or patients. That is why detecting and preventing these errors are among the most important research fields in medical centers. Clinical pharmacists are key members of the health-care system that can help to decrease MEs significantly. According to several studies, it has been confirmed that the presence of clinical pharmacists in the daily rounds of a general medicine unit can reduce the rate of medication errors up to 80%.

Methods
This was a prospective study performed in a coronary care unit (CCU) ward of Shahid Madani hospital for six months from March 2016 to September 2016. 187 patients were entered into this study. MEs which have been occurred at the medical and nursing level were detected by studying the patients prescribing cards, medical records and direct observation of nursing staff act. The validity of detected MEs was confirmed according to the latest pharmacotherapy and medical guidelines. The rate of medication errors was calculated by dividing the number of detected errors by the number of patients.

Results
During this study, 223 MEs (1.2 per patient) were detected. The types of detected MEs were: the wrong dose of medications (65.1%), wrong drug selection (22.4%), errors in entering orders in the patients' prescribing card (4.3%), errors in the drug dispensing (4.1%), and drug interactions (4.1%). These errors happened mostly in heparin and statins prescription. Inappropriate evaluation of partial thromboplastin time (PTT) in patients with acute coronary syndrome was the most detected error caused by cardiologists. Irregular PTT tests and cardiologists' absence at ward were the reasons for these errors. The other errors made by cardiologists were prescribing errors. The dispensing errors and mistakes in entering orders were mostly caused by nursing staff. Unlike prior studies, the results of the current study demonstrated that most of the medication errors in the CCU ward were occurred by cardiologists. In accordance with previous studies, this study showed that the major part of medication errors took place because of the wrong dose. Our study can be supposed as an opening for future discussions with physicians leading to develop prescription policies in the hospitals.

Conclusion
It can be concluded that medication errors can occur in all stages like prescription, preparation, and administration; and this is a great concern for hospitalized patients. Strict controlling, training programs, and the presence of clinical pharmacists are highly recommended for preventing these types of errors. This study revealed the urgent need for clinical pharmacists at the cardiology wards. We hope that this study would be helpful to increase the number of clinical pharmacists in hospitals. Further studies should be conducted to realize how the rate of MEs will be changed when guidelines and protocols are put into effect in the presence of clinical pharmacists.

Keywords
Medication error, Clinical pharmacist, Pharmacotherapy, Prescription, Preparation, Administration

Targeted Effect Of Monoclonal Antibodies On Gastric Cancer

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Introduction : Gastric cancer (GC) is the second leading cause of cancer-related death worldwide ; about 1 out of 5 of stomach cancer has too much of a growth promoting protein called HER-2 on the surface of the cancer cells.this review provide an update on our knowledge of HER-2 in GC,including the detection and prognostic relevance.also summarized the trials that have been conducted or that are underway to determine the optimal uses of trastuzumab in GC,including its use as monotherapy and continuation beyond disease progression.

Method : A review of selected articles on multidisciplinary treatment of GC,between 2010 and 2019 was carried out,the following heading were related : stomach cancer,HER-2 targeting, monotherapy,treatment.

Results : Many studies showed that trastuzumab given in combination with first line chemotherapy (5-FU and Cisplatin) improved the overall survival of HER-2 positive patient with advanced gastric cancer (AGC).

Conclusion : HER-2 positive AGC patient showed a better prognosis than HER-2 negative patient,especially with the introduction of trastuzumab.

Keywords : Gastric cancer , Personalized medicine , HER-2 positive , Treatment , Targeting , Monoclonal antibody

Evaluation of Acute Kidney Injury Induced by Vancomycin+Piperacillin-Tazobactam Regimen in the Imam Khomeini Hospital Center in Tehran

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Objective: To evaluate the nephrotoxicity of vancomycin+piperacillin-tazobactam (VPT) regimen in the first step and to find the effective strategies to reduce this side effect in the next step.

Introduction

One of the most common antibiotic regimens in medical and critical wards is the VPT for the coverage of gram positive, gram negative and anaerobic microorganisms particularly as empiric treatment [1]. One of the serious side effects of vancomycin is nephrotoxicity that some factors such as old age, impaired kidney function, dehydration, obesity, hypoalbuminemia and concomitant administration with certain drugs i.e. colistin, amphotericin B, aminoglycosides, acyclovir, furosemide and piperacillin-tazobactam increase the risk of its incidence[2]. We want to evaluate the acute kidney injury of vancomycin when this drug is administrated with piperacillin-tazobactam.

Method

We evaluated 40 patients (18-75 years old) in the form of observational that received VPT as empiric or culture based treatment in the Imam Khomeini hospital center (IKHC). The patients with creatinine clearance less than 30 ml/min were excluded from the study. The dose of vancomycin and piperacillin-tazobactam was 1 gram q 8-12 h and 4.5 gram q 6-8 h respectively. The renal function of patients (serum creatinine, urea and urine output) was recorded in the baseline and followed during treatment and 48 hours after treatment discontinuation.

Results

Of the 40 patients, 14 of them (35%) developed AKI that 9 patients (64%) were over 60 years of age. Also 3 patients required dialysis during AKI. In all patients AKI developed at least 72 hours after initiation of regimen.

Discussion

Following previous studies in this field we wanted to evaluate the nephrotoxicity of VPT in IKHC and we want to find effective strategies in the future that reduce the incidence rate of this side effect [3]. We concluded that incidence of AKI induced by VPT in IKHC is similar to other centers. The importance of this issue is more in our country because the reduction of prescribing this regimen will lead to further use of carbapenem based regimens and

also increase the resistance rate. Therefor finding effective strategies to reduce of this side effect make a great contribution to practice in our country particularly due to increasing resistance rate.

Keywords: Acute Kidney Injury, Nephrotoxicity, Piperacillin-tazobactam, Vancomycin

Evaluation of the Effect of Lycopene on Serum Level of Cardiac Biomarkers and hs-CRP in Patients Undergoing Elective Percutaneous Coronary Intervention (PCI): A Randomized Controlled Clinical Trial

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Introduction

Considerable evidence suggests that lycopene, a carotenoid without provitamin activity, has significant antioxidant properties. Several studies have reported significant effects of lycopene in the prevention of cardiovascular diseases in human. Following percutaneous coronary intervention (PCI), myocardial ischemia may recur or persist in a significant subset of patients. In the present study, we aimed to clinically evaluate the possible effect of lycopene in the prevention of post-PCI ischemia.

Methods

In a randomized controlled clinical trial, a total of 45 patients who planned to undergo elective PCI were randomly assigned to two groups to receive either lycopene (30 mg 12 h before PCI as well as 15 mg just before and 8 h after PCI) plus standard treatment (lycopene group, n = 23) or standard treatment alone (control group, n=22). Standard treatment included aspirin, a statin, and a beta-blocker. The serum levels of creatine kinase-MB (CK-MB), troponin I, and high sensitivity C-reactive protein (hs-CRP) were measured 12 h before and after the procedure and compared between the groups.

Results

The mean ± SD of patients' age was 59.52 ± 12.21 and 59.41 ± 9.51 years for lycopene and control groups, respectively. The use of lycopene had no significant effect on the serum levels of troponin I (P=0.176) and hs-CRP (P=0.184); however, it significantly reduced CK-MB level compared to the control group (P=0.048).

Conclusion

Consumption of lycopene has no effect on the serum levels of troponin I and hs-CRP but reduces the CK-MB level after PCI in adult patients. Therefore, lycopene has the potential for reduction of post-PCI cardiac ischemia. More studies with higher doses and larger sample size are required to confirm this effect.

Keywords

CK-MB, Clinical Trial, Hs-CRP, Lycopene, PCI, Troponin I

Evaluation of the Effect of Plantago major Hydroalcoholic Extract on Diabetic Foot Ulcer and Bedsore Healing: A Randomized Controlled Clinical Trial

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Introduction

Diabetic foot ulcer and bedsore are common types of ulcers around the world. Wound healing and repairing of injured tissue are major problems. Plantago major is a plant of Plantaginaceae family that its wound healing effect has been shown in a few animal studies. This study aimed to evaluate the clinical efficacy of Plantago major hydroalcoholic extract on diabetic foot ulcer and bedsore healing.

Methods

In a randomized controlled clinical trial, patients with either diabetic foot ulcer grade 1 or 2 or bedsore stage 2 or 3 who met the inclusion criteria were randomly assigned to drug (*Plantago major*) or control groups. For patients in drug group, the prepared Plantago extract 10% topical gel was applied on the wound once daily concurrent with routine wound care including irrigation with normal saline solution, dressing, and antibiotic administration, if necessary, for two weeks, while for patients of control group, specific dressing (common type of the hospital) concurrent with routine wound care similar to drug group was used for two weeks. Before any intervention, the wound size as the product of the longest length and width as well as the presence or absence of erythema around the wound was determined and recorded. At the end of 7th and 14th day of intervention, the percent of wound size reduction and the erythema status were recorded. Furthermore, the number of cases with complete wound healing during the study was recorded for both groups. Finally, the mentioned variables were compared between the groups.

Results

Fifty patients (29 males and 21 females) in drug group and 44 patients (30 males and 14 females) in control group completed the study (P=0.393). Plantago extract gel significantly resulted in more reduction in the wound size compared to control at the end of first (64.90 ± 29.75% vs. 33.11 ± 26.55%; P<0.001) and second week (86.85 ± 24.34% vs. 52.87 ± 32.41%; P<0.001). Also, significantly, more cases of erythema resolution occurred with Plantago gel compared to control (P=0.001). Furthermore, the number of patients with complete wound healing in drug group (n=32, 64%) was significantly more than control group (n=9, 20.45%; P<0.001).

Conclusion

The use of 10% topical gel of *Plantago major* hydroalcoholic extract results in the acceleration and improvement of diabetic foot ulcer and bedsore healing. However, more studies with larger sample size and longer duration are required to confirm this effect.

Keywords

Bedsore, Clinical Trial, Diabetic Foot Ulcer, Hydroalcoholic Extract, *Plantago major*, Wound Healing

Evaluating One Polymorphism of Glucocorticoid Receptor Gene (ER22/23EK) and 1-Year Clinical Outcome in Kidney Transplant Patients in Shiraz

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Introduction
Glucocorticoids are a pivotal component of immunosuppressive regimen in solid organ transplantation including kidney. To induce immunosuppression, glucocorticoids have to bind their intracellular receptors. Several polymorphisms have been described within the glucocorticoid receptor gene (NR3C1). The ER22/ 23EK polymorphism (also known as rs6189 and rs6190) consisting of 2 linked single-nucleotide mutations in codons 22 and 23 in exon 2 of NR3C1 caused an amino acid change from arginine (R) to lysine (K). The aim of this study was to evaluate the possible effect of glucocorticoid receptor gene polymorphism including ER22/23EK and 1-year clinical outcome in kidney transplant recipients.
Methods
We conducted a case-control study during 2 years on 100 adults with transplanted kidney including subjects without rejection (n=50, control) and those with documented rejection within 1 year after transplantation (n=50, case) in Shiraz. Required information such as demographic characteristics; relevant clinical and paraclinical findings (e.g., duration of hospitalization, type and duration of dialysis, delayed graft function [DGF], panel reactive antibody, immunosuppressive regimen) were gathered from patients' medical files and also through face-to-face interview. Genotyping of ER22/23EK polymorphism was carried out by polymerase chain reaction restriction fragment–length polymorphism.
Results
The cohort consisting of 64 males and 36 females. Their mean (SD) age was 41.25 (13.51) years. The allelic frequencies of mutant alleles of ER22/23EK polymorphism in all patients were 0.065, respectively. According to multivariate logistic regression analysis, no statistically significant association between ER22/23EK polymorphisms and risk of acute rejection was observed (odds ratio = 0.766, 95% confidence interval = 0.181-3/244, *P* = 0.717. In addition, there was no significant association between ER22/23EK (P = 0.717) polymorphisms and risk of DGF. Length of hospital stay after kidney transplantation was also comparable between individuals with ER22/23EK (P=0.717) polymorphisms
Conclusion
Our data suggest that there was no prognostic value of ER22/23EK polymorphisms for predicting acute rejection or DGF in Iranian adults with transplanted kidney. These results may be biased due to the small sample size.
Keywords
Delayed graft function, Glucocorticoid receptor gene, Iranian population, Kidney transplant, Polymorphism, Rejection,

Investigation Analgesic Effect of Curcumin Topical Formulation in Osteoarthritis Patients

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Introduction

Osteoarthritis (OA) is the most prevalent form of arthritis. The degeneration of articular cartilage is its pathological manifestation and pain is the most important symptom in OA. Today the use of traditional herbal medicines has been common in the treatment of diseases. The aim of this study was to recognize the efficacy and safety of curcumine pomade on patients with knee osteoarthritis compare to diclofenac as standard medication.

Methods

The curcumin pomade was prepared via mixing of curcumin (10%) and base Vaseline. The safty and stability of pomade were conducted with Draize and freeze & thaw tests respectively. The curcumin pomade used tropically four times a day for 2 weeks in 60 patients. The effects of curcumin pomade and diclofenac pomade (1%). Was assesses through the visual analog scale (VAS) index and Western Ontario and McMaster Universities Arthritis Index (WOMAC).

Results

The prepared curcumin pomade was stable and didn't have irritation signs. Desirable effects of both medications compared to their pre-treatments were observed after only 2 weeks of continuous treatment, so that VAS and WOMAC index were decreased and increased after treatment respectively (P: 0.000).

Conclusions

Two-weeks use of curcumin pomade could reduce pain-related symptoms in patients with OA and topical form of it can amrliorate the pain, stifness and function disability.

Keywords
Osteoarthritis, Curcumin, Diclofenac, VAS, WOMAC, Pain

Evaluation of Prescribing Patterns of Family Physicians Using World Health Organization Prescribing Indicators in Razan County, Iran

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Introduction

According to World Health Organization (WHO) estimates, more than half of all medicines are prescribed, dispensed or sold improperly *(1)*. This major global challenge has significant impacts on quality of therapy, patient's safety and cost of treatments *(2)*. Understanding of current trends of prescribing can be used to increase rational use of medicines especially in primary care provided by general practitioners.

Methods

This retrospective, cross sectional study carried out over three months on prescriptions of 25 general practitioners working in 6 urban and 9 rural primary health centers in Razan county, Hamedan province, Iran. Prescribing patterns were assessed according to World Health Organization (WHO) prescribing indicators (Table 1) *(3)* by using 2532 randomly selected prescriptions filled between 22 December 2018 and 20 march 2019.

Results and discussion

The average number of drugs per prescription was 3.0±0.05 and 97.6% of medicines prescribed by generic name. Of all prescriptions, 52.3% included one or more antibiotics (fig.1) with azithromycin (36.7%) and amoxicillin (25.6%) being the most commonly agents (fig.2). Injections were prescribed in 31.4% of patients and corticosteroids (45.8%) and vitamins (19.2%) were the most prescribed injections (fig.3).

The average number of drugs per prescription is higher than WHO suggestion (<2.2) and shows some degree of polypharmacy *(3)* that can increases drug side effects and interactions. The percentage of medicines prescribed by generic name was 97.6 %, which is close to the standard (100 %) *(3)*. Antibiotics were prescribed in 52.3% of patients that is higher than WHO suggestion (<30%)*(3)*.It seems that there is a shift toward more frequent use of Azithromycin compared to the past that could be related to its safety and convenience of use *(4)*. It should be considered that growing rate of microbial resistance caused by overuse/misuse of antibiotics leads to reduced effectiveness of current agents and increases the cost of treatment *(1)*. The percentages of prescriptions containing injections is higher than suggested optimal value (<20%) indicating overuse of this costly and often unnecessary form of drug therapy *(1)*.

Conclusion

The results of present study indicates that irrational use of drugs, in terms of polypharmacy and overuse of antibiotics and injections, exists in primary care provided by family physicians. There is a need to improve prescribing patterns of family physicians by education and monitoring of prescribing indicators.

Keywords: Antibiotics, Family physicians, Injections, Irrational use of drugs, Prescribing indicators, Prescribing patterns

Evaluation of the Association between Serum Vitamin D Status and SYNTAX SCORE in Patients Undergoing Percutaneous Coronary Intervention (PCI)

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Introduction
The SYNTAX score has been designed to assess the complexity of coronary artery disease based on lesion location, impact on blood circulation, degree of vessel stenosis and vessel calcification. The aim of this study was to evaluate whether the baseline vitamin D status is associated with SYNTAX score in patients undergoing percutaneous coronary intervention (PCI).
Methods
A total of 152 patients who had successfully undergone PCI were recruited to the study. SYNTAX score was calculated with baseline coronary angiography for all patients. Pre-procedural vitamin D was determined by HPLC method.
Results
Mean vitamin D level was 17.45±10.27 in the investigated patients. According to the results, a significant inverse association was found between serum vitamin D level and SYNTAX score. (p value=0.024)
Conclusion
The inverse association between vitamin D levels and SYNTAX score revealed that patients with lower vitamin D levels may have a poor prognosis for cardiovascular events following PCI. Therefore, our results suggest the measurement of Vitamin D as a promising predictor for determination of patients at high risk of revascularization. Additionally, according to high prevalence of vitamin D deficiency in our country, vitamin D correction might be considered as a key step to reduce poor outcomes after PCI.
Keywords
Vitamin D, SYNTAX score, Percutaneous coronary intervention (PCI)

Evaluating the usage pattern of high-cost antibiotics before and after an antibiotic stewardship program at Namazi hospital in Shiraz

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Introduction
The excessive use of anti-microbial medicines over the past few decades has led to an ever-increasing spread of microbial resistance, reducing the efficiency of anti-microbial drugs, and the costly and time-consuming treatment for infectious diseases. Hence, in many countries in the world, a variety of corrective programs in the health system have been planned and implemented to reduce and control the use of this drug group. The purpose of this study is to investigate the clinical and economic effects of an antibiotic stewardship program on prescribing 5 expensive antimicrobial drugs in Namazi Hospital, Shiraz, Iran.

Methods
According to the antibiotic stewardship program, all wards of Namazi hospital should consult with the infectious diseases service within 3 days when ordering any of the five expensive and broad-spectrum anti-microbial drugs including Amphotericin B liposomal, Caspofungin, Colistimethate sodium, Linezolid, and Voriconazole. Infectious disease service was authorized to either approve or disapprove theses consults. The pre- and post- antibiotic stewardship program periods were defined as 2016-2017 and 2017-2018, respectively. Four indexes including 1) total consumption rate 2) per capita consumption 3) total cost, and 4) per capita rial were measured annually to assess the change in process of prescribing these antimicrobials. Clinical outcome indexes including mortality rate and length of hospital stay were also considered. These data were extracted from the Hospital Information System and also patients' medical charts.

Results
A decrease in total consumption rate (31.3%), per capita consumption rate (24.64%), direct cost (34.98%), and per capita rial (32.21%) were detected. However, the decrease in total cost and per capita consumption, were statistically significant. In addition, the defined daily dose of studied antimicrobials decreased. Regarding clinical outcome indexes, the length of hospital stay, rate of mortality and duration of antimicrobial drug administration also decreased. Albeit, only the decrease in antimicrobial drugs duration was statistically significant. Among 600 consulting requests from the infectious diseases service, 32.5% were disapproved. The most adherence rates to the antibiotic stewardship program were in surgery and intensive care unit wards. In 14.2% of cases, patients received at least one of these antibiotics without consulting with the infectious disease service. In addition, 4% of antibiotic prescriptions were against the infection specialist recommendations.

Conclusion
Our study data suggest that the active contribution of infection specialists in the antibiotic stewardship program can significantly decrease the total cost as well as per capita consumption of high cost medications of along with improving the clinical outcome.

Keywords: Antibiotic Stewardship Program, Antimicrobials, Consumption, Cost

Evaluation Of CETUXIMAB Consumption In CRC & GC And Its Role In Patient Recovery

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BACKGROUND

Cancer is one of the leading causes of death in the world and more than 90%deaths from cancer occur due to metastasis .Colon and rectum cancers are the most common cancers in the GI tract,Which is the third most common cancer death in men.in colorectal cancer EGFR & HER2& HER3 can be increasing . MAbs specific for molecules that impact on the host can block tumor angiogenesis thereby inhibiting tumor growth, or target inhibitory immunologic checkpoint signals thereby enhancing the anti-cancer cellular immune response.

OBJECTIVE

This Article aims to evaluate the value of using drug CETUXIMAB to treat CRC & GC

METHODS

A MEDLINE & pubmed search was conducted of articles that published from 2005 to the present using the terms cetuximab , C225, IMC-C225, colon cancer, colorectal cancer, monoclonal tberap3~ and target therapy. Abstracts presented at the American Society of Cfinical Oncology annual meetings from 2005 to 2019 and the 2005Gastrointestinal Cancers Symposium were reviewed and included as applicable and Iranian med journal

Conclusion

Monoclonal antibody use is recommended due to past treatments and their low screening and efficacy and chemotherapy side effects.

RESULTS

Although Colorectal cancer continues to be a major cause of cancer death worldwide, the availability of new chemotherapeutic agents such as irinotecan and oxaliplatin have improved the treatment options over the last decade, especially in patients with stage IV disease. Cetuximab, a new antibody to EGFR, has shown considerable activity in the treatment of metastatic colorectal cancer that is resistant to chemotherapy, both as monotherapy and in combina and medicathon CETUXIMAB reduces cancer resistance and thus reduces the likehood metastasis,which facilitates patient recovery and reduces CRC & GC death

Key words

Monoclonal Antibody , CETUXIMAB,CRC , Colorectal ,GC, HER1,MOABs

Evaluation of Meropenem, Imipenem, Colistin, Teicoplanin and Voriconazole Use in Ayatollah Taleghani Hospital

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Abstract
Antibiotics are of particular importance since they are the best-selling drug class and their misuse results in particular problems such as antimicrobial resistance. The WHO warns that antibiotic resistance is one of the greatest looming public health threats the world faces today. Without antibiotics people would routinely die from illnesses that could easily be cured. Nowadays, the necessity of evaluating the process of prescribing and using the drugs has become obvious. This research is about monitoring antimicrobials prescribing in ayatollah Talaghani hospital. The purpose of this study is to verify the correctness and reasonability of prescription of five antimicrobials (Meropenem, Imipenem, Colistin, Teicoplanin, Voriconazole) in hospitalized patients in general surgery and vascular surgery and Intensive care unit (ICU) wards.

Method
Cross-sectional prospective study was conducted in Taleghani Hospital, Tehran, Iran. Taleghani Hospital is a teaching hospital affiliated to Shahid Beheshti University of Medical Sciences (SBMU). Totally 156 patients from 3 wards of Intensive Care Unit, General surgery and vascular surgery, with a variety of underlying diseases, entered the study during 6 months of follow up.
The information about frequency, duration of treatment, indication and dose of five antimicrobials (Meropenem, Imipenem, Colistin, Teicoplanin, and Voriconazole) were obtained based on the information collected from Hospital Information System, called HIS.

Results
In the Intensive care unit the most prevalent antibiotics were Meropenem, Imipenem (62.38%) and Colistin (82.75%); in vascular surgery unit, Meropenem, Imipenem (20.18%) and Colistin (13.79%) have high rate of administration and finally in general surgery ward Meropenem, Imipenem (17.43%) and Colistin (3.44%) were the most common type of antibiotics.
Gastrointestinal (20.75%) and infectious diseases, like diabetic foot ulcers (12.26%) were the most common diagnosis.
The mean duration of antibiotic Therapy was about 12 days.
This study showed Meropenem therapy was started for 70.52% patients based on empiric therapy, and microbiological cultures were utilized only for 29.48% of the patients.

Conclusion
According to the collected data, many antibiotics prescriptions were not for therapeutic culture based reasons.
This can be followed by the increasing rate of antibiotic resistance, so there is a demand for medical training in order to reduce the irrational medical prescription and use.
Appropriate use of antibiotics could be promoted by the use of an Antibiotic Stewardship Program (ASP's). Involving at least one clinical pharmacist or infectious disease pharmacist can play an effective role for this purpose.
Keywords
Antibiotic prescription, Microbiological culture, Antibiotic Stewardship Program, Meropenem, Imipenem, Colistin.

Colchicine Overdose in a Suicidal Attempt: a Case Report

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Abstract

Colchicine overdose is not common but can cause serious side effects and even death. Colchicine inhibits microtubule polymerization, causing the disruption of mitotic spindle. Ingestion of more than 0.5 mg of colchicine per kilogram bodyweight causes serious side effects and can even be fatal. Therefore, colchicine Toxicity must be closely monitored and managed.

In this case report, we describe a 21-year-old woman who attempted suicide by ingestion of an estimated 30 mg colchicine. She was admitted to the hospital due to the severe abdominal and chest pain, vomiting, lethargy and weakness. The patient was medicated with ondansetron, apotel, antibiotics, platelet transfusions, sodium phosphate, calcium gluconate, Calcitriol, desmopressin acetate, Granulocyte-colony stimulating factor (G-CSF), and sodium bicarbonate. Fortunately, through the appropriate medical treatment, signs and symptoms of colchicine toxicity was relived and the patient survived despite the high level serum of Colchicine.

Keywords

Colchicine, Acute toxicity, Case report

Evaluation of Vancomycin, Caspofungin, Linezolid and Amphotericin B Use in Ayatollah Taleghani Hospital

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Introduction
Antibiotics, also known as antibacterial are medicines used to prevent and treat bacterial infections, by means of destroying or slowing down the bacteria growth. By the misuse and overuse of these medications, antibiotic resistance can occur. Antibiotic resistance can lead to several concerning issues including difficulty in treatment of infections, higher medical costs, longer hospital stays and finally increased mortality rate. This made researchers and healthcare providers getting attracted in monitoring the usage of antibiotics. The aim of this study was to investigate the pattern of antibacterial prescription and administration.

Method
Cross-sectional prospective study was conducted in Taleghani Hospital, Tehran, Iran. Taleghani Hospital is a teaching hospital affiliated to Shahid Beheshti University of Medical Sciences (SBMU). Totally 156 patients from 3 wards of Intensive Care Unit, general surgery and vascular surgery, with a variety of underlying diseases, entered the study during 6 months of follow up.
The information about frequency, duration of treatment, indication and dose of four antimicrobial (Vancomycin, Caspofungin, Linezolid, and Amphotericin B) were obtained based on the information of the physician and nursing records in addition to laboratory findings, as well as the collected information from Hospital Information System, called HIS.

Results
Among 156 hospitalized patients, Vancomycin (54.8%) and Caspofungin (66.6%) were prescribed most frequently in ICU, followed by vascular surgery (36.98%) and general surgery (8.2%) ward. Gastrointestinal and infectious diseases were the most common diagnosis (33.01%). The mean duration of antibiotic therapy was 7.6 days. Just 29.48% of prescriptions were based on microbiological culture and rest of them were empirical. Antibiograms were used for only 7.69% of patients receiving 4 investigated antibiotics in the 3 aforementioned wards.

Conclusion
The result of this study has shown a high rate of antibiotic use, which is not based on antimicrobial culture. It is vital to have medical interventions and professional training for physicians in order to reduce the unnecessary use of antibiotics. Appropriate use of antibiotics could be promoted by the use of an Antibiotic Stewardship Program (ASP's). Involving at least one clinical pharmacist or infectious disease pharmacist can play an effective role for this purpose.

Keywords
Antibiotic prescription, Antibiotic resistance, Antibiotic Stewardship Program, Caspofungin, ICU, Hospital, Microbiological culture, Vancomycin

General Practitioners' Prescribing Pattern in Zanjan, IRAN (2006-2017)

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Introduction
This study was designed to describe the prescription pattern of General Practitioners (GPs) and to determine time trends in selected items over 12-year period in Zanjan province of Iran.
Methods
Retrospectively, prescriptions were analyzed by Rx-Analyst software during 12 Iranian calendar years (1385-96) (March 21, 2006 to March 21, 2018) in Zanjan, Iran. The most prescribed medicines and World Health Organization (WHO) prescribing indicators were determined in the prescriptions of GPs.
Results
A total of 5379077 prescriptions were analyzed during 2006-2017 in Zanjan province of Iran. The mean number of medicines per prescriptions slightly decreased from 3.36 in 2006 to 2.89 in 2017. The prescriptions with antibiotics represented 45.5%±6.86% of the all prescriptions, which decreased 23.22% between 2006 and 2017. However, among the most prescribed antibiotics, the prescription of cefixime and azithromycin increased. The prescriptions with injectable medicines showed less than 49% decrease from 2006 to 2017 and were 50.8%±8.24% of the all prescriptions. Dexamethasone was the most prescribed medicine in all the studied years.
Conclusion
While the observed trends toward the increased quality of prescribing are meaningful, the values of related indicators are still inappropriate and more efforts in order to further improvement in the quality of prescribing among GPs should be considered.
Keywords
Antibiotic, Dexamethasone, Injectable medicine, Prescribing indicators

The Role of Herbal Medicine Combination for the Treatment of Cancer-induced Anorexia/Cachexia: Double-Blind, Placebo-Controlled, Randomized trial

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Introduction

Cancer anorexia-cachexia syndrome (CACS) is one of the major problems of patients with advanced malignancies, which has a significant impact on their treatment, quality of life and survival rates. Many therapeutic approaches have been studied for the treatment of cancer-induced cachexia; however, except megestrol acetate, still there aren't any documented modalities.

The aim of this study was to evaluate the possible protective effect of several traditional herbal medicines (including fennel, fenugreek, chicory, carrot, soya, barley and green Pea) in the management of solid tumors patients suffering from cancer-induced cachexia/anorexia.

Methods

This study was a randomized, double-blind, placebo-controlled trial that was conducted at a period of one year on 55 eligible patients. Included in the study were adult patients suffering from the advanced solid tumor with weight loss equal or greater than 5% within two previous months while taking a high dose of megestrol (160 mg/day) as a routine cachexia therapy. Patients were randomly assigned to receive either one sachet of herbal combination or placebo three times per day, for at least one month orally. Weight changing, anthropometric indexes, Edmonton Symptom Assessment Scale, FAACT (Functional Assessment of Anorexia/Cachexia Therapy) and EORTC QLQ-C30 version 3.0 forms (European Organization for Research and Treatment of Cancer) were assessed.

Results

55 patients were terminated the four-week follow up. Patients who received herbal combination had gained on average 0.9 kg in weight compared with a loss of 0.53 kg in the placebo group ($p<0.001$). Improvement in quality of life and FAACT scale were not significant in each group ($p>0.05$). ESAS questionnaire assessment indicated that there was significant improvement in two indices (appetite ($p<0.001$) and fatigue ($p=0.008$) in the interventional group.

Conclusion

Considering the positive results obtained from the herbal supplementation in improving weight and appetite of patients, we have demonstrated that the herbal combination is safe and effective in the prevention of weight loss, improvement of appetite and fatigue in patients with advanced cancer.

Keywords

Cancer, Cachexia, Anorexia, Herbal combination, Appetite

Ameliorative effects of N-acetylcysteine as adjunct therapy on symptoms of painful diabetic neuropathy

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Introduction

Painful diabetic neuropathy (PDN) is a variant of diabetic peripheral neuropathy which is highly prevalent and disturbing in diabetic patients. Despite its high burden, the optimal treatment of PDN has remained a clinical challenge. To explain the emergence and maintenance of BPD, increasing attention has been focused on dimensions of inflammation and oxidative toxic stress (OTS). Accordingly, the aim of this study was to investigate the effects of oral N-acetylcysteine (NAC), agent with known anti-oxidant and anti-inflammatory effects, as an adjunct therapy in patients suffering PDN.

Methods

113 eligible patients suffering PDN were randomly assigned either to the pregabalin + placebo or pregabalin + NAC groups for 8 weeks (pregabalin at a dose of 150 mg per day, NAC and matched placebo at doses of 600 mg twice a day). Mean DPN pain score was evaluated at baseline, week 1, 2, 4, 6, and 8 of the study based on the mean 24-hour average pain score, using an 11-point numeric rating scale (NRS). As secondary efficacy measures, mean sleep interference score (SIS), responder rates, Patient Global Impression of Change (PGIC), Clinical Global Impression of Change (CGIC), and safety were also assessed. Additionally, serum levels of total antioxidant capacity (TAC), total thiol groups (TTG), catalase activity (CAT), glutathione peroxidase (GPx), superoxide dismutase (SOD), nitric oxide (NO), and malondialdehyde (MDA) were assessed at baseline and at the end of the study.

Results

90 patients completed the eight-week study. The decrease in mean pain scores and mean sleep interference score in pregabalin + NAC group was greater in comparison with pregabalin + placebo group (p value<0.001 in both conditions). Additionally, more responders were observed in the pregabalin + NAC group, in comparison with pregabalin + placebo group (72.1% vs 46.8%). Moreover, more improvement in PGIC and CGIC from baseline to the end of the study was reported in pregabalin + NAC group. NAC had minimal adverse effects and was well tolerated in almost all patients. Furthermore, in respect of of OTS biomarkers, adjuvant NAC significantly decreased serum level of MDA and significantly increased serum levels of SOD, GPx, TAC, and TTG.

Conclusion

The pattern of results suggests that compared to placebo and over a time lapse of 8 weeks, adjuvant NAC is more efficacious in improving neuropathic pain associated with DPN. Ameliorative effects of NAC on OTS biomarkers demonstrated that NAC may alleviate painful symptoms of DN, at least in part by its antioxidant effects.

Keywords

Painful diabetic neuropathy, Oxidative stress, N-acetylcysteine, Anti-oxidant, Anti-inflammatory. Pregabalin.

Modern Pharmaceutical Services (review of Iran, US, Germany and UK)

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Introduction

The role of pharmacists in the manufacture of pharmaceuticals from pharmacies to manufacturing companies has expanded with the expansion of the activities of the manufacturing companies of the final pharmaceutical products and the strict quality control rules were introduced by the regulatory agencies in the field of drug production modern dermatology services The title of one of the most important services offered by pharmacists can be one of the most important and most profitable parts of pharmaceutical work

The purpose of this study was to review the modern pharmaceutical services in Iran, the United States, Germany, and the United Kingdom

Methods

This is a methodology of a variety of content analysis methods. Similarly, with the systematic search of literature in PubMed and GOOGLE SCHOLAR during the 10-year period between 2009 and 2019 to identify the latest trends in pharmaceutical search services, the term dermatological services, clinical dermatology services, and "countries of the United States, England And Germany "developed countries" pharmaceutical services ".

Results

The need for a complex value chain consists of three main components: (1) drug production; (2) drug distribution; (3) supply to the final consumer. Improving the world's economic situation, reducing the number of monopoly drug monopolies, in developed countries, the supply of new drugs and the growth of emerging markets will increase by 7-4 percent per year in world drug use by 2018 (Figure 1). The launch of new and innovative drugproducts and price rises. It will continue to improve access to health facilities and population growth, and this will significantly affect the growth of the market in emerging countries, including Iran (Fig. 2) .Despite the high growth in the emerging market,including Iran, consumption of drug consumption in these countries continues to differ greatly from developed markets (Fig. 3). In the field of clinical pharmacological services of clinical pharmacists in the United States, Britain and Germany, including injecting /prescribing for continuity care; changing drug use / formulation; providing local therapies;initiating drug therapy; injecting supplements and suppressing drugs; allowing drug and drug injecting Drug and order and interpretation of laboratory experiments in Iran have not yet determined the duties and powers of the pharmacological clinics. In other words, the position of clinicians in the health system of the country is not systematic. Clinical pharmacology services, hours and days of training with the comparison of Iran and the countries of America, Germany, and England according to Tables 1, 2 and 3 are lower than average

Conclusion

By reviewing articles and statistical comparisons, it is concluded that the presence of clinical pharmacists improves the therapeutic process, improves diagnostics, costs savings and thus targeted treatment

keywords

Iran,United States, Germany, Pharmaceutical Services, dermatology services,

Three-dimensional of chemistry education in pharmacy

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Introduction

Having been underestimated, insufficient ability to comprehend three-dimentional images, visualize them in mind and manipulate these images by twisting or turning them have caused several problems for so many people, especially students. Although there are almost similar devices that may be used in the process of teaching or studying, it creates an innovative approach to learn chemistry or related subjects like pharmacy, for the first time in Iran. As a result, we have developed a new device to not only enhance spatial skills of students but also help them succeed in many fields of study.

Methods

The following give a brief overview of how it works.Firstly, regarding the topic of the study, specific videos should be made and recorded. Then they are loaded into the inner projector of the device in order to be played in a bigger and three-dimensional way. Obviously, the main target of this invention is university students so it was tested for a sample group and achieved good results.

Result

This device has beneficially improved spatial ability of a sample group of pharmacy students in Isfahan University of Medical Science.

Conclution

By enhancing spatial skills of students, we can not only expect noticeable increases in grades and comprehension of specific subjects but also it paves the way for further developments in educational system.

Keywords

spatial skill, three- dimensional image Reference-chemical education

Quality Assurance in Pharmacy Education in Iran: Pitfalls and Lessons

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Introduction

In recent years some progress in the quality level of pharmacy education happened but it was not enough and many voids and flaws are still present in the educational system of pharmacy in Iran. This issue has been surveyed many times to rectify aforesaid flaws. The aim of this study is to evaluate the level of quality assurance in the educational system of pharmacy in Iran at the year of 2018. Our target was to assess the context, structure, process, effectiveness and output in the educational system.

Methods

This is a cross - sectional study performed at year of 2018 and includes the pharmacy schools all around the country and also the pharmacies all around city of Tehran, 750 pharmacy students and 1000 pharmacy clienteles have been involved. In each case, we got the satisfaction of participants. The individuals must be pharmacy student or clienteles of pharmacies during the period of research doing. A standard questionnaire was designed by the use of Google form template, based on FIP guideline. Finally the results were statistically analyzed by the use of Excel software.

Results

We found that the **percentage** of acquiescence among the graduate students of pharmacy in different aspects of education, such as structure, context, process, effectiveness and output is not greater than 50%. The studies about patients' views also showed that the educational system does not meet the real needs of clienteles.

Conclusion

The results showed that modification of the context, structure and process of pharmacy education in Iran is necessary and inadvertence to it results in the saturation of job market and may lower the level of professional competence among the graduate students of pharmacy.

Keywords

Pharmacy Education, Quality Assurance, Job Market, Professional Competence

Considering Quality of Pharmaceutics and Pharmacognosy Presentation at Ahwaz Jundishapur University of Medical Sciences from the Students' Point of View, Using Questionnaire

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Introduction

Nowadays the quality assessment of academic lessons presentation is an important matter that taken into consideration in the world. According to conducted investigations, the current study is the first quality assessment of pharmacy lessons presentation in Iran that due to the 180 units comprehensive pharm D exam that will take place since 1398 is necessary to be carried out. The purpose of this study is the qualitative assessment of lessons presentation that have the highest number of questions in comprehensive pharmacy test, from the student point of view.

Methods

In this study, 80 Pharmacy students from Ahvaz Jundishapur University of Medical Sciences, the entries of 92, 93, 94 participated in the survey who had passed pharmaceutics, pharmacognosy, medicinal chemistry and drug therapy for diseases and were satisfied to take part in the study. The data gathering tools was the translation of a questionnaire from the Wisconsin-Madison University of America that the reliability and validity of that approved by Cronbach's Alpha Coefficient 0.95. Four areas consisted of course materials, students' engagement and involvement, course structure and general rating were questioned in the questionnaire by Likert scale.

Results

The total score of pharmaceutics was 52.70, pharmacognosy 56.23, medicinal chemistry 58.73, and drug therapy for diseases 61.03 of 100, that this difference was not statistically significant (p value>0.05).

About 59.46% of the students agreed with online presentation of pharmaceutics, these statistics for pharmacognosy, medicinal chemistry, and drug therapy for diseases were 50.00%, 41.89%, 28.37%, respectively.

Conclusion

Although, the results showed that there is no significant difference in the total scores of all the discussed lessons, the scores of the drug therapy for disease and medicinal chemistry were more than the pharmaceutics and pharmacognosy. The continuation of the study in the case of accordance with the results of this study will get accurate results by the country distribution of questionnaire that it will be provide the opportunity to improve the presentation of the discussed lessons in the areas of weakness.

Keywords

Presentation, Quality assessment, 180 unit comprehensive pharm D exam, Iran universities of medical sciences, Assessment using questionnaire

The evaluation of pharmacy space design; its effect on pharmacist and patient's attitude on the quality of pharmaceutical services

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Introduction

Does the patient consultation is accomplished in desirable form in pharmacies? The answer is diverse. However, it seems there are serious obstacles in this way. One of the major reasons of non-efficient counseling between the pharmacist and the patient is the inappropriate design of the physical space of the pharmacies. The main examples of this mis-design categorized as four cases: inappropriate design of the counseling counter, existence the glass barriers between the patient and pharmacist, absence of counseling room and waiting space of the pharmacy to preserve the patient's privacy. The aim of this study was to investigate the effect of these parameters on the viewpoint of pharmacists and patients about the quality of drug counseling services.

Methods

This descriptive-analytic study was conducted in two phases. At the first step the pharmacies were evaluated according to the four above mentioned physical parameters. The second step involved gathering the views of pharmacists and patients about the impact of the mentioned parameters on the quality of drug counseling and their satisfaction with these services. This phase was performed through filling of two separate questionnaires for two target populations groups (30 pharmacists and 90 patients). Data were analyzed using SPSS software and suitable statistical tests.

Results

The results showed that the perception of pharmacists toward the rate of consultation in pharmacies was more positive than patients, however, all two groups believed that consultation was happened incompletely. The results of statistical analysis showed that the quality of patient counseling was significantly depended to the pharmacy layout. The rate of patient counseling was higher in pharmacies lack of glass barrier in their counter design. Patients in pharmacies with more appropriate counseling and waiting area experienced more consultations from pharmacists. Higher height of counters was accomplished with poor counseling frequency. The two pharmacist and patient groups expressed similar opinions about the privacy concerns in current pharmacy layout. They are in agreement about the urgent need for creating a new design to preserve patient privacy along the consultation, but the exact form of this solution was not in agreement. The idea of isolate counseling room was not supported enough from patients and especially from pharmacists probably due to economic difficulties. It seems that rearrangement of current counter design may yield situation that solve that problem. The patients believed that higher height of counter causes negative effect on the possibility of consultation. However, pharmacists were in counterpoint. It seems that security concerns for pharmacists may be the reason. Similar pattern was observed in two groups about the need for glass barrier in consultation counter design. However, two groups believed that existence of glass barrier lead to difficulty in effective communication between patient and pharmacist.

Conclusion

With regard to these findings, there is a significant gap in pharmacy practice to implement correctly the patient counseling. Therefore it is necessary to change the pharmacy space in order to provide better services. These changes should be such that provide a safe, private, comfortable and direct access between the patient and pharmacist.

Keywords

Pharmaceutical Services, Counter Design, Consultation Room, Drug Counseling, Patient Counseling, Pharmacy Practice

The Physical, Microbial and Potency Investigation of Senna Syrups Available in Iran Pharmaceutical Market and Comparing with Iran Food and Drug Administration Standards

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Introduction
Herbal medicine and botanicals have an important role in health system and a prominent effect in the pharmaceutical market. The stability and potency testing is a critical study recommended by Regulatory agencies for assay the quality of physicochemical properties of the pharmaceutical formulation of the herbal finish products. It could be affected by a series of environmental factors such as temperature, humidity, and light. On the other hand, various products are available in the pharmaceutical market as laxative herbal remedies, among them Senna -products are popular. In the present study, we investigated the physical, microbial and potency of Senna syrups available in Iran pharmaceutical market and compared it with Iran Food and Drug Administration standards (IFDA).

Methods
In this study, we randomly collected senna laxative syrup samples from four different climate zones of Iran for post-marketing potency stability tests. Also, we collected new batches from pharmaceutical distribution companies for the accelerated stability tests. The accelerated test was performed in the germinator in 40°C temperature and 70% humidity,and the batches were assayed in 0, 1, 3 and 6-month duration. All batches were subjected to stability phytochemical tests including determination amount of total sennosides by UV spectrophotometry method (515nm), pH, viscosity, specific gravity, taste, odor and color. BTW, the microbial stability test was done by microbial limit test protocol. The results were analyzed by SPSS (v22) and compared with IFDA standards and the manufacturer's claim.

Results
In this study, 157 samples from four herbal companies were successfully tested. The results of the determination of total sennosides were critically different from the manufacturer's claim and IFDA standards. So, the total sennosides content in each sample of the four company was less than 80% of the standard level. Other tests related to physical characteristics such as odor, taste, and color were in the standard range. The mean of pH value of all samples was in 4.85-5.47 rang. The mean of the specific gravity of the four company samples were 1.055, 1.0090, 10075, 1.0040, respectively. Also, the mean of the viscosity of the four company samples calculated18, 42, 38, and 25 cps, respectively. The results of the microbial limit test showed all samples were sterile.

Conclusion
Sennosides percentage decreased in the sample which may indicate a formulation instability. The results of the specimens in the germinator were in accordance with the results of the specimens collected from different climatic ratios, except for the results of the measurement of sennoside which indicates its destruction under the conditions in the germinator and according to the data obtained is less than 80% of standard.

Keywords: Anthraquinone, Climate zone, Laxative herbal syrup, Sennosides, Stability, UV spectroscopy.

Preparation and Evaluation of Stomach-Floated Tablet of Clarithromycin

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Preparation and Evaluation of Stomach-Floated Tablet of Clarithromycin

Introduction

Helicobacter pylori is a very important pathogen colonized in the stomach of about 50% of the world's population. It is known to be the cause of gastric ulcer in 10% of these individuals and gastric carcinoma in 1% of them. One effective regime for treating this infection is the threefold medicinal regime comprised of omeprazole, amoxicillin and clarithromycin. Keeping the drug concentration constant during treatment sessions, delivery of more drugs to the impacted site and the need for increasing the patient's compliance are amongst the advantages of using gastric systems inhibiting the drugs of this threefold medicinal regime. The present study aimed at designing and investigating the floating drug systems in the stomach based on solid lipid microparticles of clarithromycin.

Methods

To this end**,** four lipid microparticles` formulations were made using solvent evaporation and melt dispersion in various amounts of HPMC, ethanol, propylene glycol, cetyl alcohol and stearic acid. In F4 formulation, microparticles were mixed with two lactose and mannitol cryoprotectants in two different levels and subjected to freeze drying. The four formulations were examined in terms of their extents of the trapped drug, drug release, Carr index and Hausner's ratio using FTIR spectroscopy and particles' morphology test based on SEM images. These four formulations were mixed with carbopol and tablets' manufacturing process was conducted on them so that four tablet formulations were obtained. The obtained tablets were also evaluated in terms of delay in floating time, total floating time and drug release method.

Results

The rate of drug trapping by microparticles was in a range between 33.63% and 76.27%. Hausner ratio of the lyophilized microparticles was between 16.4 and 32.7 and their Carr index was calculated between 1.19 and 1.49. FTIR spectroscopy did not show any interference between the used materials. The delay in tablets` floating was found 1s and their total floating time was in the range between 2 to over 24 hours. In both microparticles and tablets, all of the drugs were released up to 72 hours with the difference being that the releasing pace was a lot slower in the tablets.

Conclusion

The stomach-floated formulation studied in the present study was a drug-delivery system appropriate for the delivery of clarithromycin in patients with gastric ulcer. Having kept the drug's concentration relatively fixed, this system could reserve a favorable position in treatment through delivering a proper concentration of drugs to the impacted site and increasing the patient's compliance.

Keywords:

Clarithromycin, Helicobacter pylori, Stomach-floated tablets, Solid lipid microparticles

Pharmaceutical Care in Community Pharmacies: definition to implementation

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Introduction

The profession of pharmacy has been integral to the delivery of drug therapy to patients since its inception, yet pharmacists commonly have been dissociated from the use, evaluation, and monitoring of drug therapy. The widely cited reports of the Institute of Medicine articulate an increased awareness of a lack of continuity of care and associated challenges for the provision of health care. Society has experienced an increase in adverse drug reactions and drug costs, which has prompted a call for an enhanced role for pharmacists in ensuring effective drug use and patient safety. The aim of the present study was 1) to describe the provision of pharmaceutical care in community pharmacies in different countries, 2) to present a set of standard and international quality indicators for community pharmacies.

Methods

A literature review of reports on pharmaceutical care in community pharmacies was conducted. Search terms used alone and in combination included “patient care” and “pharmacy practice”. The reference lists of each publication were reviewed to identify additional information.

Results

In 1990, first useful definition of pharmaceutical car has been published which defines pharmaceutical care as the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient’s quality of life. Most European countries have used this definition in their approach to pharmaceutical care. Some Europeans have tried to clarify the definition of pharmaceutical care. During a symposium in the Netherlands in 2003, pharmaceutical care was regarded more or less as “pharmacists being nice to the patient”.

The U.S. government has begun to formulate a plan for the Medicare population through medication therapy management services since 2003. In this system pharmaceutical care is defined as “a patient-centered practice” in which the practitioner assumes responsibility for a patient’s drug-related needs.

Several practice-management barriers have prohibited the widespread adoption and implementation of pharmaceutical care practices in the community. The physical organization and workflow of community pharmacies, the shortage of pharmacists and other resources, educational weakness of pharmacy students, and the lack of a standard payment mechanism for pharmacist–patient care services and targeted pharmacist–patient care training are examples of these barriers.

Various quality indicator including patient counseling, medication therapy review, motivational interviewing, disease management, patient education, documentation and follow-up have been introduced throughout the publications.

Conclusion

Implementation of new pharmaceutical care definition has required long term, systematic, and well-coordinated actions in countries. Future services will seek to promote the quality use of medications and medication therapy review, personal medication record, Medication-related action plan, intervention and/or referral, documentation and follow-up are considered core elements in pharmacy practice.

Although journal publications about pharmacy education suggest that there is increased attention to patient communication and other pharmaceutical care skills, only a few international publications can be found about adaptation of the curricula.

Keywords Community pharmacies, Pharmaceutical care, Quality improvement, Quality indicators

The Analysis of Rate of Tendency and Knowledge about Entrepreneurship in Pharmacy Students of Kermanshah University of Medical Sciences

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Introduction

Health entrepreneurship is one of the important challenges facing medical education system and also pharmaceutical industry. The purpose of this study was examination of tendency and knowledge of pharmacy students about entrepreneurship in Kermanshah university of medical sciences in July 2018.

Methods

50 pharmacy students of first year (semester 2) were examined in this study. The purpose was scanning student's tendency with entrepreneurship in 1 question and their knowledge about entrepreneurship in 43 questions classified in 6 domains. Data was gathered by a questionnaire which designed by authors. The validity approved by experts and reliability verified by cronbach's alpha index. Data analyzed using the software SPSS.25.

Results

Student's tendency was relatively high (60.66%) but their knowledge was relatively low (16%). The tendency in "Khodgardan" students was the most and the tendency in "Ta'hod-e khedmat" was the least.

Conclusion

Student's tendency for entrepreneurship is relatively good, but their knowledge is so weak. It is necessary to take steps to increase their knowledge of entrepreneurship.

Keywords

Enterpreneurship, Medical education, pharmacy, Kermanshah, Business ecosystem

Educational Games: A New Approach to Pharmacy Education

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Introduction

Serious game that goes beyond entertainment can provide students with a deep learning and epistemological learning that may not be achieved with traditional teaching techniques. Serious and educational games provide a safe environment for students to experience any negative consequences of their actions. However, little is known about students' interest in gaming and the variety of serious games to teach. The purpose of this study was to evaluate the effectiveness of educational games in pharmacy education and to determine the types of play that students would like to play in a pharmacy.

Methods

We researched and reviewed the research provided on overseas educational games in reputable databases such as PubMed.

Results

According to the articles reviewed, on the use of technology to increase educational productivity, it is better to use new media technologies and video games. If playing is fun or helping to develop skills in patient interactions, it can play a better role in education. About the interest of pharmacy students between the different types of games and different aspects of the game, the majority were interested in serious pharmacy and apprenticeship games. The most popular game rewards system was the unlock mechanism and experience-based scoring. The perspective and perspective of the 3D game were more popular than the two-dimensional perspective.

Conclusion

According to the results of this study, the use of technology and educational games can have a positive impact on the quality of learning and pharmacy education, and it is suggested to use them as an educational aid program.

Keywords

Education, Educational game, Game design, Pharmacy-related educational game, Serious game.

Preparation and Characterization of Sustained Release Scaffold Containing Tetracycline in Periodontal Infections

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Introduction

Periodontitis is a chronic inflammatory disease that affects the integrity of the supporting tissues of the tooth, including the gingiva, periodontal ligament and alveolar bone, which are generally known as the periodontium. The local delivery of antibiotics offers the potential for reaching and maintaining the therapeutic concentration at the site of the infection; since in this method drug is directly applied to the site, the concentration of the drug can be significantly higher than the systemic ones. Several degradable and non- degradable devices were developed for the delivery of antimicrobial agents into the periodontal pocket. In recent years, functional biomaterial research has been directed towards the development of improved scaffolds and novel drug delivery systems. The aim of this study was to develop a local delivery device, Sodium Alginate/CMCNa/ Adipic acid dihydrazide (NaAlg/CMCNa/ADH) scaffold, which allows the sustained release of tetracycline to effectively control local infection in periodontitis.

Methods

In the present work, NaAlg/CMCNa/ADH scaffold synthesized by freeze-drying 2.5% polymer solution. Adipic acid dihydrazide (ADH) was added as crosslinker and N-(3-Dimethylaminopropyl)-N′-ethylcarbodiimide hydrochloride (EDC) and 1-Hydroxybenzotriazole hydrate (HOBt) were added as Carboxyl group activator. Then dialysis was performed for 3 days against distilled water. In order to drying, the gel was poured into plates and lyophilized at -45 ° C for 24 hours. Then Samples were immersed in tetracycline solution vials for 48 hours in dark condition. The scaffolds were then dried by freeze-drying method for 24 hours. Finally, the scaffolds were evaluated by SEM, FTIR, ^{1}H NMR, Swelling test, and TG/DTA. The amount of tetracycline released from the scaffolds was analyzed by spectrophotometry in PBS solution. Triplicate experiments were performed for each sample and expressed as means± standard deviation.

Results

The synthesized scaffolds had porous structure according to SEM images and in the scaffolds containing tetracycline the porous macrostructure was intact. In the FTIR spectra of NaAlg/CMCNa/ADH scaffold, the shoulder was seen at 1645 cm^{-1} Which indicates the formation of amide bond. The average water uptake of scaffolds was 93.216% ± 4.419. Scaffolds loaded by tetracycline showed sustained release pattern and were able to release 68% of drug up to 72 hours (figure1).

Conclusion

The NaAlg/CMCNa/ADH scaffolds could be beneficial in the management of periodontal infections and were suitable as a slow-release device for tetracycline.

Keywords

Periodontitis, Scaffold, Sodium Alginate, Tetracycline, CMCNa, Local drug delivery

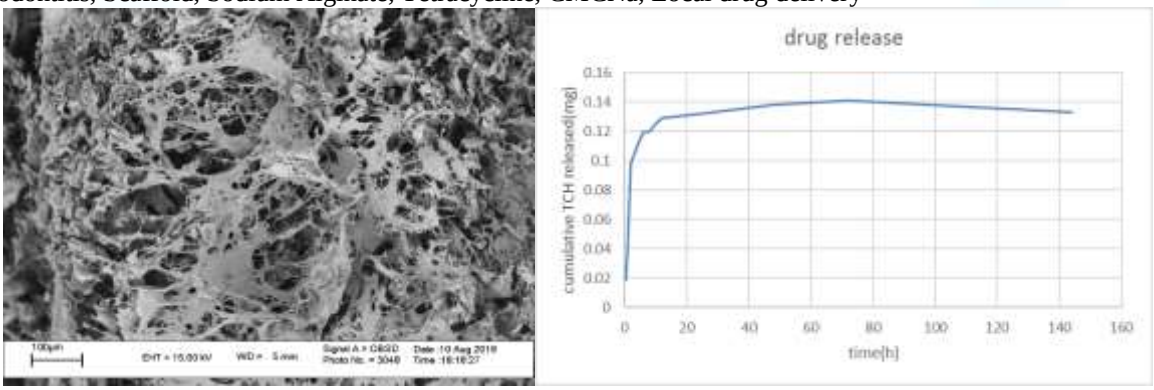

Figure1. SEM image of scaffolds containing tetracycline and drug release pattern

Synthesis and Cytotoxicity Evaluation of *N*-(5-Mercapto-4*H*-1,2,4-triazol-3-yl) benzamide Erivatives as Potential Anticancer Agents

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Introduction

Cancer is a major global problem and is the second leading cause of mortality in developed countries. Resistance to current chemotherapeutics and high incidence of adverse effects are two principal reasons for developing new anticancer agents. In the current research, we focused on synthesis of 1, 2, 4-triazole derivatives and assessed their cytotoxic effect against cancerous cell lines.

Methods

According to the following scheme, 5-amino-4H-1, 2, 4-triazole-3-thiol (2) was treated with various benzoic acid derivatives (1a-1l) in the presence of dicyclohexylcarbodiimide (DCC) and hydroxybenzotriazole (HOBt) in THF to achieve the final compounds (3a-3l). Besides, MTT assay was also carried out to investigate the cytotoxicity. Activation of caspases 3, 8 and 9 was also performed to explore the apoptosis induction capability.

Results

All synthesized compounds (3a-3l) were characterized by NMR, IR and MS spectroscopic methods. Cytotoxicity was also evaluated against three cancerous cell lines. The most of tested derivatives rendered significant cytotoxic activity in MTT assay.

Conclusion

The naphthalimide incorporated 1, 2, 4-triazole residue demonstrated remarkable activity against cancerous cells. Anticancer activity of these compounds (3a-3l) was investigated using MTT assay against PC3, A780, PC12 cell lines. According to the Obtained data from MTT test, o-Cl, m-Cl, p-Cl, o-F, p-F, p-NO2 and p-OMe had better anticancer activity against PC12 compared to A2780 and PC3 cell lines. Also, these derivatives also activated the caspases pathway.

Keywords: Anticancer, Cytotoxicity, MTT assay, Synthesis, Triazole.

Preparation and Characterization of Propolis-loaded Solid Lipid Nanoparticles : Potential for Topical Delivery

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Introduction
Propolis is a natural resinous product that obtained by honeybees. The aim of this study was formulation and characterization of propolis-loaded solid lipid nanoparticles (SLN) intended for topical delivery.
Methods
The prepared SLN were composed of glyceryl monostearate (GMS), soy lecithin, tween 80 and poly ethylene glycol 400 (PEG 400), fabricated by solvent emulsification-evaporation technique. The impact of various variables including concentration ratios of GMS/ soy lecithin and PEG400/ tween 80 along with emulsification time were evaluated on the size, polydispersity index and zeta potential of particles. SLN formulations were optimized using Box-Behnken response surface methodology. The particles were freeze dried and morphologically studied by scanning electron microscopy and finally, *in vitro* release profile of propolis entrapped in optimized nanoparticles was investigated.
Results
The obtained results revealed that solid lipid nanoparticles could be regarded as an appropriate colloidal carrier system for topical delivery of propolis through the skin.
Conclusion
The mean particle size, polydispersity index, zeta potential, entrapment efficiency and loading efficiency for optimized propolis-loaded SLN were found to be 122.6±22.36 nm, 0.28±0.06, 26.18±3.3 mV, 73.57±0.86% and 3.29±0.27% respectively. SEM images showed non-aggregated, spherical nanoparticles. The *in vitro* release study revealed prolonged and sustained release of propolis from nanoparticles.
Keywords
Box-Behnken response surface methodology, Propolis, Solid Lipid Nanoparticles (SLN), Solvent emulsification-evaporation method, Topical delivery