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The 2nd Euro-Asian Congress of Pharmacoepidemiology: Non-Communicable Diseases as a Threat to Sustainable Development

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Editorial Note

The 2nd Euro-Asian congress of pharmacoepidemiology (EAPEC 2019) was held in Tehran, Iran, November 13rd–15th, 2019[1]. The congress was organized by the school of pharmacy of Shahid Beheshti University of Medical Sciences (SMBU), and supported by Iran Food and Drug Administration (IFDA) as well as a number of medical universities, research centers, and pharmaceutical companies (1).

Broadly speaking, pharmacoepidemiology is the science of the utilization, efficiency, and safety of drugs and even their economic impacts on large populations (2). Although pre-market studies often assure us about the safety and efficiency of drugs, post-market studies including pharmacoepidemiological ones suggest otherwise.

Apart from providing an estimate of the beneficial and adverse effects of medicines in the real world, pharmacoepidemiological studies can give us an insight into the utilization profiles and economic impacts of medicines. Little wonder pharmacoepidemiology is often a multidisciplinary science crossing clinical pharmacology, epidemiology, pharmacoeconomics, and outcomes research. Pharmacoepidemiological findings can benefit different groups of people in the healthcare system. On the micro level, physicians stand to benefit from such findings in the sense that they can use such data to protect their patients against medication-related problems such as medication errors and adverse drug reactions. On the macro level, policy makers can also exploit these data to make better-informed decisions.

According to the 2030 agenda for sustainable development goals (SDG), Non-Communicable Diseases (NCDs) are considered a formidable challenge to sustainable development, and governments committed to developing policies to reduce premature mortality resulting from NCDs by a third by 2030 through prevention and treatment, as number 3.4 target in SDG (3), have to address this challenge. Against this backdrop, the 2nd Euro-Asian Congress of Pharmacoepidemiology focused on non-communicable diseases as its main theme and addressed the issue from different perspectives.

Pharmacoepidemiology of NCDs was discussed in several expert panels in the congress. Among others, Pharmacovigilance of medicines for non-communicable diseases, post-marketing studies of medicines for non-communicable diseases, application of pharmacoepidemiology in pharmacoeconomics, and policy making in non-communicable diseases based on pharmacoepidemiological evidences were the main topics raised and discussed by the panelists. The keynote speakers also talked about the pharmacoepidemiology of non-communicable diseases in the

pharmacoepidemiology of cancers, diabetes, and medication-induced liver injuries in Iran. Afterwards, the national action plan for the control and Prevention of non-communicable diseases in Iran was discussed at great length. The latest trends in healthcare were also discussed in the congress, with big data, real world evidences, and digital transformation in health attracting the most attention.

The International Society of Pharmacoeconomics (ISPOR) released the top ten trends of Pharmacoeconomics and research outcomes in 2019. The trends include drug spending and pricing, going beyond universal health coverage, real-world evidence, aging population, pricing transparency, big data, value assessment, decision-making in low-income countries, personalizing medicines, and unhealthy behavior (4). Some of these trends such as the use of big data analysis for improving healthcare were discussed in the main plenary session and in some workshops.

This scientific event (EAPEC 2019) was officially opened by Dr. Mohammad-Reza Shanesaz, the President of IFDA, and Professor Ali-Reza Zali, the Chancellor for Shahid Beheshti University of Medical Sciences and the congress chairman. This 3-day long congress featured keynote speakers from Switzerland, Sweden, Iran, the United States, and the Netherlands.

According to a report released by Dr. Farzad Peiravian, the scientific secretary of the congress, 74 abstracts, out of a total 100 received abstracts, were accepted after being peer-reviewed by the scientific committee consisting of 40 faculty members of medical universities in Iran. Seventy of them were presented as posters and four orally on the third day of the congress. Apart from the scientific committee members, over sixty pharmacy students, PhD students in pharmacoeconomics and pharma management, and PhD students in clinical pharmacy had volunteered to contribute to the running of the congress, with Dr. Nazila Yousefi serving as the executive secretary of the congress.

In the final statement of the congress, all stakeholders promised to promote education and research in the Pharmacoepidemiological science in Iran. Moreover, IFDA committed itself to promoting Iran's Pharmacoepidemiology network to ensure the efficiency, safety, and affordability of drugs. Lastly, in the closing ceremony, Isfahan University of Medical Sciences, Isfahan, Iran, was chosen to host the 3rd congress of the Euro-Asian Congress of Pharmacoepidemiology in 2020.

You can follow the bellow to review the papers abstracts accepted in EAPEC 2019.

Reference

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Citation

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Evaluation of Intrapleural Chemotherapy with Cisplatin in Iranian Cancer Patients with Malignant Pleural Effusion

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Abstract [16] : Background: Malignant pleural effusion is a common problem in patients with advanced malignancies and compromised the short-lived survival of these patients. These effusions can be resistant to the treatment such as systemic chemotherapy, pleurodesis with sclerosant agents and recurrent drainage. Therefore, new therapeutic options are needed. The purpose of this study was to evaluate the effectiveness of intrapleural chemotherapy with Cisplatin for the management of MPE in lung, breast and mesothelioma cancers. Materials and methods: Twenty-one cancer patients with MPE were enrolled in this study. Cisplatin was injected through a catheter at a dose of 30mg /m2, and this procedure was performed 3 times at intervals of two weeks. Patients were evaluated for side effects and responses to the treatment every two weeks and one month after the last treatment. Results: Among the assessable 18 patients, complete response and partial response were 9 (50%) and 4 (22.2%) patients, respectively (overall response rate 72.2%). Dyspnea was improved in 13 (72.2%) patients and had no change in 5 (27.8%) patients. One patient did not refer after the first intrapleural injection. Also, two patients died during the study. None of the patients had side effects of grade 3 and 4. Conclusion: The results of this trial study showed that using Intrapleural Chemotherapy with cisplatin in the management of patients with MPE in lung, breast and mesothelioma cancers is effective and safe.
keywords : Malignant pleural effusion, Intrapleural chemotherapy, Cisplatin, ,

Knowledge, Attitude and Performance toward Treatment among Patients with Chronic Kidney Diseases: The Impact of Medication Therapy Management

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Abstract [93] : Introduction: Chronic kidney disease lead to taking many medication and is mostly due to underlying diseases such as diabetes and hypertension. Patients usually receive a lot of medications for their problems, and the use of multiple drugs is a major challenge in these patients. Hence the recognition of their knowledge, practices, and attitudes toward their medications is of great importance to optimize their health benefits. Methods: In this descriptive study, several meeting were held by experts, including clinical pharmacists, pharmaceutical economy pharmacists, and general pharmacists. The experts developed the first draft of the questionnaire based on their comments and previous published articles. The draft was modified after several sessions, and the questionnaire validity and reliability were calculated. SPSS software version 23 was used to analyze the data. Then 100 patients with chronic renal failure referring to Labafi Nezhad Hospital received pharmacy-based training to optimize their use of medicines. Before and after the study, the participants' knowledge, attitude, performance, andmedication compliance rate were measured using the questionnaire. Results: The mean values of total knowledge before and after the intervention was 5.98 ± 2.86 and 12.27 ± 2.19, respectively (P value <0.0001) . The total mean value of attitude before the intervention was 12.80 ± 1.27 and the total mean value of attitude after the intervention was 13.93 ± 1.12 (P value <0.0001). The total mean values of performance before and after the intervention were 14.88 ± 1.97 and 29.1 ± 16.90, respectively (P value <0.0001) . The total mean of adherence compliance rate before the intervention was 12.15 ± 4.99 and the total mean of this rate value after the intervention was 15.56 ± 3.49 (P value <0.0001). Discussion: The results of the present study showed that pharmacy-based training improves the level of knowledge, attitude, performance and diet compliance in patients with chronic renal failure, which can lead to more effective treatment and less treatment complications.

keywords : Albumin, Drug Usage Evaluation, Rational Drug Usage, Clinical Pharmacy,

Pharmacist-Physician Organic Cooperation is an effective strategy to reduce the Medication Related Problems (MRPs): An experience in Chronic Kidney disease (CKD) patients

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abstract [92] : Background: As almost all patients with chronic kidney disease (CKD) having the criteria of polypharmacy with a complex protocol. It has been evidenced that CKD patients averagely take 10 medications concurrently. Also, several physicians are involved in the patients' care independently. Hence, the risk of Medication/Drug-Related Problems (MRPs) increases. Regarding abovementioned explanations, it is necessary to detect and solve MRPs effectively. Among studied strategies, pharmacist-led medication therapy management (MTM) services showed some satisfying results. The aim of this study was to evaluate Pharmacist- Physician Organic Cooperation to managing the MRPs in patients with CKD. Methods: An educated pharmacist and a nephrologist jointly visited the CKD patients referring to CKD outpatient clinic of Shahid Labbafinejad hospital. This clinic is one of the most known referral nephrology medical centers in Iran. Totally, 100 CKD patients who referred for a routine medical visit participated in this study after signing the informed consent form. The pharmacist reviewed the medications in the first visit and MRPs detected and classified them according to DOCUMENT system. The pharmacist notified the physician about existing MRPs and discussed to solve or consider them. Results: 64% of patients had not any MRPs, 25% had one MRP, 6% had two MRPs, and 5% had three MRPs in their medication review. The pharmacist and physician came to an agreement regarding MRPs solving in 90.38% of pharmacist recommendation on detected MRPs. Discussion: The findings of this study suggest that the close cooperation of pharmacist and physician has good efficacy to decrease the MRPs in CKD patients. The main advantages of this method are direct and evidence-based organic cooperation with a physician. This method may enhance physician compliance regarding pharmacist recommendation in comparison with traditional written methods. Although this method is time-consuming, the final outcomes reduce the MRPs and health-related costs. Also, the outcome may be a better and more effective individualized treatment. Promising results of the current study suggest close organic cooperation and consultation of pharmacist with a physician in CKD clinics.

keywords : Pharmacist, MRPs, CKD, ,

Investigating the role of pharmacist in rationalizing the administration of injectable proton pump inhibitor drugs in an educational hospital

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abstract [57] : Introduction: Intravenous Pantoprazole is one of most commonly used drugs in inpatient setting of hospitals. Inappropriate use of this drug imposes a high cost on the patient and health system as well as complications such as clostridium difficile, pneumonia, osteoporosis and hypomagnesemia. Pharmacovigilance and rationalizing drug use have been defined as the main tasks of clinical pharmacist. Imam Hussein pharmacovigilance department has decided to intervene in the process of drug utilization through the stress ulcer prophylaxis (SUP) guideline to modify the pattern of PPI use. Methods: This cross sectional study has been done between January to July 2017 in a teaching hospital affiliated to Shahid Beheshti Medical University, Tehran, Iran. In this study using international protocols, guideline for IV pantoprazole was developed and approved by gastroenterology and clinical pharmacy specialists. Prospective audit and feedback for patients receiving IV pantoprazole based on pre-designed SUP guideline done by a trained pharmacy student. SPSS ver. 20 was used for statistical analysis. Results & Discussion: In total 446 patients received IV pantoprazole during study period 78.25% of prescription was out of guideline. The physician in charge accepted feedbacks in 63.89% of patients which led to 8.3% vials decrease in consumption of IV pantoprazole compared to same period of time. The highest percentage of reduction in IV Pantoprazole prescription was observed in the surgery ward (37.39%; p=0.01), while this reduction was not statistically significant in other investigated wards (p>0.05). In addition, the highest percentage of acceptance of pharmacist`s recommendation was related to the neurosurgery ward (90%). The percentage of recommendation acceptance in other wards was related to the internal ward (72.9%), surgery ward (66.03%) and neurology ward (52.9%), respectively. Conclusion: Although, the implementation of the guideline lead to overall reduction in the administration of IV pantoprazole, however by passing the time of implementing the guideline, a decline in its effectiveness was observed. This conclusion emphasizes the importance of continuous monitoring of the IV pantoprazole prescriptions.

keywords : IV Pantoprazole, Pneumonia, Hypomagnesemia, Clinical pharmacist,

Knowledge, attitude and practice of pharmacists employed in Tehran pharmacies regarding calcium and vitamin D supplements. A Simulation Based Study in Iran

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abstract [106] : Introduction Vitamin D deficiency is considered to be one of the most common nutritional diseases worldwide, particularly in Iran based on the coverage of peoples and limited exposure to natural sunlight especially in urban areas, the Iranian people were strongly encouraged to take vitamin D supplements. There are several reports regarding vitamin D toxicity after long term consumption of vitamin D inappropriately.it is the first published alarm for health professionals in Iran. These necessitate prompt, improvement in the knowledge and skills of pharmacists about Vitamin D and calcium supplements to practice professionally toward better clinical judgment. In this regard, the present study was designed and implemented to investigate a valid questionnaire and to determine the knowledge, attitude and practice (KAP) of pharmacists working in community pharmacies of Tehran about calcium and vitamin D supplements. Methods this study is a cross-sectional KAP survey in Oct 2018. A data gathering questionnaire consisting 3 parts of demographic information, as well as attitude, and knowledge of pharmacists was developed. Validity of the questionnaires was checked by expert faculty pharmacists and confirmed after corrections. The knowledge and attitude section of the questionnaire was completed by 200 pharmacists who participated in the continuous education programs and a simulated patient method was used to determine the practice of the pharmacists. For this purpose, the scenario and relevant questions were designed as a logical algorithm. After collecting the data, statistical analysis of the data was performed using appropriate statistical tests applying SPSS 21.0 software. In all statistical tests, the significance level was considered as $p < 0.05$. Results Overall 200 pharmacists including 66 males (33%) and 134 females (67%) with a mean ± SD age of 38.30 ± 12.21 years and work experience of 11.99 ± 10.70 years. The score for knowledge and practice were 10.46 ± 3.15 (out of 20) and 18.96 ± 9.93 (out of 100) , respectively. Pharmacists had a positive attitude regarding sufficient knowledge about supplements, also they had positive attitude for their independent judgment regarding administration of supplements (99.49%) , the recommendation of a supplement by pharmacists (64.31%) and the necessity of regular administration calcium supplements and vitamin D in the elderly (81.72%). Conclusion Our results show that the levels of knowledge were moderate and the practice scores were poor. it is necessary to plan the essential training courses for pharmacists and to improve their knowledge and skills in this regard.

keywords : Knowledge, Attitude, Practice, supplements, vitamin D

Evaluating the effect of Saccharomyces Boulardii as an add on therapy in children with concurrent Inflammatory Bowel Disease and Irritable Bowel Syndrome

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abstract [177] : Introduction: Irritable bowel syndrome (IBS) is a common disorder that affects the large intestine. Whereas inflammatory bowel disease (IBD) is an inflammatory disease, it could be divided in two major type, the ulcerative colitis (UC) and Crohn`s disease (CD). In addition to the signs and symptoms similarities that these two diseases have, they also have some pathophysiological similarities. Despite various unknown aspects, fecal calprotectin is one mostly used biomarkers in diagnosis and follow up of IBD. There are some evidences that calprotectin levels are normal in IBS and could be used to distinguish IBS from active IBD. The combination of these two disorders causes patients to have to take more medications. On the other hand, their quality of life is also reduced and some mental disorders. Due to the limited therapeutic effects and side effects of pharmacologic treatment, interest in the use of probiotics as a therapeutic agent has increased. Probiotics are living microorganisms that administered in controlled amounts could benefit the host. Saccharomyces Boulardii is a yeast which is used in IBS and also is used as a medication for treatment and prevention of various types of diarrhea in children and adults. The aim of this study was to investigate the effectiveness of yeast S. boulardii as a treatment option in concurrency of IBS and IBD. Material and Methods: This triple blind placebo controlled clinical trial was done in 2017 in Mofid Children educational hospital, Tehran, Iran. 42 patients who aged less than 16 years old with mild to moderate IBD in concurrency with IBS were selected. The patients were divided into two groups, control group and case group. Case group received S.boulardii capsules twice daily for eight weeks. Each capsule contained 250 milligrams of Saccharomyces boulardii yeast. Also, the control group received placebo capsules (which were filled by Avicel® and had the same shape and color) in the same regimen. At the beginning and the end of the study, fecal calprotectin, abdominal pain and quality of life were evaluated. Abdominal pain was investigated by Visual Analog Scale (VAS score) and quality of life was examined by IMPACT III questionnaire. The statistical analysis of the findings was done by SPSS software V. 25. Results: In our study 42 patients were participated and divided into two equal group. At the end 38 patients excluded. There were no significant differences in the sex ratio and age. According to the result there was a decline in Calprotectin throughout the treatment period in case group (P value=0.000) but in control group there were no significant changes in Calprotectin (P value=0.332). And finally total score of the IMPACT III questionnaire that we used in this study was improved significantly in case group (P value=0.003).The differences of baseline and endpoint score of pain severity between two groups suggested significant differences between two groups (P<0.05). Conclusion: Probiotics are live microorganisms, which when administered in adequate amounts, confer a health benefit on the host. The use of S. boulardii as a therapeutic probiotic is supported by its mechanisms of action, pharmacokinetics, and efficacy from animal models and clinical trials. Hence, it can be used as an effective agent in concurrency of IBS and IBD to decreases the annoying symptoms.

keywords : Crohn`s disease, Saccharomyces boulardii, Inflammatory bowel disease, Ulcerative colitis,

Role of Educated Pharmacists in Detection and Reducing of Medication Errors at the Outpatient Chemotherapy Department of Imam Khomeini Hospital Complex, a Teaching Hospital

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Abstract [109] : Introduction Chemotherapy medication errors cause a potentially serious risk of patient harm, and occur at all stages of the medication use process (1). In an effort to prevent these errors, we are seeking to identify the different types of errors and their sources, while at the same time investigating the role of educated pharmacists and other medical personnel play in their reduction. Methods Every patients at admission time in the outpatient chemotherapy department were checked for chemotherapy regimen, dosing, intervals, lab data, chemotherapy preparation and other parameters by pharmacists. In any shift, 3 pharmacists were involved and supervised the admission and chemotherapy preparation. These pharmacists were educated and evaluated by pharmacotherapy department professors. All of the detected errors were documented in standard medication error forms. Collected data from September 2017 to June 2018 were analyzed in this study. Result and Discussion A total of 489 errors were reported (Total number of orders=19240, Rate of errors = 0.025). Most of them were inappropriately prescribed doses (n=181, 37.01%). The majority of errors occurred by specialists/subspecialists (n=216, 41.22%). Human errors and working at peak hours were the first and second most prevalent causes of errors. Most errors occurred at the prescription (n=319, 65.23%) stage. In 79.30% of cases, errors were identified before drug administration. Pharmacists intervened in 480 errors and the rate of acceptance by specialists was high (405 cases, 82%). In fact, in 82% of cases, pharmacist could have prevented the medication errors. Given that pharmacists have greater knowledge and awareness about various medications and their indications, preparation and route of administration, they can play a critical role in the detection and reduction of medication errors and the harm it caused. Conclusion The presence of educated-pharmacists at the chemotherapy departments can influence detection and prevention of medication errors, and improve caring quality.

keywords : Chemotherapy, Medication error, hospital pharmacy, ,

An overview to Drug and Poison Information Center services within a referral center in North of Iran, 2018-2019

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abstract [151] : Drug and Poison Information Centers (DPICs) are healthcare associated units established with professionally trained team engaged in providing accurate and factual information about drugs and poisons. The purpose of this study is to report the services provided by a university hospital DPIC within a year. This study was conducted in Imam Khomeini Hospital in the north of Iran, during 20th of March 2018 to 20th of March 2019. Gender, age, and type of inquiries (e.g. drug identification, therapeutic use of drugs, adverse drug reactions, drug interactions, poisoning-related callers, etc) was recorded. The collected data was analysed using Microsoft Excel 2007. There was 143 calls during the study period . The highest number of questions were received in the fall of 2018 and the lowest were in the winter of 2019. Nurses asked more questions (44.8%) compared to other health-care team of Imam Khomeini hospital were on . The Majority of the people who asked questions were female (87, 60.84%). The most frequent questions were made by the individuals between 30-40 (66, 46,15%). Drug indication (26,95%), storage inquiries (12.1%) and adverse drug reactions (ADR) (10,64%) were the most frequent area asked by callers. The most widely used drug information resource to answer questions was UptoDate2018-2019 . (48.95%). Conclusion: Our study confirms that the healthcare team of hospital have many unmet drug information needs and DPIC services may improve the knowledge of different professions regarding the administration and rational use of drugs.

keywords : Drug Information Services, Epidemiology, Pharmacovigilance, ,

Child care products use-pattern: A national survey in Iran

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abstract [180] : Introduction: Child-care products have high usage in daily life; however, there is a little knowledge about use-patterns of them in childhood period. This study was aimed to evaluate the rate and frequency of use, brand loyalty, tendency to scented or unscented products, choosing place of purchase and preferences in selecting domestic or foreign products used for children. Method: Use-patterns of 47 kinds of products such as shampoo, sunscreen, toothpaste, moisturizer, and insect repellant were investigated in 1730 households in eight cities of Iran based on Cochrane sampling by means of a validated questionnaire. The data was analyzed with SPSS24 regarding age, sex, parent-education, number of children in families, total household expenses, and ethnicity of the population. Result and discussion: This study provides significant information about child-care products usage-patterns based on socio-demographic strata. The response rate to questionnaires was 85%. Also, 52.3% of respondents had a girl child and 53.6% of them had children between 2-8 years old. Based on One-Way ANOVA test with a significant p-value<0.05, hair and body shampoo, toothpaste with strawberry taste, anti-diaper rash cream, and sunscreen were the most frequent products used. In addition, toothpaste and hair shampoo with a consumption amount of 357 and 298 grams per year per capita had the highest usage rate, respectively. On the other hand, in all products, people prefer to buy domestic over foreign products, Firooz and Golrang being most favored brands. In addition, pharmacies are the most favored place of purchase by consumers. Moreover, child-care products made 6% of overall household expenditures. Conclusion: This is the first study providing usage pattern of child-care products in Iran. Considering the wide usage of such products, their impact on children health, and the consumer's preferences, companies and health authorities can take advantage of these results to develop strategies and regulations to optimize use-patterns.

keywords : child care, use pattern, household survey, expenditure, Iran

Comparison of ECF, DCF, FOLFOX and FLOT regimens as perioperative treatment among patient with resectable signet ring cell gastric cancer

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abstract [204] : Introduction: signet-ring cell carcinoma (SRCC) is considered as a poor prognosis and chemoresistance type of gastric cancer. Although SRCC has a low survival rate, perioperative chemotherapy has shown advantages on overall and progression-free survival and progression-free survival of the patient with resectable SRCC gastric cancer. However, the best chemotherapy approach in this setting is not established yet. We aim to evaluate the effect of 4 common perioperative chemotherapy regimens which use in SRCC gastric cancer treatment. Method: A total of 41 patients from July 2015 until 2019 were enrolled in this retrospective study. Patients had documented evidence of signet-ring cell carcinoma gastric cancer and received one of the perioperative chemotherapy regimens including FOLFOX (n=7), DCF (13), ECF (n=9) and FLOT (12). The primary endpoints were overall response rate based on RECIST criteria and R0 resection rate. In addition, overall survival and progression-free survival, and toxicity were considered as a secondary endpoint, which was estimated by Kaplan-Meier curves and Cox regression for multivariate analysis. Toxicity was evaluated according to CTCAE v4. 0 criteria. Result: mean age of patients was 55.37±11.64. The Overall response rate were shown 44.4% for ECF, 61.5% for DCF, 42.9% for FOLFOX and 83.3% for FLOT regimen (p=0.137). The R0 resection rate was 55.6%, 62.9%, 57.1% and 75% for ECF, DCF, FOLFOX and FLOT regimen, respectively (P=0.579). The median PFS which were obtained from KM curve showed 7, 10, 14 and 18 months in ECF, DCF, FOLFOX, and FLOT groups, respectively (log-rank=0.387). The median overall survival was 15 months for the ECF regimen, 22 months for DCF regimen, 15 months for FOLFOX regimen and 26 months for FLOT regimen which was significantly higher in comparison to other regimens (log-rank=0.43). All groups showed acceptable toxicity, grade 3-4 neutropenia were 20.4%, 30.8%, and 14.3% in ECF, DCF, FOLOFX, and FLOT groups and mucositis22. 2%, 15,4%, 0%, 8.3% in ECF, DCF, FOLOFX and FLOT groups, respectively. Toxicity had no significant differences in both grades 3-4 neutropenia and Mucositis (P=0.303, P=0.461807). In multivariate analysis, the response rate was found to be an independent predictor of survival. Conclusion: all chemotherapy regimens were comparable in R0 resection rate, ORR, PFS, and toxicity. although, FLOT regimen associated with higher overall survival in SRCC gastric cancer. Therefore, we deduced FLOT regimen seems to be effective and safe as a preparative regimen in a patient with signet-ring cell carcinoma gastric cancer.

keywords : gastriccancer, signetring, , ,

Cost Saving Analysis of Pharmacists' Intervention in Chemotherapy Preparation Unit of Cancer Institute, Imam Khomeini Hospital,1396-97

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abstract [133] : OBJECTIVES: Cancer is one of the major causes of mortality and represents a significant burden of disease. Due to the complexity of chemotherapy regimens, medication errors can occur at any point from prescribing to administration. Today, pharmacists play an important role in rationalizing consumption and prescription of medicines for patients undergoing chemotherapy. Intervention of pharmacist, as one of the last members of the treatment team, can reduce Adverse Drug Events (ADEs) and ultimately save costs. This study estimated the cost–benefit ratio of pharmacist interventions over a year in chemotherapy preparation unit of a referral hospital in Iran in which annually about 10,000 cancer patients receive inpatient and outpatient care. METHODS: Pharmacist intervention records from Sep 2017 to Aug 2018 collected in a standard checklist in Cancer Institute, Tehran University of Medical Sciences, Iran. The clinical significance of interventions was rated by one oncologist and one clinical pharmacist according to Common Terminology Criteria for Adverse Event (CTCAE). Benefit was estimated through both cost avoidance based on the potential to avoid an ADE and cost savings related to reducing discarded products. Cost was estimated from the pharmacists` salary corresponding to the time spent in reviewing chemotherapy prescriptions. Finally, cost-benefit analysis was conducted. RESULTS: Among 18,450 cancer chemotherapy prescriptions, 559 interventions were applied. Most cases of interventions were related to dosage adjustment of the prescribed dosage (36.4%). 78% of the interventions were considered as clinically more than significant. The cost-benefit analysis showed a clear cost benefit with a cost-benefit ratio of [2.4-18.2]:1 (depends on the significance of the interventions). CONCLUSION: Positive impact of pharmacists' interventions on the clinical and economic outcome of chemotherapy drugs was clearly demonstrated in this study. This service could reduce medication errors, preventable ADEs, and costs of both medications and potential ADEs

keywords : Pharmacists' interventions, pharmaceutical care services, , chemotherapy drugs, cost-benefit analysis,

The Effectiveness of the Cabergoline on Preventing the Progression of Prediabetes and Controlling the Insulin Resistance

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Abstract [64] : Introduction: Considering the more prolonged effect of the cabergoline in contrast to bromocriptine along with low complications and also the significance of the central pathway of the glucose metabolism, the high prevalence of obesity and having the metabolic syndrome, it was concluded to estimate the cabergoline effectiveness on preventing the progression of the prediabetes to the type II diabetes. Methods: Two-arm parallel randomized clinical trial was conducted with eighty patients. Patients were treated with the cabergoline for 16 weeks. In the first four weeks, patients received 0.25 mg oral cabergoline twice a week before sleeping, and after that, the cabergoline dosage was increased to 0.5 mg twice a week, and this dosage was continued for 12 weeks. Results and Discussion: cabergoline could significantly reduce the values of Fasting Plasma Glucose (FPG), and 2 h Plasma Glucose (2h-PG) in Oral Glucose Tolerance Tests (OGTT), Hemoglobin A1c (Hb-A1c), Cholesterol, low-density lipoproteins (LDL), 2h-Insulin, Homeostatic Model Assessment for Insulin Resistance (HOMA-IR), Insulin Sensitivity Indices (ISI) Cederholm, ISI Matsuda, and Quantitative Insulin-sensitivity Check Index (QUICKI) tests ($p<0.05$). Cabergoline did not have any significant effects on the anthropometric parameters including weight, BMI and waist circumference and also, other parameters including Fasting Insulin, High-density lipoproteins (HDL), Atherogenic Factor (LDL / HDL) and Homeostatic Model Assessment of β-cell function (HOMA-β) compared to placebo($p> 0.05$). In some of these cases, such as HDL, Fasting Insulin and Atherogenic Factor, the trend of the changes is in favor of the curative effects of cabergoline on the mentioned parameters ($p< 0.05$). Conclusion: Cabergoline can improve the biochemical factors of the glucose metabolism, and in some other parameters despite having no significant change, it prevented the exacerbation of the disease and led the trend parameter in favor of correcting that parameter.

keywords : Cabergoline, Prediabetes, Glucose metabolism, Fasting Plasma Glucose,

Evaluation of Safety and Efficacy of Inhaling Colistin in Patients with VAP: A Comprehensive Systematic Review

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abstract [111] : Introduction: The Incidence of VAP caused by Multidrug-resistant (MDR) gram-negative bacteria (GNB)—particularly Acinetobacter baumannii, Pseudomonas aeruginosa, and Klebsiella pneumonia—is increasing. Colistin (colistimethate sodium) is an essential polymyxin, which has favorable activity against MDR-GNB., The polycationic/hydrophilic structure of intravenous Colistin when administered through the intravenous route, limits its penetration in lung parenchyma and resulting in systemic toxicity. Therefore, conducting a systematic review to investigate published evidence regarding the safety and efficacy of inhaling Colistin has a clinical significance. Methods: PubMed, Scopus, Cochrane, and Embase databases were searched with MESH words of "Ventilator-associated pneumonia" or "VAP", and "Colistin" or "colistimethate sodium" or "CMS", and "inhaled" or "aerosolized" or "nebulized" to identify and screen potentially eligible articles for inclusion in the review. Results and Discussion: Out of the initially identified articles, three studies (351 patients with ventilator-associated pneumonia) were included: 3 randomized controlled trials (RCT) examined patients with VAP. In all reviews, Pseudomonas aeruginosa and Acinetobacter baumannii were MDR pathogens which caused infection. The mean daily dose of inhaled Colistin ranged between 8.8 to 12 MIU. The mean duration of Colistin treatment varied from 5 to 14 days. Inhaled Colistin was as effective as intravenous Colistin in the therapy of MDR bacilli VAP. Improvement of oxygenation and faster bacterial eradication time were shown in all included studies. Besides, systemic antibiotic therapy was different among studies, so it was difficult to evaluate the effect of the co-administered antibiotics on the outcomes. Conclusion: More research on this topic needs to be undertaken due to better clinical and microbiological outcomes of patients receiving inhaled Colistin.

keywords : Ventilator-associated pneumonia, VAP, Colistin, Aerosolized,

Assessment of drug use indicators using WHO/INRUD methodology at primary health care facilities in Guilan,Iran

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abstract [148] : Introduction: The irrational use of drugs was a global problem, especially in low and lower-middle-income countries is higher. However, there are no studies available on irrational use of drugs in rural Guilan province. This study aimed to measure the drug prescribing performance of primary health care centers in Northern Province, Islamic Republic of Iran, using the WHO/International Network of Rational Use of Drugs core drug prescribing indicators. Methods: In a cross-sectional retrospective study, a total of 874,132 prescriptions were collected from 177 primary health facilities of the family physician program at Guilan University of Medical Sciences in 2018-19. Five measurements were used to assess the irrational drug use: the average number of drugs per encounter, percentage of encounters with an antibiotic prescribed, percentage of encounters with an injection prescribed, percentage of drugs prescribed by generic name and percentage of drugs prescribed from National Essential Medicines List or Formulary. Index of Rational Drug Prescribing (IRDP) was used as an indicator of rational drug use. To analyze, statistical software SPSS 16 and Chi-square test were used. Results: The average of drugs per prescription was 2/69. Drugs percent off the list 13/7% (86/3%, according to the version approved list). 18/3% of prescriptions containing at least one antibiotic and 8/1% of injection and 2.0% of prescriptions had at least one corticosteroid. Most clients are women (62%) and seniors (44/9%) were formed. In this study, the price Version 74.6% of prescriptions were priced more than 30,000 Rs (Average price of prescription=107,000 Rs). Conclusion: This study shows that the prescribing practices in the health facilities are fairly good and are not that far from the standard WHO requirements. However, there is a need to do more on some issues, including the prescribing practice of antibiotics, and patients` dosage form knowledge. Continuous training of physicians can improve the quality of prescribing and subsequent monitoring be considered in evaluating a doctor`s season.

keywords : Prescribing indicators, rational prescribing, family medicine, WHO/INRUD, Guilan,Iran

Evaluation of Iran Drug policies in importing drugs and determining nature of drugs with ABC-VED method

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abstract [149] : Introduction: According to the significant role of medicines in health promotion of society, spending adequate money and providing medicines through stringent standards is more important. Because of unlimited demands vs limited sources in healthcare, disbursement of money is one of the critical issues should be noticed. Method: In the qualitative phase of this study we attempted to overcome to the authorities` opinions about medicine supplying policies through importing and domestic production. In the quantitative phase, analyzing pharmaceutical market of Iran and each part of production and importation market share have been done and by using ABC-VED matrix, drugs were classified to three categories: Vital, Essential and Desirable. also, according to monetary volume of drugs, they were classified to the categories A, B and C. Result: 30% of current drug market of Iran is provided by importing companies that only 1% of this volume belongs to drugs manufactured by licenses, 9% of this part, have domestic production and 20% of them belongs to drugs that have not similar form in Iran drug list.

keywords : Importing, ABC-VED matrix, domestic production, ,

Personal care products use-pattern: A national survey in Iran

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abstract [181] : Introduction: Personal care products are amongst the most consistently used products in every population. This study was aimed to evaluate rate and frequency of use, brand loyalty, tendency to scented or unscented products, preferred place of purchase, and choosing domestic or foreign products used by adults. Method: Considering Cochrane sampling, a validated questionnaire was developed to assess the use-patterns of 125 product types (e.g., skin, hair, and eye care) in 1670 households in eight cities of Iran. The data was analyzed by SPSS24 regarding age, sex, education, religion, total household expenses, and ethnicity of the population. Result and discussion: This study provides knowledge on population-based use-patterns of personal care products based on socio-demographic categories. More than 73% of respondents were women and 9.9% of overall household expenditures was dedicated to personal care products. Based on One-Way ANOVA test with significant p-value<0.05, daily shampoo, deodorants, bath soap, regular toothpaste, and body shampoo were the most frequent products used. The most repeatedly use-pattern was once-daily for sunscreens, moisturizers, lightenings, deodorants, toothpastes, mouth-washes, as well as eye-care, lip-care, anti-acne, anti-aging, and anti-chap products; also this pattern was twice weekly for hair-care, shaving products, soaps, and body shampoo. Regarding to face and hand creams, shampoos, lotions, and oils the average amount per use is 3.3-5.4 grams. Moreover, in all products studied, people prefer domestic over foreign ones except in deodorants and anti-perspirants. In addition, 42% and 29.8% of respondents prefer to purchase their personal care products from pharmacies and beauty shops, respectively. Conclusion: This is the first study providing use-pattern of personal care products in Iran. Considering the wide usage of such products, their impact on community health, and the consumer's preferences, companies and health authorities can take advantage of these results to develop strategies and regulations to optimize personal cares use-patterns.

keywords : Personal care, Use pattern, Household survey, Iran,

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Pharmacists' Patient Care Process Indicators in Community Pharmacies in Shiraz: The First Experiences from Iran

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abstract [193] : Introduction: Pharmacy as an inseparable part of healthcare system, plays an essential role in providing assistance to patients. Since, the Pharmacists' Patient Care Process (PPCP) in Iran is unknown, this study was conducted to evaluate the professional role of pharmacists in healthcare system in Iran. Methods: This is a cross-sectional study was designed in two parts, pharmacists (n=121) and patients referred to the pharmacies (n=479) in Shiraz during Oct 2017 till Jun 2018. We developed a questionnaire for collecting data about the PPCP, divided into two separate sections; one for pharmacists and another one for patients. One of the PPCP dimension is Pharmacist's patient care. In PPCP the dimension, good, moderate, and weak classes of pharmacists or patients were determined based on achieving ≥75%, 50%-75%, and <50% of the dimensions total score, respectively. Results: The pharmacist`s age range was 23-76 years (mean age: 40.61±12.85 years). Their approach to PPCP was good (43.8%), moderate PPCP was about 52%, and just 4% had a weak PPCP. Patient's response to PPCP was 11.2% good, 50.7% moderate and 35.6% weak. Discussion: Pharmacist care provided direct heath care effects across different patient outcomes, health care framework, and disease states. Evaluating Pharmacists' Patient Care Process with a newly-validated questionnaire provides information on patients' satisfaction and pharmacist' view with all dimensions of pharmacy patient care process. Conclusion: The instrument may be useful to practicing pharmacists, but it should be used cautiously until it is tested among clients of pharmacies known to provide all levels of pharmacy care within pharmacy stores. Key words: Pharmacists' Patient Care Process, Community Pharmacy, Pharmacoepidemiology References: 1. Borthwick M, Barton G, Bourne RS, McKenzie C. Critical care pharmacy workforce: UK deployment and characteristics in 2015. Int J Pharm Pract. 2018;26(4):325-333. 2. Odedina FT, Segal R. Behavioral pharmaceutical care scale for measuring pharmacists' activities. Am J Heal Pharm. 1996;53(8):855-864. 3. Sabour S, Peymani P, Karimzadeh I, et al. The Importance of Pharmacoepidemiology in Iran. Soc Pharm J. 2016;1(1). Corresponding author E-mail address- ORCID ID: Peymani.Payam@gmail.com-orchid.org/0000-0002-7223-8590.

keywords : Pharmacists' Patient Care Process, Community Pharmacy, Pharmacoepidemiology, ,

The effects of silymarin supplementation on metabolic status and oxidative stress in patients with type 2 diabetes mellitus: A systematic review and meta-analysis of clinical trials

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Abstract [29] : Objective: The effect of silymarin supplementation on metabolic status and oxidative stress of subjects with type 2 diabetes mellitus (T2DM) has not been conclusively studied. Therefore, the efficacy of silymarin supplementation in these patients was assessed through a meta-analysis. Methods: The following databases were searched up to May 15, 2018: PubMed, Scopus, Ovid (Cochrane library), Google scholar and ISI web of science. All randomized clinical trials using silymarin supplements to improve T2DM included in this meta-analysis. Mean Difference (MD) was pooled using a random-effects model. Results: Eight eligible publications from seven trials were identified for the present meta-analysis. Our results revealed that supplementation with silymarin can decrease fasting blood sugar, hemoglobin A1C, insulin, lowdensity lipoprotein cholesterol and malondialdehyde and increase high-density lipoprotein cholesterol levels. However, silymarin did not have any significant effects on total cholesterol or triglyceride concentrations. Conclusion: Our data suggest that silymarin supplements have beneficial effects on metabolic status and oxidative stress among patients with T2DM. However, there is currently insufficient evidence to make firm conclusions about the full efficacy of supplementation.

keywords : Silymarin, Lipid profile, Oxidative stress, T2DM,

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

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abstract [123] : Abstract: There is a concerning crisis about antibacterial resistance which can be accelerated by the overprescribing of antibiotics. This global Health challenge is associated with severe complications so medical interventions including the use of antimicrobial stewardship programs, active participation of clinical pharmacist in healthcare and antibiotic prescription based on antimicrobial culture should be performed. This study assessed the reasonable use of 5 antimicrobials in Ayatollah Taleghani hospital. Method: Cross-sectional prospective study was conducted in Taleghani Hospital, Tehran, Iran. Totally 121 patients from 3 wards of Intensive Care Unit, General surgery and vascular surgery, with a variety of underlying diseases, entered the study during 3 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 & discussion: In the Intensive care unit the most prevalent antibiotics were Meropenem, Imipenem (88.73%) and Colistin (11.27%); in vascular surgery unit, Meropenem, Imipenem (96.67%) and Colistin (3.33%) have high rate of administration and finally in general surgery ward Meropenem, Imipenem (88.23%) and Colistin (11.76%) were the most common type of antibiotics. antibiotic therapy was started for 61.16% patients based on empiric therapy, and microbiological cultures were utilized only for 38.84% of the patients. Antibiograms were used for only 4.95% of 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 a vital role for this purpose. References: Khan, M. U., et al. (2014). "Drug utilization evaluation of meropenem and correlation of side effects with renal status of patients in a teaching based hospital." Pak J Pharm Sci 27(5 Spec no): 1503-1508. foroughinia, f., et al. (2017). "Drug utilization evaluation of meropenem: an important broad-spectrum antibiotic for the treatment of serious bacterial infections in hospitalized patients." Trends in Pharmaceutical Sciences 3(1): 25-30. Salehifar, E., et al. (2015). "Drug use evaluation of Meropenem at a tertiary care university hospital: A report from Northern Iran." J Res Pharm Pract 4(4): 222-225. Corresponding author email address: mobina.heidary@yahoo.com- orcid.org/0000-0003-3500-0978

keywords : Antibiotic Stewardship Program, Antibacterial agents, Drug Resistance, Meropenem, Colistin

Personalized medicine in patient with colorectal liver metastases

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Abstract [27] : Background: Precision Medicine Initiative is a new research effort aiming to offer personalized treatment in many diseases, including cancer. The aim of the present article is to offer novel insights about the role of personalized treatment in patients with colorectal liver metastases (CRLM). Methods: A review of the literature regarding personalized medicine and colorectal liver metastases was performed mainly in the MEDLINE/PubMed database. Results: Surgical resection remains the only hope for cure of CRLM. Improved surgical strategies to optimize remnant liver volume are recently introduced and gaining ground. Following resection of CRLM scoring systems have been developed by combining certain preoperative factors such as microsatellite instability KRAS expression and sensitivity to immunotherapy with Programmed Death-1 inhibitor. Conclusions: Multidisciplinary management of patients with CRLM has markedly contributed to increased survival. While the last several decades have been characterized by these important developments, future advances for patients with CRLM will depend on a better understanding of genomics and molecular biology to facilitate characterization of a specific tumor “identity” so that individualized treatment for each CRLM patient becomes the rule, and not the exception.
keywords : cancer, personalized medicine, metastases, colorectal, liver

The Responsibility of Clinical Pharmacists for the Safety of Medication Use in Hospitalized Children: A Middle Eastern Experience.

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Objective: We aimed to detect and report the frequency of occurrence of drug-related problems (DRPs) in a Middle Eastern University Children's Hospital (Isfahan, Iran) and classify them in terms of their nature and cause to clarify the responsibility of clinical pharmacists for the safe utilization of medications in hospitalized children. **Methods**: In this cross-sectional study which was carried out in Imam Hossein Children's University Hospital affiliated with Isfahan University of Medical Sciences (Isfahan, Iran) from September 2017 to May 2018, DRPs during the hospitalization of pediatric patients in three medical wards, the pediatric intensive care unit, and two neonatal intensive care units were detected and identified concurrently with the treatment process using Pharmaceutical Care Network of Europe data gathering form for DRPs v. 8.01. All cases were verified and validated in a professional focus group before documentation**. Findings**: We detected 427 DRPs in 201 out of 250 randomly included hospitalized children in which 86% of them were directly reported by the hospital's clinical pharmacist. The highest frequency of DRPs (47.3%) was observed in the age range of 1 month–2 years. Safety of treatment was the most frequently reported as the nature of the problem (43.5%), followed by effectiveness issues (36.8%). The most frequent cause of DRPs was dose selection issues (34.2%), followed by drug-type selection (25.5%), and unavailability of appropriate dosage forms (13.6%). Ninety-eight interventions were proposed by the clinical pharmacist, in which 59.2% of them were accepted. **Conclusion**: This study confirms the necessity for the active role of clinical pharmacists before, during, and after drug therapy in hospitalized pediatric patients for the safety and proper utilization of drugs in this vulnerable population.

Keywords: Adverse drug events, clinical pharmacists, drug-related problems, hospitalized child, medication errors

Clinical trials from the Avicenna`s point of view

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Abstract [212] : Background: Avicenna, known in the Persian as “Ibn Sina” (980-1037 AD), a Persian physician, wrote a treatise on the testing of drugs. He wrote 7 conditions for investigating the effects of medications through experiments his book, The Canon of Medicine. The aim of this study is to consider Avicenna`s description of clinical trials. Methods: For this purpose, we evaluate Avicenna`s book, The Canon of Medicine, to access his point of view on clinical trials. Results: Avicenna proposed applying logic to the testing of medications, so, he wrote the earliest known treatise related to clinical trials. In the second volume of The Canon of Medicine, there is a chapter titled “The recognition of the strengths of the characteristics of medicines through experimentation.” In this chapter, Avicenna states, Experimentation will bring us the complete understanding of the strength of drugs; however, only if the conditions below are followed: 1. The testing medication must be pure, not having been affected by heat or cold. 2. The drug must only be tested for one condition, for if a patient has more than one condition. 3. Drugs must be tested in contradictory disease states 4. The strength of the drug must be proportionate to the severity of the diseases 5. The time at which the medicine’s therapeutic effect becomes apparent must be considered. 6. The drug must be observed for its continued action or for a prolonged period of time. 7. In order to understand the strength and effect of a drug Conclusion: To the modern eye, the therapeutic principles set forth in Avicenna’s treatise may appear to be self-evident. Indeed, one can read The Canon of Medicine and refute most of its findings today. However, the most critical aspect of the treatise is that Avicenna proposed applying the principles of the scientific method to the testing of drugs. This, quite simply, is the basis of the modern clinical trial.

keywords : Avicenna, Clinical trial, Persian medicine, The Canon of Medicine,

Cosmetic products use-pattern: A national survey in Iran

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abstract [158] : Introduction: Cosmetic products are amongst the most widely and regularly used products in all age groups. The aim of this study was to assess the rate, frequency, and the number of products used by the Iranian population. Preferences in selecting products, overall tendency to buy domestic or foreign products, brand loyalty, and preferred place of purchase were also investigated. Method: Usage patterns of 59 product types (e.g., hair-spray, foundation, eyeliner, and lipstick) were investigated in 1800 households in eight cities of Iran based on Cochrane sampling by means of a validated questionnaire. The data was analyzed with SPSS24 regarding age, sex, education, religion, total household expenses, and ethnicity of the population. Result and discussion: This study provides data on population-based usage patterns of commonly used cosmetic products based on socio-demographic strata. More than 82% of respondents were women and 52% of them had middle economic level. Based on One-Way ANOVA test with a significant p-value<0.05, mascara, foundation, eyeliner, and nail polish were the most frequent products used. The highest volume of use was dedicated to hair shampoo, conditioner, dye, and volumizer. In addition, foundation with a consumption amount of 280 grams per year per capita had the highest usage rate. On the other hand, considering face, eye, eyebrow, and lip cosmetics, people prefer to buy foreign over domestic products. In addition, beauty stores are the most favored place of purchase by consumers. Moreover, cosmetic products made 7% of overall household expenditures. Conclusion: This is the first study providing usage pattern of cosmetic products in Iran. Considering the wide usage of such products, their impact on community health, and the consumer's preferences, companies and health authorities can take advantage of these results to develop strategies and regulations to optimize cosmetic use patterns.

keywords : cosmetics, use pattern, household survey, cosmetics expenditure,

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Developing A Valid Questionnaire Evaluating the Awareness, Knowledge, Attitude, and Practice of Pharmacists Regarding Common Upper Respiratory Tract Disorders

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abstract [95] : Introduction: Patients considered community pharmacies as the most accessible primary care setting to seek attention, especially common upper respiratory disorders. Therefore, pharmacist should have enough and accurate knowledge to advice, manage and triage patients appropriately and to respond their health needs professionally1.The aim of this study was developing a questionnaire regarding the awareness, knowledge, attitude, and practice (KAP) of community pharmacists toward common upper respiratory tract disorders as the most prevalent disorder asking primary care in community pharmacies. Methods: The questionnaire consist of five parts including demographic, awareness, knowledge, attitude and practice. To design this instrument, first, important tips and facts about upper respiratory tract disorders were extracted from UpToDate®, Symptoms in the pharmacy, Handbook of Non-Prescription Drugs and Community pharmacy. Then to design knowledge part an expert panel consists of 11 experts, determined 5 field for knowledge and then they scored to every field separately. The attitude fields include professional position of pharmacists in the health system regarding to the diagnosis and management of upper respiratory tract disorders, and the comparison of pharmacist's and physician's role. The awareness and practice questions designed using the expert panel. First draft of questionnaire included 9 awareness questions, 60 knowledge questions, 13 attitude questions and 5 practice questions. First draft was corrected grammarly and apparently. In the tables of validity 11 experts examined validity based on clarity, simplicity and relativeness. The content validity index and content validity ratio were calculated to determine the necessity of each question. Each question passed these validity indexes, shifted to next draft of questionnaire. The expert panel assessed these indexes again. Finally, 22 questions were choosing to assess knowledge; and also, reliability of questions was calculated by alpha Cronbach's method among 30 pharmacy students in statistical population . 9 questions of awareness, 22 questions of knowledge, 13 questions of attitude and 5 questions of practice were approved by experts. Results and Conclusion: The results of CVI (0.79) and CVR (0.60) helped to detect the inappropriate questions and they removed from questions list. The calculated reliability was 0.731. This valid instrument could be used as an appropriate instrument assessing KAP of pharmacists in one of the most prevalent aspects of practicing in community pharmacies 2.

keywords : Pharmacists, Pharmaceutical Services, Awareness, Primary Health Care, Surveys and Questionnaires

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Assessment of the Awareness, Knowledge, Attitude, And Practice of Senior Pharmacy Practice Trainees of Tehran Universities Regarding Common Upper Respiratory Tract Disorders

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Abstract [113] : introduction: Patients considered community pharmacies as the most accessible primary care setting to seek attention, especially common upper respiratory disorders. Therefore, pharmacist should have enough and accurate knowledge to advice, manage and triage patients appropriately and to respond their health needs professionally1.This study designed to evaluate awareness, knowledge, attitude, and practice (KAP) of senior pharmacy practice trainees of Tehran universities regarding common upper respiratory tract disorders, as the most prevalent disorders asking primary care in community pharmacies. Methods: This cross-sectional study was done between April 2018 and April 2019 in Tehran universities. Cochran equation used to estimate an accurate sample size of participants to have a proper extension based on near 750 pharmacy practice trainees in Tehran universities.The calculated sample size was 247. To evaluate the awareness, knowledge, attitude and practice of participants a valid and reliable instrument was developed. SPSS software version 23 and appropriate statistical tests were utilized. Results and conclusions: : Overall 257 Senior pharmacy practice trainees including 82 males (32%) and 175 females (68%). Almost 92.1% of participants were in age between 20 and 25 years old. The self-administered score of awareness was 3.47 based on a 5-point Likert scale. The score for knowledge and practice were 10.70 ± 3.88 (out of 20) and 43.67 ± 13.51 (out of 100), respectively. There was a significant difference between the amount of knowledge in the fields of diagnosis and drug information between different universities in Tehran respectively (P=0.017 , P=0.002). Shahid Beheshti students have more positive attitude toward the need to take history from patients in compare with all of the students (P=0.001). Discussion: Our results show that the levels of self-administered awareness were moderate, and this conception is not correlated with their exact knowledge score. The knowledge and practice scores were moderate. Shahid Beheshti students have more positive attitude toward the need to take history from patients in compare with all of the students that shows more attention is giving to need to take history at Shahid Beheshti university.

keywords : Universities, Cross-Sectional Studies, Sample Size, Disease Management, Awareness

Cost-Effectiveness Analysis of Sorafenib in Treatment of Advanced Hepatocellular Carcinoma in Iran

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abstract [194] : Introduction: This study aimed to develop an economic model based on the perspectives of Iranian health systems in order to evaluate the cost-effectiveness of Sorafenib versus Best Supportive Care as the treatment of advanced hepatocellular carcinoma. Methods: A Markov model, simulate the lifetime patient outcomes and coat of patients received Sorafenib or BSC treatment from Iranian health system perspective. The measure for efficacy was reported as Quality Adjusted Life Year (QALY) estimated by clinical success rates, overall survival, and utility scores retrieved from literature; the costs were retrieved from literature, clinicians' routine practice, and Iran tariff book. Cost-effectiveness ratios (ICER) was estimated and sensitivity analysis was done to show the robustness of the model through variation of all probabilities and costs Result: The total discounted QALYs in base scenario were higher with Sorafenib (0.710) than BSC (0.550). Moreover, the discounted costs per patient in Sorafenib group were higher (906,579,334 IRR) than in BSC groups (138,531,954IRR). Thus, the incremental cost-effective ratio was IRR 4,779,255,511/QALY for sorafenib versus best supportive care. The result of one-way sensitivity analysis shows the prices of medicines are the most important variables which affects the result. Conclusion: On the basis of accepted willingness-to-pay in Iran (IRR148.000.000 /QALY), sorafenib is not a cost-effective option for treatment of patients with advanced HCC comparing best supportive care. As the significant cost reduction which is needed for being cost effectiveness may not be feasible for producer, a managed entry agreement would be the best recommendation for sorafenib market access in Iran.

keywords : Sorafenib, Best Supportive Care, Hepatocellular carcinoma, Cost-effectiveness,

The reduced prevalence of cigarette smoking and physical inactivity in a young, healthy population by the primary prevention guideline of coronary artery disease

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Abstract [5] : Introduction: Coronary artery disease (CAD) is strongly associated with lifestyle, particularly smoking habit (SH) and physical inactivity (PI). Aim of this interventional study was to evaluate the efficacy of the primary prevention guidelines on the risk reduction of CAD, in terms of the smoking habit and sedentary lifestyle. Methods: A quasi-experimental research was conducted to evaluate the role of lifestyle modification in 322 initially healthy individuals aged over 20 years, who were referred to the preventive clinics in Tehran. The outcome of smoking cessation intervention was to quit smoking entirely. According to the AHA 2013 guideline, moderate physical activity in five days a week for 30 min or a vigorous physical exercise in three days a week for 25 min was examined. Results: Sixty-four (19.9%) individuals with SH, and 214 (66.5%) subjects with PI were assigned to the intervention group. After a 10 month-follow up, the frequency of SH and PI was decreased to 11.8 and 48.0%, respectively ($p < 0.001$). Conclusion: As lifestyle interventions had a highly significant effect on the SH and PI, it is recommended to implement this intervention program at a national level to overcome the CAD epidemic.

keywords : Coronary artery disease, Clinical trial, Intervention outcome, Risk reduction, Primary prevention

Identification of risk factors related to cardiovascular complications in acute tramadol poisoning: A prediction approach

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Abstract [9] : Introduction: Opioid drugs poisoning is a major social and health care problem in the world and prediction of complications due to poisoning that creates an unprecedented national crisis is important. Also, cardiovascular complication is the main factor in mortality and morbidity in Iran. The aim of this study is to create a prediction model to identify risk factors of cardiovascular complications in acute tramadol poisoning. Methods: A prospective cohort study was conducted on patients that referred to emergency department with pure acute tramadol poisoning (2017-2018). For each patient, etiological, clinical and laboratory findings were gathered from clinical files. We performed logistic regression model to identify the risk factors and predict cardiovascular outcomes in acute tramadol poisoning. Predictive performances of model was analyzed by receive operating characteristic (ROC) curve and discrimination of the model was done. Results: For multivariate logistic regression (MLR) model, the sensitivity and specificity were 83% (CI: 0.80-0.87) and 0.85 % (CI: 0.81-0.88) respectively. Key independent variables in the analysis were age, sex, dose and period of consumption. R2 in logistic regression model was 0.85 and AUC was 0.89. Discussion and conclusion: While investigation findings were exploratory and lacked generatibility, we suggest that MLR model holds promise as an effective classification approach for identification risk factors related to cardiovascular complications in tramadol toxicity. Therefore, prediction of these outcomes may be helpful in reducing mortality and morbidity due to tramadol poisoning. It can be assessed at emergency department and quick and easy to use and applicable in hospital.

keywords : cardiovascular complications, poisoning, prediction, tramadol.,

Does the clinical implementation of ACC/AHA guideline reduce the risk of cardiovascular diseases through lowering diabetes mellitus occurrence?

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Abstract [6] : Introduction: Clinical guidelines of lifestyle modification and risk factors can reduce cardiovascular diseases (CVDs) among diabetes mellitus (DM) patients. A clinical trial was designed to assess the ACC-AHA guideline effect on CVDs primary prevention by reducing the DM incidence. Methods: A quasi-experimental study was conducted among 322 initially healthy individuals aged above 20-year-old. Fasting blood glucose (FBS) was measured at baseline and after 6, 10, and 24 months of follow up. The difference in measurement results in the different follow up periods was statistically analyzed. Results: Baseline FBS in females and males was 105.25±27.32 and 103.64±30.16 mg/dl, respectively. After six month-implementing the targeted interventions, FBSs were in females and males significantly reduced by 96.08 and 96.49 mg/dl, respectively. FBS levels continued to reduce by 92.24 mg/dl in women and 90.34 mg/dl ($p<0.001$) in men after ten month-intervention. A reduction in FBS in female (90.18 mg/dl) and male (87.12 mg/dl) participants was verified after 24 months of active follow up ($p<0.001$). Conclusions: As the correct implementation of ACC-AHA clinical guideline led to a significant decrease in FBS, CVDs as a developing risk can be primarily prevented with the lifestyle-modifying approach for DM control.

keywords : Coronary artery disease, Diabetes, Lifestyle intervention, Primary prevention, Risk assessment

Comparison of intravenous sodium bicarbonate and sodium chloride combination versus intravenous sodium chloride alonein preventing Amphotericin B nephrotoxicity: a randomized clinical trial

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Abstract [23] : Introduction The most important adverse reaction of amphotericin B (AmB), a broad-spectrum antifungal agent, can significantly challenge and limit its use in clinical practice is nephrotoxicity. The aim of this study was to assess the potential effectiveness of intravenous sodium bicarbonate and sodium chloride combination versus intravenous sodium chloride hydrationin preventing or attenuating different aspects of AmB nephrotoxicity. Methods: This randomized, not-placebo-controlled, single-blinded clinical trial was conducted during a 1 year period in two adult hematology-oncology wards of Namazi hospital, Shiraz, Iran. The eligible patients were randomly assigned into either the normal saline alone or saline + sodium bicarbonate groups by the ratio of 1:2 in a single-blinded manner. In the normal saline group, 1000 ml sodium chloride 0.9% (154 meq sodium) was given intravenously at the rate of 1 ml/kg/hr as two equal 500 ml volumes before and during the infusion of AmB. Patients in the saline + sodium bicarbonate group received 500 ml sodium chloride 0.9% (72 meq sodium) before and 500 ml isotonic sodium bicarbonate (72 meq sodium) intravenously during AmB infusion. AmB nephrotoxicity was defined by either doubling of serum creatinine (Scr) from the baseline value or ≥50 % decrease in glomerular filtration rate (GFR). Results: Thirty one subjects including 20 and 11 individuals in the saline + sodium bicarbonate and normal saline groups, respectively, completed the study. Different demographic as well as baseline clinical, and paraclinical characteristics of the study population were comparable between two groups. The rate of AmB nephrotoxicity was comparable between normal saline alone and saline + sodium bicarbonate groups (54.2% and 41.6%, respectively; P = 0.3). This difference did not reach the level of statistical significance after considering AmB dose and duration of treatment.The mean change of Scras well as GFR during the course of AmB treatment did not differ significantly between saline alone and saline + sodium bicarbonate groups. The frequency of hypokalemia and hypomagnesemia did not differ significantly between two groups even after adjusting for AmB dose and treatment duration. Conclusion: The results of the current preliminary clinical trial suggested that the combination of sodium bicarbonate and normal saline compared to normal saline alone co-administration appears to have no superiority in preventing or attenuating different studied aspects of AmB nephrotoxicity in patients with hematological malignancies.

keywords : Amphotericin B, nephrotoxicity, prevention, intravenous sodium chloride,

Study of the effect of pharmacist-led education on inhaler technique in patients with asthma and COPD; and evaluation of its possible explanatory factors

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abstract [165] : Introduction: Several studies indicate improper inhaler technique in asthma and COPD patients. Owing to their high knowledge on medicines, pharmacists can play an important role to teach correct inhaler technique to these patients and to manage their medication therapy. This investigation was designed to determine the impact of pharmacist-led education on inhaler technique of asthmatic and COPD patients and to evaluate its explanatory factors. Method: A single arm pre-post study was designed. A non-probability sampling was used in which eligible adult patients receiving at least one metered dose inhaler (MDI) or dry powder inhaler (DPI) device, and referring to the outpatient clinic of the Shahid Labbafinejad Hospital between Fall 2015 to Summer 2016 were entered into the study. Baseline inhaler technique was checked for each patient. Then, patients received training about correct inhaler technique. Inhaler technique was rechecked after one month. Demographic, medical and medication history were also recorded. Data were analyzed using the SPSS (version, 22.0) software. Results: 40 patients (21 male, 19 female) with mean±sd age of 61.6±10.6 years were enrolled in the study. Findings revealed that the ratio of the number of correct steps of inhaler technique to the total relevant steps in post-education phase (0.83±0.11) was significantly higher (p= 0.0001) than those of the pre-education phase (0.60±0.14). Also, there was a significant indirect relationship between morbidity and inhaler technique in pre- (p=0.03, r=-0.35) and post-education (p= 0.02, r=-0.38) phases. None of the demographic, medical and medication features had significant relationship with the inhaler technique. Conclusion: Our results show that pharmacist-led educational interventions can improve inhaler technique independently, and can eventually lead to morbidity reduction. Therefore, implementation of organized educational programs and drug therapy follow up by pharmacists with the aim of improving medication therapy and quality of life of the patients are recommended.

keywords : Asthma, Chronic Obstructive Pulmonary Disease, Inhaler Technique, Morbidity, education

Effect of calcitriol supplementation on infectious biomarkers including propcalcitonin (PCT) and presepsin in patients with positive systemic inflammatory response

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abstract [164] : Background: sepsis is one of the common cases of hospitalization of patients in the intensive care unit. A significant role for vitamin D in sepsis has been proposed, which is due to the important effect of its active metabolite, calcitriol, on the host defense system. In the present study, the effect of calcitriol on the markers of infection, including PCT and presepsin, has been studied in these patients. Study design: This study was designed as a randomized, open label clinical trial. Patients were divided into intervention and control groups. Patients in intervention group received intravenous calcitriol daily for 3 days. The serum levels of PCT and presepsin were evaluated on days 0, 3 and 5 after injection Results: A total of 27 patients with positive systemic inflammatory response were included and randomly divided into 2 groups (14 patients in the intervention group and 13 patients in the control group). In terms of basal factors, changes in SOFA score and blood levels of vitamin D were not significantly different between the control and intervention groups. Procalcitonin levels on day 5 and the differences between day 5 and 0 were significantly different between intervention and control group (P = 0.02 and P = 0.026). Perspepsin on the 3rd and 5th days in the intervention group was decreased, but in the control group there was a increasing trend, but there was no significant difference between the two groups at days 3 and 5, and the difference between the 3rd and the 5th day with the presepsin at the time of entering the study. Conclusion: Finally, the results of this study showed that administration of intravenous calcitriol can reduce the level of procalcitonin as a diagnostic marker for sepsis but did not have a significant effect on presepsin.

keywords : sepsis, SIRS, calcitriol, PCT, Presepsin

The Therapeutic Effect of Hyaluronic Acid in Tennis Elbow: A Systematic Review on Current Literature

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abstract [137] : Introduction: Tennis elbow (TE) is a common, painful disease that usually occurs in middle-aged patients and often prevents them from daily activities. Despite several studies regarding its treatment, there is no certain evidence-based treatment for TE, except short-term pain relief. Among treatment strategies, hyaluronic acid (HA) employed recently for TE treatment, and there is not any consensus regarding its efficacy. The aim of this was to evaluate the efficacy of HA in tennis elbow through a systematic review and meta-analysis. Methods: A systematic review and meta-analysis have been done in November 2018. PubMed, Scholar and Scopus have been searched with MeSh based keywords. The articles evaluated with two independent investigators and the qualities of articles have been evaluated with Jadad scale. Finally the eligible articles entered to the study and efficacy parameters extracted from previous articles. Results and discussion: Totally 49 articles included in this study, which screened in case of quality and finally articles remained in this study. Duplicated articles were removed by EndNote and 49 articles remained. In first step 41 articles excluded due to irrelevant title and eight articles remained finally. In second step, the abstract reviewed carefully and six articles remained. Finally after evaluating the full text four articles entered to final evaluation. Conclusion: Base on literatures that was reviewed, HA had a most effectiveness in pain. But single injection of HA couldn't benefit for treatment of severe pain in TE for long-term. The results indicated that HA has an acceptable efficacy and has a minimal side effect. References: 1. Petrella RJ, Cogliano A, Decaria J, Mohamed N, Lee R. Management of Tennis Elbow with sodium hyaluronate periarticular injections. Sports Med Arthrosc Rehabil Ther Technol. 2010;2:4. 2. Kaux JF, Samson A, Crielaard JM. Hyaluronic acid and tendon lesions. Muscles Ligaments Tendons J. 2016;5(4):264–269.

keywords : Hyaluronic acid, Lateral Epicondylitis, Lateral Humeral, Tennis Elbow,

Evaluating the Efficacy and Safety of adding Intra- Articular High Molecular Weight Hyaluronic Acid (Viscor® MW>2000 KD) Injections in Comparison of Low Molecular Weight Hyaluronic Acid (Hyalgan® MW= 500-800 KD) and lidocaine In Frozen Shoulder conventional physical therapy (Adhesive Capsulitis)

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abstract [211] : Introduction: To compare the efficacy of ultrasound-guided intra-articular low molecular weight hyaluronic acid (HA) and lidocaine injection plus physical therapy (PT) with high molecular weight HA and lidocaine injection plus PT for the treatment of adhesive capsulitis (AC) of the shoulder. Method: 55 patients with AC were included to this randomized double blind study. They equally randomized to divide into the 2 treatment groups that each patients received a single injection: group 1, low molecular weight (500-700 kDa) hyaluronic acid (HA) and lidocaine injections under US guidance; or group 2, high molecular weight (>2000 kDa) HA and lidocaine injection under US guidance. All patients underwent standard physical therapy (PT) Patients were followed up 4 and 12 weeks after injection. The primary outcome was the visual analog scale (VAS). Secondary outcomes included OXFORD shoulder score, and active range of motion (ROM) of the shoulder (flexion, abduction, internal rotation, external rotation). Outcomes were measurement at baseline, 4 and 12 weeks after the injection. Inflammation signs and symptoms were checked at baseline of injection. Result and discussion: No significant differences were noted in demographic variables at baseline between groups. After treatment, OXFORD score, VAS score and active ROM were improved at 2 and 6 weeks in both groups but no significant differences were noted in OXFORD score and active ROM (at weeks 4 and 12) groups (all P>.05). VAS in the group 1 was significantly improved in 4weeks. However the result showed that VAS in group 2 was significantly better at week 12. Conclusions: This study was shown that intra-articular under US-guided injection of LMW hyaluronic acid plus PT as effective as HMW hyaluronic acid plus PT in OXFORD score, and ROM; however it is more effective in pain relief than HMW hyaluronic acid.

keywords : Adhesive capsulitis, Frozen shoulder, Hyaluronic acid, Physical therapy, Ultrasound guided

The cost-effectiveness and cost-utility analysis of adding Cetuximab to Platinum Based Chemotherapy for Treatment of Metastatic Head and Neck Cancer.

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Abstract [125] : Introduction: This study was conducted to assess the cost-effectiveness of adding cetuximab to cisplatin and fluorouracil in the treatment of patients with recurrent head and neck carcinoma from the perspective of the Iranian public healthcare system. Methods: A systematic review and consultation with clinicians on cetuximab add on therapy use, in HNSCC and its effect on transition probabilities, source of cost and quality of life has performed. Then, a time-varying probabilities for the transition of Markov model was developed by the implementation of Iran specific features. The model begins with a decision to treat with cetuximab plus platinum-based chemotherapy (11 states) or platinum-based chemotherapy alone (3 states). Uncertain parameters are assigned probability distributions and analyses performed by Monte Carlo simulation. Future costs and health benefits were respectively discounted at 5% and 3%. Result: In the base case, cetuximab add-on therapy led to an increase of 0.06 QALY and 519,651,755 Rial per person, resulting in an incremental cost-effectiveness ratio (ICER) of 828,128,259.91966 Rial per QALY gained. The cost-effectiveness ratio was most sensitive to the cost per mg of maintenance dose of cetuximab. Conclusion: Due to the Iranian Health Organization-recommended cost-effectiveness threshold Adding cetuximab to cisplatin and fluorouracil despite 0.06 QALY gain, cannot be considered cost-effective in patients with head and neck cancer in Iran.

keywords : Economic evaluation, cetuximab, head and neck carcinoma, time-varying probabilities, quality of life

Choice supplement as formative second-order construct

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abstract [136] : Introduction: In today`s highly competitive market of food supplements, the importance of smart marketing is becoming more and more evident. In this regard, companies need a scientific analysis of the needs and characteristics of their present and future consumer. In the current study, the authors develop a formative measurement instrument for examining the factors that influence the choice of food supplements by the customers in Tehran`s urban pharmacies as a second-order construct that indicates how intensively each factor affect customer's choice. Methods:The authors has implemented a thorough literature review and modeled customer choice as a function of 10 formative dimensions – product reputation, product characteristics, appearance and packaging, physician and pharmacist advice, media and advertisements, pharmacy-related factors, safety label, pharmaceutical form And type of formulation, previous experiences and price – measured by several formative indicators. The data from the survey enable an estimation of the CEM model with both smart PLS 3.00 and SPSS 23. The PLS 3.00 approach applies a bootstrapping method (1000 samples, sample size 300) to calculate the t-values. Results: This study showed that among the factors that affect the choice of supplements, product safety label and product characteristics are among the most important factor. On the other hand, the price factor can be considered as the least effective factor. Conclusion: Food supplement manufacturing companies should pay more attention to the product safety label and Specialization.

keywords : food supplement, marketing, Second-order construct, Formative indicators, customer choice

Economic impact of pharmacist interventions on correction of stress-related mucosal damage prophylaxis practice

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abstract [135] : Introduction: Stress-related mucosal damage (SRMD) is described as the damage of gastric mucosa due to physiological stress that is a very common complication in critically ill patients. SRMD prophylactic medications are widely prescribed all over the world, while numerous studies have revealed that a large percentage of patients admitted to non-intensive care unit (ICU) services do not need to receive these medications. The aim of this study was to determine the frequency and type of medication errors and the economic impact of clinical pharmacist intervention on stress ulcer prophylaxis (SUP). Methods: This prospective interventional study was conducted on adult patients admitted to internal, surgical, and critical care units at two large academic medical centers over 6 months. Risk factors of stress ulcer were recorded daily during hospital stay, and appropriateness of SUP administration was assessed according to the American Society of Health-System Pharmacists (ASHP) criteria. An intervention was performed by a clinical pharmacist in the case of contradictions. The rate of inappropriate SUP and the economic impact of a pharmacist intervention were recorded. Results: In this study, 178 out of 219 (81.2%) patients received prophylactic treatments. Averagely, prophylactic therapy was compatible with standard treatment guidelines in 67.1% of cases. The implementation of ASHP guideline by a clinical pharmacist resulted in a cost saving of >18,000 USD monthly in this study, which would result in an estimated cost saving of >216,000 USD annually. Conclusion: Although treatment guidelines are available for the prophylaxis of SRMD, failure to observe these guidelines could increase the cost of treatment and adverse effects. The clinical pharmacists' intervention in order to implement standard protocols has a significant impact on the reduction of unintended mistakes in prescribing prophylaxis, as well as significant cost savings.

keywords : acid suppression therapy, clinical pharmacy, histamine-2 receptor antagonist, proton pump inhibitor, strees ulcer prophylaxis

Efficacy of synbiotic supplementation in obesity treatment: A systematic review and meta-analysis of clinical trials

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Abstract [30] : Several investigations have been reported the beneficial effects of synbiotic in participants with obesity, but these findings have been inconsistent. Therefore, we systematically reviewed available randomized clinical trials (RCTs) to elucidate the overall effects of synbiotic supplementation on anthropometric indices among participants with overweight or obesity. Five electronic databases including PubMed, Scopus, ISI Web of science, Cochrane Library and Google Scholar were searched up to October 2018. All RCTs using synbiotic supplements to treat obesity included in this systematic review and meta-analysis. Weighted mean difference (WMD) was pooled using a random-effects model. The present meta-analysis of 23 randomized trials indicated that supplementation with synbiotic can decrease body weight (WMD: -0.80 kg; 95% CI: -1.56 to -0.03, p¼0.04) and WC (WMD: -2.07 cm; 95% CI: -3.11 to -1.03, p<0.001). In contrast, synbiotic did not have favorite effects on BMI (WMD: -0.12 kg/m2; 95% CI: -0.40 to 0.16, p¼0.39) and body fat (WMD: 0.02%; 95% CI: -1.27 to 1.87, p¼0.74) compared with the placebo group. Meta-regression analyses revealed that the dosage of probiotic did not have any effect on anthropometric measures. Based on our findings, modulation of gut microbiota composition through synbiotic supplementation might have modest effects on body weight and waist circumference. In this field, however, our knowledge is progressing.

keywords : synbiotic, overweight, obesity, meta-analysis,

Effects of silymarin supplementation on blood lipids: A systematic review and meta-analysis of clinical trials

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abstract [31] : Dyslipidemia is a leading cause of endothelial dysfunction and cardiovascular disease. Several studies used silymarin as an herbal supplement in hyperlipidemic subjects. The aim of the present systematic review and meta-analysis was to examine the effect of silymarin supplementation on blood lipids. PubMed, Scopus, Ovid (Cochrane library), ISI Web of Science, and Google Scholar were systematically searched until March 2018 to find intervention studies that examined the impact of silymarin supplementation on blood lipids in adults. Changes in blood lipids and potential sources of between-study variation were extracted. We run a subgroup analysis to determine potential sources of inter-study heterogeneity. Ten clinical trials fulfilled the eligibility criteria. Meta-analysis indicated that silymarin supplementation in combination with other treatments (not silymarin alone) reduced total cholesterol (change: −25.45 mg/dl; 95% confidence interval [CI] [−47.89, −3.01 mg/dl]) and low-density lipoprotein (change: −28.25 mg/dl; 95% CI [−53.09, −3.42 mg/dl]). Also, silymarin increased high-density lipoprotein concentration (change: 4.82 mg/dl; 95% CI [2.01, 7.63 mg/dl]). Blood concentration of triglyceride was significantly after silymarin supplementation in comparison with controls (change: −22.55 mg/dl; 95% CI [−44.32, −0.78 mg/dl]). Present systematic review and meta-analysis revealed that silymarin supplementation in combination with other treatments had a favorable effect on blood lipids.

keywords : high-density lipoprotein, low-density lipoprotein, meta-analysis, silymarin, total cholesterol

Effects of pro-/synbiotic supplementation on anthropometric and metabolic indices in overweight or obese children and adolescents: a systematic review and metaanalysis

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Abstract [32] : Background & Aims: Existing evidence on the possible effects of pro-/synbiotics on overweight or obese children and adolescents has not been fully established. Therefore, the present review was undertaken to evaluate the overall effects of pro-/synbiotics supplementation on anthropometric indices and metabolic indices in overweight or obese children and adolescents. Methods: A systematic computerized literature search of PubMed, Scopus, ISI Web of science and Google Scholar databases was conducted up to November 2018. All RCTs using pro-/synbiotics supplements in overweight or obese children and adolescents included in this systematic review and meta-analysis. Results: Overall 9 randomized trials including 410 subjects were identified for the present meta-analysis. Pooled analysis did not illustrate any significant changes in BMI z-score, waist circumference, weight, body fat, fasting blood sugar and lipid profiles (triglyceride, total cholesterol, high-density lipoprotein cholesterol, and low-density lipoprotein cholesterol) after supplementation with pro-/synbiotics for 4-16 weeks. However, subgroup analysis by intervention type revealed a significant reduction of BMI z-score in synbiotic subgroups. Conclusion: Based on our findings, modulation of gut microbiota composition through pro-/ synbiotic supplements did not have favorable effects to manage overweight or obese children and adolescents. Further large-scale studies are warranted to confirm present findings.

keywords : synbiotic, probiotic, obesity, children, Meta-Analysis

Elucidation of Caffeine Intake and Reasons for Use Among Medical Staff

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abstract [200] : Introduction Caffeine use is highly prevalent among people especially who work night shift. Energy drinks (EDs) are extremely popular among adults and adolescent. Most of them contain caffeine. Reduced vigilance is a common issue in healthcare work environments and is associated with impaired cognitive performance and decision-making ability as well as increased errors and injuries. Using energy drinks that contain caffeine is a common way to decrease fatigue and sleepiness. Caffeine has obviously positive impacts upon alertness and mood after consumption for a short time. However, excessive caffeine consumption can have a significant impact on an individual's health. Methods In this study, we investigate the intake of caffeine from different sources among medical staff. A quantitative, cross-sectional approach with a descriptive design was used for this study. 150 people participated in our analysis. Our population consist of physicians, pharmacists and nurses. Intake from tea, coffee, energy drinks, soft drinks and supplements was measured. Results and discussion Our results showed that approximately 90% of medical staff consume caffeine in any form. Tea and coffee were two main sources of caffeine intake. A tiny minority of medical staff consume caffeine supplements. They were aware that caffeine has short- and long-term effects on health. They use caffeine for different reasons and the most important was for awareness. Also some people just use energy drinks due to its taste. Conclusion In conclusion, drinking caffeine containing drinks by medical staff can be variable and comes from different sources. Tea is the primary source of caffeine intake among the medical staff in Iran. A majority of the participants are not heavy users and the majority of medical staff use caffeine because of awareness. Corresponding author Email: davarmohamadpor@gmail.com

keywords : Awareness, Caffeine, Coffee, , Medical staff,

Investigation of knowledge and attitude of general physician of Busheher City (Iran) regarding herbal Medicine

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abstract [146] : Introduction: The prescription and use of herbal remedies is expanding today, given that general practioners are at the forefront of health care, the present study aimed to evaluate the knowledge and attitude of general practioners towards herbal remedies and the possible socio demo graphic factors associated with it, were designed and implanted. Methods: In a descriptive analytical survey study it was designed to evaluate the knowledge and attitude of general practioners working in Bushehr in the first 6 months of the year 98.the instrument used was a researcher made questionnaire whose validity and reliability were confirmed by content validity index method, content validity ratio, Kurder Richardson reliability coefficient method. The questionnaire was completed by physicians and their demographic characterizes were recorded. The data were presented descriptively and analyzed by SPSS software with appropriate statistical test. Results and Discussion: Mean knowledge level and attitude score of general practitioner studied were equal to76 ± 2/1 (out of total point 9), 16/33 ± 7/4 (out of total point 50) were obtained. Among the sociodemographic factors and physicians working background, physicians activity in government centers (p=0.04) and the use of credible source (p=0.006) were directly related to their knowledge. Also there was significant relationship between physician age (p=0.04, r =0.17), physician interest in prescribing herbal medicines (p<0.0001, r =0.42) and doctors use of herbal medicines (p<0.0001, r =0.39), doctors working experience (r =0.17, p<0.04) and the amount of prescription with herbal medicine (p<0.001, r =0.43). There was no significant relationship between physician s attitude and their knowledge. Conclusion: our study showed that general practitioners have an acceptable knowledge and attitude about herbal medicine. Doctors with more work experience have a better attitude toward herbal medicine and in fact this is consistent with their higher willingness to use and prescribe herbal medicine by them. Training and making available valid scientifically credible recourse can be one of the effective measures to modify physician's attitude to wards herbal remedies. Further study in provinces and doctors with specialized tendencies can provide a clear picture. *Email: sfmojab@sbmu.ac.ir ORCID ID: 0000-0003-2415-2175

keywords : Herbal Medicines, Knowledge, Attitude, General Practitioners,

A Drug Utilization Evaluation Study of Intravenous Acetaminophen in a Large Teaching Hospital in Iran

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abstract [131] : Background: IV acetaminophen has become the most commonly chosen analgesic medication in critical care settings. Overall, the cost of the drug is higher than oral and rectal acetaminophen. As a result, numerous studies have been performed to evaluate the appropriateness of IV acetaminophen use based on guidelines. A lot of studies have shown that there is poor quality in compliance with guideline in developing countries. Current study aims to evaluate prescribing behavior of IV acetaminophen regimens in hospitalized adults in Tehran, Iran. Material and methods: We enrolled 277 patients (including 137 men and 140 women) with age ranged between 18-65 years in Ziaeian hospital, Tehran, Iran. Demographic data and clinical and preclinical parameters such as blood urea nitrogen (BUN) and creatinine levels, name of ward, prescribing reason, doses, dose intervals, number of doses, type of vehicle used and durations of infusion were collected and recorded for analysis. Results: Our results have shown that guideline concordance was seen only in 20 (7.22%) out of 277 patients. IV acetaminophen is prescribed mostly by emergency medicine specialists, and it is more inappropriately prescribed by these specialists in comparison to other specialists. It was also found that non-compliance of IV acetaminophen prescribing with guideline imposes 1038 USD additional expenditure on health care system of the hospital. Indirect costs resulting from preventable adverse events, physician and nurse manpower and time was not calculated. Conclusion: The evaluation of prescribing indicators showed low quality prescription by medical specialists. The pattern of prescribing depending on the medical specialties was also different. In addition, overuse and misuse of IV acetaminophen imposes substantial cost and the economic burden on healthcare system.

keywords : Intravenous (IV), acetaminophen Drug utilization research, Appropriate drug use, ,

Analysis of organizational life cycle in DarouPakhsh Pharmaceutical MFG co.

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abstract [126] : Introduction An approach to analyzing the economic features of organizations is the organizational lifecycle (OLC) model. Determination of the OLC of a firm is the first step in diagnosis an organization`s disease and, it can provide appropriate solutions for its treatment. The purpose of this study is to determine and analysis of the OLC of DarouPakhsh Pharmaceutical MFG co. (DPMC) in the market of Iran and the world. In the next step, appropriate strategies for DPMC, are suggested to prevent the aging of the organization (1). Method The financial information about the company is obtained from the financial statements that are issued by DPMC annually. Four variables of sales growth (SG), cost of expenditure (CE), dividend payout ratio (DPR) and the age of the organization, are studied based on Anthony and Ramesh`s method (1992). The value of each variable in 6 years (2009-2013) are calculated, each firm-year of the company are then marked with a score (growth stage = 1, maturity stage = 2, decline stage = 3). Combined scores are calculated for the firm and the OLC index is determined. Then the effect of various related factors (dosage form, price, number of employees, education, and age of them) on the obtained index is evaluated and finally, appropriate strategies are suggested to improve the financial performance of DPMC (2). Result and Discussion The results show that in our period of study, DPMC was in the maturity stage except for the year 2009 (decline phase). The factors that we studied in this study had no significant relationship with the OLC index. According to these results, DPMC can set an appropriate implementation, such as lowering the DPR and current cost or increasing fixed assets to improve its financial performance. References 1. Ebadi T. The effect of corporate life cycle on the accounting conservatism. Scinzer Journal of Accounting and Management. 2016;2(1):1-11. 2. Anthony JH, Ramesh K. Association between accounting performance measures and stock prices: A test of the life cycle hypothesis. Journal of Accounting and economics. 1992;15(2-3):203-27.

keywords : pharmaceutical company, organizational life cycle, financial performance, ,

Comparative study of sildenafil and losartan on pulmonary arterial hypertension

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abstract [66] : Introduction & Objective: Pulmonary blind disease is a cardiopulmonary disease that causes dilatation and hypertrophy of the right ventricle. The most common and main cause of corpulomelia is pulmonary hypertension. Due to the effect of sildenafil and losartan on reducing pulmonary hypertension, we aimed to compare the efficacy of these two drugs in the treatment of pulmonary blindness. Methods: In this clinical trial study, 40 patients with secondary corpulomele were studied. Doppler echocardiography was performed before entering the study and pulmonary artery pressure was measured. The patients were divided into two groups. One group received losartan and the other group received sildenafil. At the end of 6-month hemi-therapy period, pulmonary pressure echocardiography was again measured in both groups and the results were compared and analyzed. Results: In this clinical trial study, a total of 40 patients with secondary corpulomele were studied. In the losartan group, there were 2 males (60) and 5 females (40) and in the sildenafil group 2 males (1) and 2 females (1). There was a significant difference between zinc pressure after treatment in the Losartan and sildenafil groups ($p < 0.001$). Conclusion: Pulmonary arterial blood pressure was significantly decreased in both groups after sildenafil and losartan. This demonstrates the success of both drugs in lowering pulmonary arterial blood pressure. And according to the numbers obtained, the pulmonary arterial blood pressure caused by sildenafil is greater than about losartan (about 5 times).

keywords : Corepo lemonel disease, Losartan, Sildenafil, Pulmonary artery pressure, Treatment

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

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abstract [122] : Introduction: Bacteria have become resistant to antibiotics as a result of bacteria`s genetic changes, and extensive use and prescription of these medications in community and hospitals have exacerbated the threat. Many complications will occur due to antimicrobial resistance so it`s vital to take action against that. This study aimed at investigating the correctness and reasonability of prescription of four antimicrobials in Ayatollah Taleghani hospital. Method: Cross-sectional prospective study was conducted in Taleghani Hospital, Tehran, Iran. Totally 121 patients from 3 wards of Intensive Care Unit, general surgery and vascular surgery, with a variety of underlying diseases, entered the study during 3 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. Results: In the Intensive care unit, the most prevalent antibiotics were Vancomycin (90%) and Caspofungin (10%); in vascular surgery unit, Vancomycin (88.89%) and Caspofungin (11.11%) has high rate of administration and finally in general surgery ward Vancomycin (100%) and Caspofungin (0%) was the most common type of antibiotics. This study showed antibiotic Therapy was started for 61.16% patients based on empiric therapy, and microbiological cultures were utilized only for 38.84% of the patients. 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). References: Salehifar E, Babamahmoodi F, Alikhani A, Ganji R, Fazli M. Drug Utilization Evaluation of Vancomycin in a Referral Infectious Center in Mazandaran Province. J Pharm Care. 2(2):55-59. Hamishehkar, H., et al. (2015). "Drug Utilization Evaluation of Vancomycin in a Teaching Hospital in Tabriz-Iran." Pharm Sci 21(1): 25-29. Ayubi MS, Elyasi S, Jannati M, Vahdati-Mashhadian N, Saberi MR, Naderi HR, Mohammadpour AH. Vancomycin Utilization Evaluation in a Tertiary Teaching Hospital in Mashhad, Iran. J Pharm Care. 5(3-4):44-48. Corresponding author email address: asalnajafi100@yahoo.com-orcid.org/0000-0003-3500-0978

keywords : Antibiotic Stewardship Program, Antibacterial agents, Drug Resistance, Caspofungin, Vancomycin

Country Pharmaceutical Situation Based on World Health Organization Indicators: Evidence from an Upper-Middle Income Country

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abstract [186] : Introduction: Evaluating the performance of national authorities has a pivotal role in the development of evidence-based policy making. Regarding the complexity of pharmaceutical sector and its serious impacts on public health, Food and Drug Administrations' performance should be evaluated at regular intervals. This study aims to depict a comprehensive picture of Iranian pharmaceutical situation as well as its structural gaps. Methods: In this cross-sectional descriptive study, inspired by indicators proposed by world health organization (WHO), a checklist was developed with six component topics and 239 indicators. These topics consider the existence and performance of six key structures, including national drug policy (NDP), regulatory system, medicines supply system, medicine financing, production and trade, and rational use of drugs (RUD). Afterwards, the translation validity as well as face and content validity of the research tool was confirmed by relevant experts. The data were collected by referring to official documents and reports, as well as key informants in Iranian Food and Drug Administration (IFDA). Results and discussion: The scores for structures of IFDA according to the WHO indicators are 80% in NDP, 61.5% in regulatory system, 64.7% in medicines supply system, 84.8% in medicines financing, 60% in production and trade, and 71.7% in RUD. Conclusion: Considering the status of structures and processes, IFDA should attempt to provide an action plan commensurate with the NDP, modify the regulations in terms of its responsibilities and authorities, develop transparency and accountability in its offices, publish national essential medicines list, and revise motivational and punitive policies to develop RUD. References: -Morgan S, Kennedy J, Boothe K, McMahon M. Toward an understanding of high performance pharmaceutical policy systems: a "Triple-A" framework and example analysis. Open Health Serv Policy J. 2009;2(1). -Precious M, German V. WHO Operational Package for Assessing, Monitoring and Evaluating Country Pharmaceutical Situations. Geneva; 2007.

keywords : Pharmaceutical Policy, Systems Analysis, World Health Organization, supply and distribution, Pharmaceutical Economics

Model Development of Food and Drug Administration Performance Measurement through Integrating Pharmaceutical Good Governance and Resiliency in Pharmaceutical Sector approaches

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abstract [187] : Introduction: Organizational performance is a function of the principles that each organization has to observe in various circumstances, and it is also a function of managing uncertainties. This study was aimed to determine what dimensions should be considered to measure the performance of Iranian Food and Drug Administration (IFDA) the organization with the goal of establishing the principles of optimal governance as well as resilience to uncertainties. Moreover, the research was focused to develop an optimized model for improving IFDA governance. Methods: In the first phase of this study, through semi-structured interviews and using thematic analysis, the performance dimensions of IFDA were identified based on Pharmaceutical Good Governance and Resiliency in Pharmaceutical Sector approaches. In the second phase, the extracted dimensions were weighted by a Thurston questionnaire trough Delphi method in two rounds and the final model of organization performance measurement was depicted based on Interpretive Structural Modeling. Results and discussion: In the first step, after identifying the ten principles of good resilient governance (GRG), these dimensions were categorized into three levels, which "transparency", "quality and rule of law", and "anti-corruption measures" were the most important principles for IFDA. Secondly, based on the consensus, and in terms of hierarchy of implementation, GRG model is explained as "Practicing governance based on the principles of Organizational reengineering, Transparency, Quality and rule of law, Responsiveness, Justice, Anti-corruption measures, Stakeholders participation, Effectiveness and efficiency, Resiliency, and ultimately Sustainability". Conclusion: By implementing GRG model, IFDA has been able, over successive periods, to assess the extent of its progress in establishing an optimal governance system and to measure its impact on IFDA inherent tasks. Furthermore, it facilitates the engagement of stakeholders in order to achieve the strategic goals of the pharmaceutical system and helps policy makers to break free from the recurring and foreseeable challenges.

keywords : Good Governance, Resiliency, Good Resilient Governance, Performance Measurement, Food and Drug Administration

Household Cleaning Products Use-pattern: A National Survey in Iran

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abstract [205] : Introduction: Widely and frequent use of common household cleaning products may be an important factor on families' hygiene as well as on their expenditures. However, there is a little knowledge about use-patterns of these products. This study was aimed to extract the use-patterns of household cleaning products used by Iranian population. Method: Use-patterns of 60 kinds of products such as laundry detergent, toilet cleaner, clothes softener, and carpet cleaner liquid were investigated in 1645 households in eight cities of Iran based on Cochrane sampling by means of a validated questionnaire. The data was analyzed with SPSS24 regarding age, sex, education, religion, total household expenditures, and ethnicity of the population. Result and discussion: This study provides significant information about household cleaning products usage-patterns based on socio-demographic strata. The response rate to questionnaires was 82.2%. More than 74% of respondents were women and 77.5% of households consisted of 3 to 5 members. Based on One-Way ANOVA test with a significant p-value<0.05, dishwashing liquid (used by 95.8% of the population), laundry detergent (86.3%), bath cleaner (82.0%), glass cleaner spray (67.5%), and air freshener spray (59.1%) were the most frequent products used. Besides, in all products categories, people prefer to buy domestic products (with more than 91% of market share) over imported ones. In addition, Supermarkets as well as hypermarkets, and healthcare shops are the most favored place of purchase by consumers with average 41% and 17% of market-share, respectively. Moreover, cost of household cleaning products has made 8.8% of overall monthly household expenditures. Conclusion: This is the first study providing usage pattern of household cleaning products in Iran. Considering the wide usage of such products, their impact on families' health, and the consumer's preferences, companies and health authorities can take advantage of these results to develop strategies and regulations to optimize use-patterns.

keywords : Household cleaning products, Home care products, Use pattern, Household survey,

Evaluation of knowledge, attitude and practice of community pharmacists in Tehran about oral and dental healthcare and related products

Dr Mahshid Raftari (),

abstract [129] : One of the major objectives of this study was to assess the knowledge, attitude and practice of community pharmacists in Tehran about oral and dental healthcare and related products. To assess the knowledge and attitude, a questionnaire whose validity was confirmed by experts and pharmacists familiar with the subject with a reliability that was respectively confirmed using Cronbach`s alpha higher than 0.6 (0.792) was used. To assess the performance, pre-designed scenarios confirmed by several pharmacist professors was used. 200 pharmacists, 55% men and 45% women with an average age of 37.59 years participated in this study. The required information was collected in September of the year 1395 to April of the year 1396. The results of this research show that the knowledge and practice of community pharmacists about oral and dental healthcare and related products are near to poor. However, considering their attitude, most pharmacists in this study admitted that the knowledge of pharmacists due to lack of sufficient trainings in pharmacy courses is not enough and they would be happy with taking retraining courses. Also, in examining the relationship between demographic indicators and the level of knowledge, attitude and practice of pharmacists, there is a significant relationship between the level of experience and performance ensuing a decrease in the practice level by an increase in the experience. It is worth noting founder pharmacists had weaker practice. As the final result, it can be said that the level of knowledge and practice standards of pharmacists in the field of oral and dental healthcare is not desirable, and this suggests the need for more education in them. As a result, carrying out improvement in pharmacists` training courses in this field may hopefully promote public health.

keywords : oral healthcare, knowledge, attitude, practice,

Can we reduce chemotherapy costs in breast cancer by using gene expression assays?

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abstract [69] : Introduction: Breast cancer is the most common cancer in women, which adjuvant treatments impose a financial burden on the health care system and patients. So, identifying patients for whom chemotherapy would be beneficial can reduce unnecessary services and costs. Oncotype DX testing is the prognostic assay that predicts the likelihood of chemotherapy benefit in breast cancer as well as the risk of distant recurrence. Methods: This study, based on rapid health technology assessment, explored the use of Oncotype in the prognosis of breast cancer compared to alternative methods in terms of effectiveness and economic consequences. PubMed, Scopus, Web of Science and Cochrane databases have been searched and only studies about the use of the Oncotype test in breast cancer have been included. Results and Discussion: The results of the 32 related studies showed that the difference in outcomes was negligible cross Oncotype and other gene expression profiling tests, but these differences were significant compared to standard treatment. Also, Oncotype testing will be cost-saving when used for patients under chemotherapy. However, using this test for all patients may not be cost-saving depending on the number of patients who switch from hormone therapy to chemotherapy and vice versa. Conclusion: Using gene expression assays such as Oncotype could be helpful in decision making about treatment, especially in including or not chemotherapy as part of the treatment plan.

keywords : breast cancer, chemotherapy, Oncotype DX, cost,

Use of Suprathel® for burns: a systematic review

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Abstract [74] : Introduction: Accelerating the process of wound healing, reducing the risk of infection, and decreasing pain and discomfort of the burn area are very important goals of burn treatment. In order to achieve these goals, the use of biosynthetic wound dressings has dramatically increased in recent years. Suprathel® as a biosynthetic wound dressing is used not only to treat partial-thickness burns but also to treat split-thickness skin graft (STSG) donor sites, full-thickness wounds, large-scale abrasions, and scar revisions. Methods: This study systematically reviews empirical evidence on the application of Suprathel in burns. Related keywords such as Suprathel, Effectiveness, Safety, and Cost were searched in PubMed, Cochrane, Scopus, and Embase databases. Finally, 14 publications were identified based on the inclusion and exclusion criteria. Results and Discussion: The findings were reported according to different aspects of Suprathel use i.e. safety, effectiveness, and cost-effectiveness. Regarding the safety and effectiveness of Suprathel use, we found desirable results, particularly for partial thickness burns and split-thickness skin graft donor sites. However, with regard to the cost-effectiveness of Suprathel use the results were not conclusive. Conclusion: Despite the desirable features of Suprathel in terms of effectiveness, safety, and ease of use, the cost factor is one of the important limitations of the use of this material. However, due to the lack of comprehensive studies on the quantification of all factors, there is insufficient scientific evidence to make reliable conclusions from this systematic review.

keywords : Suprathel, Burn, Dressing, Effectiveness, Cost

Can we reduce chemotherapy costs in breast cancer by using gene expression assays?

Dr Farimah Rahimi (Health Management and Economics Research Center, Isfahan University of Medical Science, Isfahan, Iran), Dr Reza Rezayatmand (Health Management and Economics Research Center, Isfahan University of Medical Science, Isfahan, Iran),

abstract [69] : Introduction: Breast cancer is the most common cancer in women, which adjuvant treatments impose a financial burden on the health care system and patients. So, identifying patients for whom chemotherapy would be beneficial can reduce unnecessary services and costs. Oncotype DX testing is the prognostic assay that predicts the likelihood of chemotherapy benefit in breast cancer as well as the risk of distant recurrence. Methods: This study, based on rapid health technology assessment, explored the use of Oncotype in the prognosis of breast cancer compared to alternative methods in terms of effectiveness and economic consequences. PubMed, Scopus, Web of Science and Cochrane databases have been searched and only studies about the use of the Oncotype test in breast cancer have been included. Results and Discussion: The results of the 32 related studies showed that the difference in outcomes was negligible cross Oncotype and other gene expression profiling tests, but these differences were significant compared to standard treatment. Also, Oncotype testing will be cost-saving when used for patients under chemotherapy. However, using this test for all patients may not be cost-saving depending on the number of patients who switch from hormone therapy to chemotherapy and vice versa. Conclusion: Using gene expression assays such as Oncotype could be helpful in decision making about treatment, especially in including or not chemotherapy as part of the treatment plan.

keywords : breast cancer, chemotherapy, Oncotype DX, cost,

Reducing medication errors by applying risk management in educational community and hospital pharmacies in Iran

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Abstract [94] : The purpose of this study was to developing a model for a risk management design for avoiding the medication errors in educational community and hospital pharmacies. Our purposes were to present convenient implements for the community and hospital pharmacists to manage such errors and a practical example of recognizing risk minimization policies. Following the brainstorming method, the most important medication errors were recognized. Using the affinity diagram, those were grouped into prescribing, dispensing and administration errors. Within the prioritization matrix, these errors were categorized using as criteria: patient safety, significance for pharmacists, human resources required and the cost of applying a risk minimization policy. The medication errors were categorized based on the final score and risk management policies were offered for each of them. The risk management plan is critical in preventing and reducing medication errors and can be an important part in the strategy of quality assurance in hospital and community pharmacies activities.

keywords : medication error, risk management, educational pharmacy, ,

THE COST EFFECTIVENESS OF DORNASE ALFA VERSUS INHALED TOBRAMYCIN IN THE MANAGEMENT OF PATIENTS WITH CYSTIC FIBROSIS

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abstract [118] : Chronic lung infection with Pseudomonas aeruginosa occurs in approximately 50% of patients with cystic fibrosis (CF) which compromises lung function, and significantly contributes to the increased healthcare costs. Inhaled tobramycin, used to manage P. aeruginosa infection in CF patients. However, guidelines suggest dornase alfa as the only mucolytic agent that showed improvements in lung function and a reduction in infection in patients with CF. Hence, this analysis aimed to evaluate the cost-effectiveness of Inhaled tobramycin versus nebulized dornase alfa for the management of patients with CF from the perspective of the Iranian National Health Service (NHS). Methods: A patient-level simulation model was developed over a 10-year time horizon. A Markov structure was used to consider transitions between health states, defined principally by levels of percent predicted of FEV1. Model parameters were informed by patient-level data from randomized controlled trials together with the best available evidence from the literature. Resource use and costs associated with drug acquisition and the management of exacerbations were drawn from reference sources and expert opinion. Both costs and benefits were discounted annually at 5%. All costs were presented in 2018 US dollars. Extensive deterministic and probabilistic sensitivity analyses were performed. Results dornase alfa is expected to produce higher quality-adjusted life-years (QALYs) than inhaled tobramycin (5.618 vs. 5.388). In addition, dornase alfa is expected to be associated with marginally higher cost than tobramycin ($118,617 vs. $118,002). in consequence, the ICER for dornase alfa versus tobramycin was found to be approximately $2,673 per QALY gained. Sensitivity analyses indicated that results were sensitive to drug acquisition cost. Probabilistic sensitivity analyses showed dornase alfa to be cost-effective treatment in 78.5% of 1000 simulations at the threshold of %5,400 per QALY. Conclusion dornase alfa can be considered a cost-effective bronchodilator compared with inhaled tubramycin in the management of patients with CF for the NHS

keywords : Cystic Fibrosis, Dornase alfa, pharmacoeconomic analysis, ,

The Cost-effectiveness and Cost-utility Analysis of the Use of Enoxaparin Compared with Heparin for Venous Thromboembolism Prophylaxis in Medical Inpatients in Iran

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Abstract [48] : Purpose: The present study aims to evaluate the cost-effectiveness and cost-utility of using Enoxaparin compared to Heparin in Venous Thromboembolism (VTE) prophylaxis in medical inpatients, from payer's perspective in Iran. Methods: To evaluate cost-effectiveness and cost-utility of the compared interventions, decision tree modeling technique was used. The main considered outcomes were Quality-Adjusted Life Years (QALY) for Cost-Utility Analysis (CUA) and Life Years Gained (LYG) for Cost-Effectiveness Analysis (CEA). Costs and consequences were evaluated for a three-month period and reported as Incremental Cost-Effectiveness Ratios (ICERs). One-way and Probabilistic Sensitivity Analysis (PSA) were conducted to evaluate the robustness of the model due to uncertainty in the input data. Results: Baseline ICERs were 60,376 USD/QALY and 71,077 USD/LYG per patient (with public tariff). The results of the sensitivity analysis showed the robustness of the model. Conclusion: As the estimated ICER per QALY is more than three times the reported Gross Domestic Product (GDP) per capita by world bank for Iran in 2017 ($5415), the use of Enoxaparin for VTE prophylaxis in medical inpatients doesn`t seem to be a cost-effective intervention compared to the use of Heparin in Iran.

keywords : Cost-effectiveness, Cost-utility, Enoxaparin, Heparin, Venous thromboembolism,

Toxico-epidemiological study of acute Amphetamine-type stimulant intoxication in Isfahan, Iran

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abstract [197] : Introduction Use of psychoactive substances, specially methamphetamine and amphetamine-type stimulants (TTS), is among the most abuse problems in Iran. These psychoactive substances are highly addictive and have lots of destructive effects on different parts of the body especially on the central nervous system. In recent years this kind of drug abuse, has been widely spread among Iranien youth. This study was conducted to determine toxicoepidemiological characteristics of ATS poisoning in Isfahan, Iran. Methods In this cross-sectional study, medical record of all ATS poison people admitted to Khorshid University Hospital between 2013-2016, were reviewed and cases with more than 40% missing data in medical history were excluded. Data were statistically described and possible correlations between epidemiological features and consequences were analyzed using Chi-square test and fisher exact test for qualitative variables and Mann-Whitney test for abnormal continuous variables. To evaluate factors effecting length of hospitalization linear regression model was performed respectively. Analysis carried out at 5% confidence intervals using SPSS. Results Of the 294 cases poisoning, most of them were committed intentionally and due to abuse of methamphetamine (97.3%). The age group of 18-45 (87%) and the northern region of Isfahan (43.2%) had the highest frequency of poisoning. The most common symptom among patients was agitation (24.8%). In this study, 98/6% had been discharged without complications. Death was reported in 4 cases (1.4%). Patients gender ($p<0.001$, B= 0.181), material status ($p<0.001$, B=120), route of exposure ($p<0.001$, B=455) and using other drugs with ATS ($p<0.001$, B=0.68) effected the length of patient hospitalization. Conclusion The highest poisoning occurred in males, free_working, young and middle aged (18-45 years old), and in the north of Isfahan city. Having male gender, being single, using any other drugs with ATS and using injection or inhalation as route of exposure, increases the length of hospitalization.

keywords : poisoning, toxicoepidemiology, amphetamine, Isfahan,

Assessment Of QTc interval changes in patients undergoing spinal anesthesia for elective surgery

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abstract [150] : Abstract: Background and Aim: A prolonged QT interval is one of the causes of sudden death and the incidence of dangerous arrhythmias. It is needed to study more the increasing frequency of spinal anesthesia and unknown causes of some of its complications, such as sudden and unpredictable death. This study aimed at examining the QTc interval changes in patients undergoing spinal anesthesia for elective surgery. Materials and Methods: This is an analytical study conducted in 2018. This study examines QTc interval changes before, during and after the spinal anesthesia. A convenience sampling method was used to select a total of 177 patients aged 20-60 years undergoing spinal anesthesia for elective surgery and enrolled in the study after obtaining their informed consent. The electrocardiogram (ECG) was taken three times before and 10 and 150 minutes after spinal anesthesia. Data was analyzed using SPSS ver. 14.5. P-value<0.05 was considered as the significance level. Findings: The mean intraoperative (374.36 ± 28.99) and postoperative QT interval (377.74 ± 30.52) was higher than the preoperative QT interval (365.35 ± 30.32), which was statistically significant (P = 0.01). The mean postoperative QTc interval (413.15 ± 25.63) was higher than the preoperative (407.88± 29.11) and intraoperative QTc interval (408.13 ± 26.22), which was statistically significant (p=0.03). Conclusion: Marcaine-induced spinal anesthesia increased the QTc interval in the normal range, which was statistically significant. Spinal anesthesia had no effect on the PR interval.

keywords : Spinal Anesthesia, QTc interval, sudden death, ,

Study of the satisfaction rate of patients referred to the educational pharmacies of the Shahid Beheshti School of Pharmacy and its possible explanatory factors

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Abstract [52] : Introduction: Due to delivery of drugs used for rare diseases and drugs in short supply as well as high workload; governmental educational pharmacies have an exclusive importance in fulfilling expectations and satisfaction of customers. This study was designed to determine satisfaction rate of customers referred to the educational pharmacies of the Shahid Beheshti School of Pharmacy and to detect its possible explanatory factors. Methods: A descriptive and analytical cross-sectional survey was designed. Customers referring to the educational pharmacies of Shahid Kazemi and 22 Bahman, Tehran, Iran, entered into the study by a non-probability sampling method. A standard questionnaire, developed in an earlier study(1) was applied to measure satisfaction of the customers. This questionnaire includes three main domains to determine satisfaction of customer from a) pharmacy environment, b) quality of services and c) staff behavior. In addition, sociodemographic characteristics of the customers were recorded. The SPSS, version 22.0, was used for data analyses applying appropriate statistical tests and a multivariate linear regression analysis. Results: Overall, 420 customers, 302 (71.90%) from Shahid Kazemi and 118 (28.10%) from 22 Bahman pharmacies entered into the study. Global satisfaction rate (out of 5.00) for the Shahid Kazemi and 22 Bahman pharmacies were 4.48±0.64 and 4.43±0.70, respectively, which could be considered very satisfactory. There were a significant positive correlation and overlapping between satisfaction of the customers from pharmacy environment, quality of services, and staff behavior. Furthermore, in both pharmacies, prescription waiting time was the most important explanatory factor associated with the satisfaction of the customers with all three satisfaction domains. Conclusion: Our findings shows that along with initiatives to improve each main domain of customer satisfaction, proper strategies are also required to impact all three domains at the same time. In interpretation of our findings, one should consider the specific administrative nature of governmental pharmacies and the particular services delivered by them.

keywords : Customer satisfaction, Educational pharmacy, Explanatory factors, ,

Trend Analysis of the Defined Daily Dose (DDD) in Various Types of Insulin in Iran Health Insurer, 2019-2021

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abstract [195] : Trend Analysis of the Defined Daily Dose (DDD) in Various Types of Insulin in Iran Health Insurer, 2019-2021 Introduction The purpose of this paper is to analysis the prescription and utilization of various types of insulin in form of the DDD in Iran Health Insurer over the past three years and to predict the next three years. Method This is an analytical, and retrospective cross-sectional study. The study unit consisted of the DDD of various types of Insulin. Insulin Types have covered by IHIO were considered which contained 34 ATC codes by the WHO Index for 2019. In this study, the DDD of insulin prescription and or utilization in diabetes patients covered by the IHIO in each three years and then the DID index were determined. The purpose of the DID index was to exclusion demographic factor in Insulin estimation. This study was conducted to analyze past utilization trends using time series as statistical techniques and trend analysis for estimating utilization over the next three years. In this study, no sampling was performed and the entire statistical population was used. Results In this study, the results of the cost and utilization amount of various types of Insulin with ATC code were analyzed based on assumptions of constant condition and past three years' flow. In the next step, by trend analysis, the cost and utilization of various types of Insulin covered by IHIO, were estimated during the 2019-2021. Conclusion The cost and utilization of various types of Insulin over the next three years, can affect and improve planning, budgeting and any decisions of insulin cost and quality related.

keywords : Defined Daily Dose (DDD), DDD per 1000 inhabitants per day (DID), Insulin, Prescription and Utilization,

Evaluating of rate and cost of dispensing errors in community pharmacies in Tehran

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abstract [202] : Introduction: Prescribing and dispensing errors are among of important and common causes of medication errors. The aim of this study is to investigate the occurrence rate of dispensing errors in community pharmacies in Tehran and evaluate the following costs. Method: This descriptive-analytic study is cross sectional. The data was collected through exit surveys and reviewing the medications dispensed to patients and also interview with pharmacists. Then, the probable cost of dispensing errors was estimated. SPSS-25 software was used to analyze the data. Results: A total of 275 pharmacies were entered the study. Nine medication errors at the incidence rate of 3.3%, which included errors in the name of the medication (2), medication dose errors (2), error in the quantity of medication (1) and labelling errors (4), were recognized. Eight errors (2.91%) were related to private daily pharmacies and one error (0.363%) was related to night pharmacies, but no error were found at the hospital pharmacies. The therapeutic and non-therapeutic cost of 9 medication errors came to a total of 5,288,384 Rials, and 587,598 Rials per error. Considering the rate of dispensing errors and the total prescription in a year showed that 680 trillion Rials would be the cost of this phenomenon per year. Furthermore, according to pharmacists' interview, physician`s illegible handwriting (95.6%), patient`s urgency in receiving the medication (60.7%), manpower experience (45.5%), distractions (39.6%), improper orders of medications on the shelves (26.9%) and manual prescription pricing (15.6%) were the most important causes of near-miss dispensing errors. Conclusion: The results of this study showed that the probability of dispensing error is less and most of them included small errors, however, in comparison with other countries is still suboptimal. Recognizing the types of dispensing errors and underlying causes can provide a picture of the existing condition to policy makers and other practitioners.

keywords : Dispensing errors, medication error cost, Community Pharmacy, Patient Safety,

Cost-effectiveness analysis of Topotecan, Pegylated liposomal doxorubicin hydrochloride, and Paclitaxel as second-line chemotherapy in the treatment of platinum-resistant ovarian cancer in Iran

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abstract [160] : Introduction: Ovarian cancer is the eighth most prevalent cancer in Iranian women with the incidence rate of 3.9 per 100000 and most of the patients are younger than 45 years. The aim of this study was to determine the cost-effectiveness of Topotecan, PLDH and Paclitaxel as second-line therapies to treat platinum-resistant/refractory ovarian cancer patients in Iran. Method: A Markov model with 4 states was developed to represent the medical and economic consequences of the administration of Topotecan, PLDH and Paclitaxel with the perspective of payer. Time horizon of the analysis was 3 years. A cohort of 1000 patients with platinum-resistant epithelial ovarian cancer who had failed the first-line chemotherapy treatment was utilized to assess the incremental cost-utility of Topotecan, PLDH and Paclitaxel. Quality-adjusted life-years (QALY) were used to measure the treatment effectiveness. Overall survival (OS) and progression-free survival (PFS) data were derived from the literature and cost data were retrieved from local experts and national tariffs. Discount rate of 7.5% and 5% was employed to costs and outcomes, respectively. Both deterministic and probabilistic sensitivity analysis (PSA) were conducted to show the robustness of the model. Result: The total cost per patient for Topotecan, PLDH and Paclitaxel were 702‹289‹993, 749‹920‹149 and 808‹151‹434 (rial) respectively. The discounted QALYs were 0.53, 0.44 and 0.32 for Topotecan, PLDH and Paclitaxel respectively. From the payer perspective, treatment with Topotecan will result in 0.09 higher QALYs and cost saving at least equal to 47‹630‹156 rials for each patient. Thus Topotecan was the cost-effective option among the arms of the study. Results from the PSA showed that in 86% of the simulations, Topotecan was dominant compared to the other arms. Conclusion: Results showed that Topotecan is the most cost effective option in treatment of patients with Platinum-resistant Ovarian Cancer. The sensitivity analysis further indicated the robustness of the model.

keywords : Platinum-resistant, Ovarian Cancer, Markov model, Overall survival, Progression-free survival

The Effect of Probiotic Supplementation on Inflammatory and Metabolic Response and Disease Activity in Patients with Systemic Lupus Erythematosus: A Randomized Placebo-controlled Trial

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abstract : lSummary Introduction Systemic lupus erythematosus (SLE) is a chronic multisystem inflammatory autoimmune disease. Probiotic has potent immunomodulatory properties that support its use in the treatment of autoimmune conditions, including SLE. .This trial was performed to evaluate the effects of probiotic intake on inflammatory and metabolic condition and disease activity before and after Probiotic supplementation. Methods This randomized double-blind placebo-controlled clinical trial was conducted among 60 SLE patients. Participants were randomly allocated into two groups to receive either a probiotic capsule (n = 30) or placebo containing starch (n = 30) for 12 weeks. Outcome measures included assessment of alterations in levels of proinflammatory cytokines and metabolic condition, and improvement in disease activity before and after 12 months of supplementation. Disease activity was measured by the SLE Disease Activity Index. Results Compared with the placebo, probiotic intake improved the SLE Disease Activity Index (−0.3 ± 0.6 vs. +0.1 ± 0.3, P = 0.001and depression anxiety and stress scale (−16.5 ± 12.9 vs. −6.2 ± 11.0, P = 0.001). In addition, changes in high-sensitivity C-reactive protein (−1.3 ± 3.5 vs. +0.4 ± 1.4 μg/mL, P = 0.01), plasma nitric oxide metabolites (+1.0 ± 7.9 vs. −6.0 ± 8.3 μmol/L, P = 0.002) and malondialdehyde (MDA) (+0.009 ± 0.4 vs. +0.3 ± 0.5 μmol/L, P = 0.04) in the probiotic group were significantly different from the changes in these parameters in the placebo group. Additionally, the consumption of probiotic capsule significantly decreased serum insulin (−2.9 ± 3.7 vs. +1.1 ± 4.8 μIU/mL, P < 0.001), homeostasis model of assessment-estimated insulin resistance (−0.6 ± 0.8 vs.+0.2 ± 1.0, P = 0.001), Beta cell function (−12.1 ± 15.5 vs. +4.4 ± 17.5, P < 0.001) and total-/HDL-cholesterol (−0.1 ± 0.3 vs.0.1 ± 0.3, P = 0.02), and significantly increased quantitative insulin sensitivity check index (+0.01 ± 0.02 vs. −0.005 ± 0.01, P < 0.001) and HDL-cholesterol levels (2.7 ± 3.4 vs. 0.9 ± 2.9 mg/dL, P = 0.02) compared with the placebo. Conclusions Our study demonstrated that the use of probiotic capsule for 12 weeks among subjects with SLE had favorable effects on SLE Disease Activity Index, inflammatory and metabolic condition and show a tendency toward subsequent clinical improvement.

keywords : lSystemic Lupus Erythematosus, Probiotic, Inflammatory and Metabolic Response, Disease Activity,

Imatinib and Nilotinib Utilization in Iran

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Abstract [173] : Background: Tyrosine Kinase Inhibitors (TKIs) are the cornerstone of chronic myeloid leukemia (CML) treatment. Imatinib and nilotinib, first generation and second generation TKIs, has been mainly used in treatment of CML in our country. However, their consumption in Iran has not been studied since their entrance to our market. Methods: The study was conducted in the two steps. First, annual consumption and trend of use was determined using Iranian pharmaceutical wholesale data since entrance to market until 2017. Average daily dose (ADD) of imatinib and nilotinib for main indication was defined as 0.6 g and 0.8 g, respectively. Total annual consumption was calculated as number of ADDs used per 1000 inhabitants per day. Compound annual growth rate (CAGR) was estimated for each drug using the aforementioned metric. In the second step, we obtained information from 13 Aban pharmacy records on nilotinib and imatinib prescriptions filled during 2011-2014. Extracted data included number of prescriptions, number of drugs per prescription, type of insurance company and insurance coverage. For descriptive analysis and analytical data SPSS (Version 24) and for trend analysis Joinpoint regression (Joinpoint, version 4.7.0.0) were used. Result: Imatinib consumption increased with a statistically significant positive slope from 2003 to 2013 and a non-significant decreasing trend from 2013 to 2017. Since nilotinib entrance to our market in 2011, its consumption had an ascending trend until 2017. This trend had a steep statistically significant slope from 2014 to 2017. CAGR of imatinib and nilotinib was 0.3 and 0.58, respectively. Among 8663 prescriptions, 89.5% were for imatinib and the rest for nilotinib. Prescribing rate of nilotinib showed an ascending trend during 2011-2014 while the rate of imatinib prescribing did not show a significant trend in this period. Comparison of changes in insurance coverage of imatinib and nilotinib in studied prescription showed that coverage of nilotinib costs by insurance improved significantly from 15% to 78% (average percentage). However, imatinib insurance coverage changed from 70% in 2011 to 83% in 2014. ($p<0.001$). For both of imatinib and nilotinib, we observed a significant difference in the mean number of prescribed drugs among different insurance coverage. The average number of drugs was significantly higher for prescriptions for which 100% of the cost was covered by insurance company (p-value <0.001 for all comparisons). Conclusion: Imatinib and Nilotinib consumption increased since their entrance to our market. However, nilotinib showed more substantial increase which could have been affected by insurance policies.

keywords : Imatinib, Nilotinib, Tyrosine Kinase Inhibitors, consumption, Utilization

Modified POPIs criteria to assess the quality of prescribing to pediatrics

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Abstract [35] : Objective: To evaluate the applicability POPI criteria and modify the tool, where necessary, for application to iranian paediatric practice and therefore to facilitate further evaluation of the tool using prescribing data. Methods & Materials: In the first phase of this study, the only criteria of inappropriate drug prescription (POPI) in a Delphi study, based on the RAND / UCLA model, was translated into Persian and for adoptation was sent to a group of specialists including pediatricians and pharmacologists and Clinical Pharmacists. The indexes were modified in accordance with the views and suggestions of the commission of experts. Then, with the formation of expert meetings and the presence of faculty members of the university, the modified instrument was technically finalized based on their views and opinions In order to validate this tool and determine the prescription pattern and prevalence of potentially inappropriate medications among pregnant women, a cross-sectional study was conducted in a one-year database of a selected pediatric population in Khorasan Razavi and Azerbaijan sharqi provinces.. Results: According to expert's opinions, the POPI criteria and the designed table, were modified. Considering the findings, we had an average of 0.35 errors for each prescription, which is not relatively high. The rate of at least one inappropriate prescribe in prescriptions in accordance with indigenous criteria was 69%, which was mainly primarily the administration of a drug other than acetaminophen as the first line of pain or fever treatment (8.46%), the second was oral or nasal decongestants (5.36%), and Thirdly, were sputum vectors before the age of 2 (4.28%).). Conclusion: The results of the present study demonstrated the difficulties faced by physicians to appropriate prescription for pediatrics. The modified POPI (IRAN) criteria comprise the first screening tool available to assess rational prescribing for children in hospital and outpatient settings. Clinical validation and reliability studies are needed and planned by the authors in order to evaluate the usability and reliability of this tool, which it is hoped will be used to study the rational use of medicines in children in IRAN.

keywords : Inappropriate prescriptions, pediatrics, POPIs criteria, ,

The Effects of Synbiotic Supplementation on Thyroid Function in Hypothyroid Patients: A Randomized, Double-Blind, Placebo-Controlled Trial

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abstract [49] : Background & Aims: Hypothyroid disease, which is a major endocrine problem worldwide, characterized by impaired production of thyroid hormones. There is a positive link between thyroid homeostasis and the composition of gut microbiota. A limited number of studies have suggested the efficacy of probiotic products on levothyroxine metabolism and thyroid hormone activity. Therefore, the purpose of this study was to investigate the effect of synbiotic supplementation on thyroid function in subjects with hypothyroidism. Methods: This study was conducted as a randomized, double-blind, placebo-controlled trial involving 60 patients with hypothyroidism. Participants were randomly recruited into two groups to receive either 500 mg/d of synbiotic (n=30) or a placebo (n=30) for 8 weeks. Thyroid-stimulating hormone (TSH), free triiodothyronine (FT3), anti–thyroid peroxidase (Anti-TPO), levothyroxine dose (LT4 dose) were assessed at first and the end of intervention. Results: Thyroid-stimulating hormone concentration, and levothyroxine dose were significantly decreased after the 8-week intervention in the synbiotic group ($P< 0.05$), while there were no significant differences seen in the placebo group. In addition, FT3 at the end of intervention was significantly higher ($P = 0.001$) in both groups, although these changes were not significant between the two groups ($P = 0.259$). Moreover, no statistical significance was observed within or between groups in serum anti-thyroid peroxidase ($P > 0.05$). Conclusion: Synbiotic supplementation among hypothyroid patients for 8 weeks may have beneficial effects on thyroid function. Further studies with larger sample size and longer duration are needed to confirm the current findings.

keywords : Hypothyroidism, Synbiotic, Thyroid function, ,

Knowledge, Attitude and Practice of Patients with Multiple Sclerosis toward Their Medications: The Impact of Pharmacist-Based Pharmacotherapy Clinic

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abstract [79] : Introduction Pharmacists are the key members of the multidisciplinary team caring for patients with multiple sclerosis (MS) in drug treatment process. The potential benefits of pharmacist interventions in the concepts of patient education, may be optimize drug treatment and decrease hospitalization due to poor adherence. The goal of pharmacist' interventions regarding treatment process is supporting patients' decision-making and self-care management. The aim of this study is to evaluate the role of pharmacist in decrease interferon beta related problems in patients with MS. Methods In this interventional pre-post design study, we prepared a questionnaire consist of 17 items to assess the patients' knowledge on correct using of interferon-beta, and actions needed to reduce the side effects of medication and improve the control of the disease symptoms. After validity and reliability test based on opinions of a multidisciplinary panel, pre-testing on 15 patients, 15 items remained. One hundred patients, who were diagnosed with MS and receiving interferon-beta for at least one year, answer the questionnaire before and after pharmacist consultation. Results Patients' achieved scores before and after consultation, were 4.90±5.79 and 14.44±0.99 respectively. Although they have received this medication for at least 1 year, and there is a significant difference between knowledge of patients before and after pharmacist educational program (P< 0.001). Conclusion There are few studies evaluating the potential impact of pharmaceutical care on patients with MS. The results of this study show that most participants didn't have enough knowledge about interferon-beta while they received this medication for at least one year. Pharmaceutical care could improve the patient's knowledge, adherence and practice about their medications.

keywords : Pharmacists, Interferon-beta, Multiple Sclerosis, Pharmaceutical Services, Patient Care Team

Evaluation of Pharmacist-led Antibiotic Stewardship Program on Clinical and Economical Outcomes in a Tertiary Referral University Affiliated Hospital

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abstract [117] : Introduction One of the major issues in public health worldwide is antibiotic resistance, and it is associated with imprudent and inappropriate use of antibiotic. Antibiotic resistance can influence on morbidity, mortality, length of stay (LOS), and inappropriate cost. Antibiotic stewardship program (ASP) is one strategy to counter antibiotic resistant organisms. Notably, ASP has positive Impacts on expenditure, utilization and outcome. Reports of ASP in Iranian hospitals are limited. Here, we present key elements that required for successful ASP implementation and evaluate the outcome of the comprehensive ASP. Methods The ASP team compromised 3 infectious disease specialists, 1 clinical pharmacist, and 4 hospital pharmacists. A cohort study of the ASP implementation for 4 broad spectrum antibiotics (meropenem, imipenem, vancomycin, and colistin) was performed in a tertiary referral university affiliated hospital in Tehran, Iran. We collected 200 patients before the ASP implementation and 200 patients by randomization method after ASP implementation. Clinical outcome, inappropriate antibiotic use, inappropriate cost, and antibiotic resistance were assessed between two periods. Results and Discussion A total 349 patients were assessed, of which 49% were in the interventional period. Baseline characteristics between the two periods were similar except for mean severity score (3.6 ± 2.8 pre vs. 4.2 ± 2.8 post $p < 0.032$). There was 18% decreased in inappropriate antibiotic use in this short period (P=0.172). LOS was shortened by 3.5 days (P=0.929). Inappropriate cost was declined from 87,586,500T (20853.93$) to 60,827,600T (14482.76$). Indeed, 26,758,900T (6371.17$) was saved in 6 month. Furthermore, antibiotic resistance decreased by 33.62%, predominantly XDR in this short period. Conclusion: These results demonstrate shifting toward a rational use of antibiotics, which can lead to clinical and economic benefits.

keywords : Antibiotic Stewardship Program, Antibiotic Resistance, Inappropriate Antibiotic use, Length of Stay,

Comparison between complementary dietary treatments of metabolic syndrome in Persian medicine and modern medicine

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abstract [112] : Background: Metabolic syndrome (Mets) is defined as a complex metabolic disorder with disturbance of glucose metabolism (insulin resistance, high blood glucose, and impaired glucose tolerance), central obesity and being overweight, abnormalities in serum lipid levels, hypertension, and atherosclerosis. The treatments for Mets is an important medical challenge. Therefore, the aim of this study is to compare the treatment of Mets in Persian and modern medicine. Methods: For this purpose, we evaluated the medicinal plants that affect the Mets, as well as the medications used in modern medicine to treat Mets. Result: In modern medicine the treatment is usually a combination of life style modifications and multi-drug diet. Many patients have a low tolerance and may even leave the treatment, as well as the risk of drug-drug interactions may increase in these treatment regimen. In addition, the cost of these treatment is often very high. Treatments may include anti-hyperlipidemia medications such as statins and/or fenofibrate; anti-blood pressure medications such as ACEI, CCB and/or a mixed alpha-beta-blocker; anti-diabetic medications such as sulfonylureas and/or thiazolidinediones; antiplatelet like aspirin. Occasionally, these supplements may also accompanied by appetite suppressants and antioxidant supplements. Therefore, a simple and cost-effective treatment or even pretreatment could be very beneficial. Recently, studies and researches on medicinal plants have greatly increased with the establishment of Persian Traditional Medicine schools. On the other hand, due to the economic conditions of the country and the high cost of drugs and raw materials, it is very important to have a low-cost treatment that is completely native. Medicinal plants have been in the center of attention for the following: their potential effect in improving and maintaining human health, low side effects, and low costs for thousands of years. These days, plants are regarded as a valuable source to treat the various components of MetS including obesity, hyperglycemia, hypertension, and dyslipidemia. For instance, cinnamon, garlic, grape, black cumin, rosemary, avocado, saffron, and … have shown promising effects on different symptoms of MetS. Conclusion: Herbal medicines showed therapeutic effects on regulating waist circumference, blood glucose, blood lipids, and blood pressure in this systematic review. This means herbal medicines have the potential to be complementary and alternative medicines for MetS. The use of an Iranian native medicinal plant instead of a multi-drug treatment that mentioned above causes greatly reducing the cost of treatment, improves patient cooperation and reduces the chance of drug interactions and side effects.

keywords : Persian medicine, traditional medicine, metabolic syndrome, foods, herbs

A Household Survey on Unused Medicines in Shiraz, Southern of Iran: Population Based Study

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Abstract [213] : Background: The surveys on household medicines are crucial to get accurate information on how people can be acquired drugs, and what medications are most frequently left unused by patients[1,2]. The purpose of this study was to assess the most frequent class of unused drugs based on ATC code, and the behavior pattern of people about how these medications are disposed. Methods: The objective of this community based cross-sectional study was to document household medicine storage practices in Shiraz, a Populated city in the south of Iran during 2017-2018. A total of 1035 participants were joined in the study. A multi-stage sampling method was used to select households. Data were collected with the help of a questionnaire and analyzed using descriptive statistics. Results: Of the 1035 households in the study, 338 (32.7) stored unused medicines. The most common classes of drugs based on ATC classification found in households were Nervous system (N=79 (7.6)), Respiratory system (R05=55 (5.3)), and Ant-infectives for systemic use (J=35 (3.4)). More than half of people claimed the reason for disposal medicines that did not use medications completely. The expired medicines were always disposed at the end of the expiry date by 436 families. Conclusion: Large amounts of expired and unused household medications accumulated in households. Also, it becomes to rise, so does the need for proper education amongst patients and health care professionals on appropriate medicines disposal in Iran.

keywords : Unused medication, Household medication disposal, Drug disposal, ,

Evaluation of medication adherence and inhaler technique in patients with COPD; a cross-sectional study

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Abstract [60] : Introduction: It is predicted that chronic obstructive pulmonary disease (COPD) will become the fourth leading cause of death worldwide by 2030. Patients' adherence to medications and correct inhaler technique in COPD is essential to optimize disease management. The aim of the present study was to evaluate the medication adherence and inhaler technique in a sample of patients with COPD. Methods: This observational study recruited COPD outpatients at the pulmonary clinic of Imam Khomeini Hospital complex, Tehran, Iran. Patients with COPD who received at least one inhaler on a scheduled basis were included. The validated Persian version of Morisky Medication Adherence scale (MMAS) was used to measure adherence to inhaler medications. Inhaler technique was evaluated using a separate validated checklist for each inhaler. The checklists were developed based on the drug leaflets, previous articles, patients educational materials and other resources. The validity of the checklists were examined by the expert panel consisting of clinical pharmacists and pulmonologists. Patients' inhaler technique was evaluated while they used a sample inhaler. Results and Discussion: Totally, 175 patients were included (mean age 59 years, 42.3% females). We found that 39.4% of patients had a low adherence (MMAS score< 6) to their inhaler medications. Patients' devices consisted of 192(62.3%) MDI/MDI with spacer and 116 (37.6%) DPI devices. We noted that 37.7% of patients had >30% error. The most frequent errors were observed in patient who used MDI plus spacer. Patients with a higher educational degree had a significantly lower average rate of errors (P=0.001). Conclusions: The results indicated that the non-adherence and improper inhalation technique was frequent in patients with COPD and due to the high burden of the disease, interventions are warranted.

keywords : Medication Adherence, Chronic Obstructive Pulmonary Disease, Inhaler Technique, ,

Affordability of Diabetes Medicines in Iran: A scenario- based assessment

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abstract [156] : Introduction: Evidence indicates that out-of-pocket payments for prescription medications are imposing a financial burden, reducing medication adherence, and worsening health outcomes, particularly among low- and middle-income patients with chronic diseases. Diabetes is one of the main four major non-communicable diseases (NCDs) is the 9th and16th leading cause of death in women and men in Iran, respectively. The aim of this study was to assess the affordability of diabetes medication on patients during medication therapy in the Iran health system context. Method: This paper presents a scenario-based assessment of diabetes medicines affordability in Iran, 2017. To do that, different medication therapy scenarios were defined in mono- and combination therapy and dose/schedule adjusted approaches. Then the affordability of each scenario investigated in type 1 and type 2 diabetes utilizing the World Health Organization/Health Action International Methodology, and the clinician opinions for registered diabetes medicines in Iran. We analyzed costs data during one month of chronic treatment. Data were analyzed for generic products and in the public sector_ As the dominant sector _. Results: The results show that from 38 diabetes medicines in IDL, 10, 4, and 13 cases are non- affordable in monotherapy scenarios including DDD method, the Minimum method, and the Maximum method, respectively. Then, dose/schedule adjusted scenarios _based on the guidelines and experts' opinion_ for type 1 and type 2 diabetes were identified. The scenarios are monotherapy therapy, dual drug therapy, triple-drug therapy and insulin therapy for a 30-day period. The results show that monotherapy, dual, and triple (non-insulin) therapies with the lowest-paid unskilled worker approach can be affordable by DDD, minimum, and maximum methods. However, triple therapy (include insulin) scenarios and some insulin therapy scenarios are non-affordable. Conclusions: Finding a way to make prescription medicines—and health care at large—more affordable for everyone has become a socioeconomic imperative. Affordability is a complex function of factors, including not just the prices of the drugs themselves, but also the details of an individual`s insurance coverage and the number of medical conditions that an individual or family confronts. Therefore, any solution to the affordability and catastrophic issue will require considering all of these factors together. High rates of catastrophic costs show that patients with type 2 diabetes that are resistant to medication therapy and patients with type 1 diabetes in Iran incur substantial costs and new policies are urgently needed to ensure diabetes medication is actually affordable.

keywords : Diabetes, Affordability, Type 1 and 2 diabetes, Medication cost, Iran health care system

Essential Medicines List for Diabetes in Health System of Iran

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abstract [198] : Introduction: The essential medicines list (EML) is a set that fulfills the priority of a community`s medication needs. This list specifies what medications should be available at satisfying quantity and quality, by appropriate dosage forms, as well as affordable price. Recent studies show that at least 3 million diabetic patients live in Iran. The aim of this study was to determine the national EML for diabetes in Iran for adult and children groups separately and to classified the essential medicines based on VEN system and level of access. Methods: In this study, after reviewing the literature and the EML of the WHO and other countries (including Australia, Greece, and Pakistan), a questionnaire, containing all potential medications of national EML, was prepared. This questionnaire included various medication dosage forms and dosages, price, imported or domestic production, multiplicity of supplier sources and presence in the EML of reference countries and WHO. Then, diabetic specialists in different parts of the country decided on the final list. The consensus was made through the Delphi method in three rounds. In the next step, the medicines in the final list were analyzed using the VEN system. In addition, to assess the level of access to the listed drugs, the accessibility level was determined by the experts' panel. Results: The result of this study suggested a list of essential anti-diabetic medicines in Iran; including Glibenclamide 5mg ،Insulin Regular Human, Insulin Isophane 5ml, Metformin 500 mg (Extended- Release), Metformin 500 mg, Pioglitazone 30mg, Sitagliptin 50mg. The results of VEN analysis showed that for adults 1) the vital drugs: Metformin, Insulin Regular, Insulin Isophane, Glucagon. 2) the essential drugs: Pioglitazone and Sitagliptin. 3) the non-essential but necessary drug is Glibenclamide. For children, 1) the vital drugs: Insulin Regular, Insulin Isophane, Glucagon. 2) the non-essential but necessary drug is Metformin. In addition, accessibility assessment revealed that for most drugs on the list, accessibility levels were acceptable in community pharmacies, with the exception of Glucagon which has the hospital access level. Conclusion: Although global organizations such as WHO annually publish an EML for developing countries, these organizations recommend that each country has its own EML for various diseases, depending on their circumstances. The results of this study can be used by the authorities in the field of pharmaceutical affairs in evaluating and monitoring the market supply and provision with the aim of better control and treatment of diabetes in emergency situations.

keywords : Diabetes, Essential Medicines List, Access, VEN system, Iran health system