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ABSTRACT BOOK

ORAL PRESENTATION

Anti-allergy effect of polysaccharide extract from *S. polycystum C. Agardh* on Dinitrofluorobenzene (DNFB) induced allergic contact dermatitis in female Balb/c mice

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Sargassum polycystum C. Agardh has potent antioxidant and anti-inflammatory properties. However, its anti-allergic effect has not yet been reported. In this study, we investigated the anti-allergic effects of sulfated polysaccharide extract of *S. polycystum* (Spsp) in Dinitrofluorobenzene (DNFB)- induced allergic contact dermatitis animal model. Spsp was subjected to compositional analyses. For allergic contact dermatitis (ACD) model, symptoms were induced by the topical application of 0.5% DNFB on the shaved ventral skin of mice (2x2 cm^2). Spsp (500, 1000 and 2000 mg/kg) and the standard drug (Prednisolone) were administered for seven days after sensitization of BALB/c mice with 0.5% DNFB. Elicitation was performed seven days later with 0.2% DNFB. After this, ear thickness was measured at baseline and 24 hours post-challenge using a dial thickness gauge. The ears were cut from 2 representatives per group for histopathological analysis. Serum of mice was obtained 24 hours post elicitation for the quantification of IFNγ by enzyme-linked immunosorbent assays (ELISA). All values were subjected to statistical analyses where $p < 0.05$ was considered significant. SPsp afforded 6.64% carbohydrates, 18.04% sulfate, and 2.45% protein contents. Spsp inhibited the DNFB-induced ear swelling and IFNγ production in DNFB-challenged mice in dose-dependent manner. Histological analyses of ear tissues further revealed that Spsp reduced severe inflammatory responses induced by DNFB. However, only the highest concentration of 2000 mg/kg of Spsp showed comparable anti-allergic effect with the standard drug Prednisolone ($p>0.05$). These findings showed that the crude polysaccharide from *S. polycytum* is a potential natural source to treat Allergic Contact Dermatitis. The effect is attributed to polysaccharide-protein complex present in the extract but further studies are needed to establish the exact mechanism of action of Spsp in the treatment of the disease.

Keywords: allergic contact dermatitis, inflammation, polysaccharide

Linezolid : Drug Use Evaluation using Defined Daily Dose and Gyssens Method

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Antibiotics resistance is one of the biggest problems in healthcare services. The rationality of antibiotic use could be evaluated using the Defined Daily Dose (DDD) method and the Gyssens method. This methods can be used as a guideline for conducting restrictions on last line antibiotics such as Linezolid. Linezolid is an oxazolidinones group antibiotic that works by preventing the synthesis of bacterial protein and it usually being used for treating Methicillin Resistant *Staphylococcus aureus* (MRSA) or Vancomycin Resistant Enterococcus (VRE) infection. The aim of this study was to know the Linezolid usage profile and its appropriateness using DDD/100 days method and Gyssens method. It was a total sampling retrospective study that used medical records as a data during January – December 2018 at "X" Hospital. There were 10 patients in this study (5 males and 5 females) with the mean age of 53.60 years old (SD ± 29.07). The DDD/100 days highest number was in June with 1.1619 DDD/100 days. The lowest number were in 5 months from July until October and December where no patients used Linezolid. In the other hand, The Gyssens method showed that 80% of Linezolid usage was in group IV-D which mean that there were narrower spectrum and more specific antibiotic that could be used for treating the patients. In conclusion, further studies needed to comparing the effectiveness of Linezolid with Vancomycin for its usage in Methicillin-Resistant and Penicillin-Resistant bacterial infection in Indonesian patients or study to determine the factors that influence doctors, in the selection of prescribed antibiotics.

Keywords : Linezolid, Antibiotic Resistance, DDD/100days, Gyssens

Confusion, Difficulty Concentrating, and Slow Response Induced by Ropinirole Therapy in An Elderly Patient with Secondary Parkisonism : A Case Report

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Ropinirole is a therapy that is widely used in patients with Parkinson's disease or Restless Leg Syndrome (RLS). Some research journals show that the long-term use of ropinirole can cause side effects to patients. But unfortunately, there are no published studies from Indonesia that show the side effects of ropinirole, especially in elderly subjects. This case reports several side effects such as confusion, difficulty concentrating, and slow response experienced by a 75-year-old elderly patient who consumed ropinirole 2 mg as a therapy for Secondary Parkinsonism. Before using ropinirole, the patient had used levodopa-benserazide, trihexyphenidyl, and pramipexole to overcome Parkinson's for more than 6 years. During the period no side effects occurred. Side effects occurred after ropinirole therapy was given to patients. Therefore, side effects are strongly suspected to occur due to the administration of ropinirole. Assessment methods used were time series data collection followed by causality analysis using Naranjo Scale. The analysis shows a score of 6 which means Probable. Based on the study of several literature, those side effects probably occur due to the presence of neurotransmitter imbalance, one of which is due to activation of dopaminergic receptors. Ropinirole is a dopamine agonist drug, which works on dopamine receptors, especially on D2 -receptors. An excessive activation of dopaminergic receptors can cause some neuropsychiatric symptoms. In addition, the activation of the D2-receptor also causes inhibition of acetylcoline synthesis, resulting in cholinergic deficiency which is one of the triggers for neuropsychiatric symptoms too. The aim of this study is to raise awareness for health workers, especially pharmacists in order to increase alertness in patients using long-term medications such as those with Parkinson's and further research is needed to specifically analyse those side effects.

Key words : confusion, difficulty concentrating, slow response, ropinirole, elderly

Dizziness and Nausea-vomitting Induced by Ropinirole Therapy in an Elderly Patient with Parkinson Diseasse : A Case Report

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Ropinirole is a non-ergoline dopamine agonist drug that is widely used for therapies for patients diagnosed with Parkinson's disease. In the long-term use, several published studies have mentioned the occurrence of side effects of ropinirole in therapies in Parkinson disease, but there has been no case report that reported the occurrence of side effects of dizziness and nausea-vomiting, especially in Indonesia. This case reports the occurrence of side effects of dizziness and nausea-vomiting experienced by a 74-year-old elderly who is undergoing a treatment in a hospital in Indonesia. The patient has been diagnosed with Parkinson's since 8 months ago and has been given a combined therapy of levodopa-benserazide and trihexyphenidyl. During this period there were no side effects. The therapy was then supplemented with ropinirole 2 mg because the patient complained that his hand was shaking again. Some side effects arose after the addition of ropinirole 2mg, therefore side effects were thought to be caused by ropinirole. Assessment methods used were time series data collection followed by causality analysis using Naranjo Scale. The analysis shows a score of 6 which means Probable. Based on the literature studies, side effects such as nausea and vomiting may occur due to the activation of dopamine D2 receptors in the Chemoreceptor Trigger Zone (CTZ) area. The CTZ area consists of several receptors which are sensitive to the causative agent of emesis and produce information on the vomiting center that has a role in triggering the vomiting reflexes. The purpose of this case is to inform the health professionals, especially pharmacists, to be aware of long-term medicines such as those used in Parkinson's patients. Monitoring should always be carried out to maintain effectiveness and prevent side effects from occurring.

Keywords : ropinirole, parkinson, elderly, dizziness, nausea-vomitting

Evaluation of the Hepatoprotective Potential of Methanolic Extract of *Caulerpa lentillifera* Against Acetaminophen-Induced Liver Toxicity in Juvenile Zebrafish (*Danio rerio*)

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Liver injury is a common reason drugs are withdrawn from the market. Treatment options for common liver diseases are limited, and therapy with modern medicines may lack effectiveness. *Caulerpa lentillifera* may have strong antioxidant systems that protect the plant from oxidative damage caused by the environment. The main objective of this study was to evaluate the hepatoprotective potential of the methanolic extract of *C. lentillifera* against acetaminophen-induced liver toxicity in juvenile zebrafish (*Danio rerio*). Juvenile zebrafish (aged 1–3 months) were exposed to 10 µM and 25 µM concentrations of acetaminophen (*N*-acetyl-*p*-aminophenol; APAP) to induce liver damage. *C. lentillifera* methanolic extracts (10 µg/L, 20 µg/L and 30 µg/L), were concomitantly added to individual tanks containing 10 µM or 25 µM APAP. Similar experiments were conducted with *N*-acetylcysteine/NAC (10 µM) and silymarin (10 µg/L, 20 µg/L and 30 µg/L) replacing *C. lentillifera* extracts. Hematoxylin and Eosin (H&E) staining revealed the extent of liver injury through the presence of hepatic necrosis, vacuolization, leukocyte infiltration, and ballooning. The antioxidant mechanism of hepatoprotective activity was assessed by DPPH free radical scavenging assay. *C. lentillifera* extracts reduced the mortality of juvenile zebrafish when simultaneously exposed to 10 µM and 25 µM APAP. Upon histopathological examination of the liver tissue of juvenile zebrafish, the group treated with the 10 µM APAP together with the highest concentration (30 µg/L) of *C. lentillifera* extract showed minimal liver injury compared to the groups exposed to 25 µM APAP. However, the DPPH free radical scavenging assay performed using 24–36 mg/mL *C. lentillifera* extracts showed a minimal effect on free radical scavenging activity. The histopathological analysis of the liver showed that *C. lentillifera* extract prevented the progression of liver damage caused by APAP. The results of DPPH free radical scavenging assay indicated that the hepatoprotective activity of *C. lentillifera* extract might have other antioxidant mechanisms aside from free radical scavenging. In order to effectively assess the improvement in the survival rate of juvenile zebrafish, longer exposure in the treatments is recommended.

Keywords: *C. lentillifera; juvenile zebrafish; hepatoprotective; drug-induced liver injury (DILI); liver injury assessment*

Antidiabetic Evaluation of *Artocarpus odoratissimus* Blanco (Moraceae) Fruit

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Artocarpus odoratissimus, locally known as *marang* is an indigenous plant species in the Philippines and is commonly found in Mindanao. To date, there is no published scientific evidence about its potential medicinal value and pharmacognostic properties. This study therefore, aims to establish of the pharmacognostic profile of the *A. odoratissimus* fruit that will assist in standardization, and to evaluate the *in vivo* hypoglycemic effect of the extracts of *A. odoratissimus* in alloxan-induced white male Sprague Dawley rats. Fresh matured fruits were collected and identified as *Artocarpus odoratissimus*. Pharmacognostic studies were performed, total ash, acid-insoluble ash and moisture contents were under minimal levels. Phytochemical screening was done through thin layer chromatography and revealed the presence of phenols and flavonoids. The acute oral toxicity testing was carried out using Organization for Economic Cooperation and Development (OECD) main test 425 guideline. Results show that the extract sample is safe up to 2000 mg/kg BW of test animals. Based on the results of the bioassay, the extract sample demonstrated a time-dependent hypoglycemic activity from doses of 250 mg/kg BW, 500 mg/kg BW and 2000 mg/kg BW after 21 days of oral administration of the sample ($p < 0.05$). The treatment group 2000 mg/kg BW dose showed the highest activity as compared with other treated groups. Based from the results of this study, *A. odoratissimus* can be a potential therapeutic agent.

Keywords: *Philippines, Marang, Artocarpus, Pharmacognostic, Antidiabetic*

Microbial Stability of Reuse Parenteral Infusion Manitol 20%
(Research Conducted in SMF Neurology Dr. Soetomo General Hospital)

Widiyanti Afifah

Single dose unit is a medication intended for parenteral administration (injection or infusion) that is meant for use in a single patient for a single procedure. If single dose unit is opened or punctured in an environmet with air quality worse than ISO class 5, the beyond use date is one hour. Improper use of parenteral medication may result in microbial contaminations which is a potential cause of different avoidable infections. We aimed to investigate the prevalence of microbial contamination of reuse single dose unit manitol 20% in SMF Neurology Dr. Soetomo General Hospital. In a period of 1 month, reuse of manitol 20% from 3 wards in SMF neurology were collected by a nurses. Information was recorded about the medication, labeling of vials, storing temperature, wards and date of opening. Remained contents of each sampel were tested for aerobic bacteria and fungal. Microbial contamination was confirmed by microbiologic methods. Microbial contamination was identified in 1 of 24 (4,167%) of manitol 20%. Although sterility test results the majority of samples are sterile (only one is contaminated by *Enterobacter aerogenes*), infection control practice should be emphasized considering this potential source of nosocomial infection.
Key words: single dose unit, manitol 20%, reuse infusion, microbial contamination

Secondary Metabolites of Marine Cyanobacteria Collected from Udar Island Malaysia

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The ocean supplies a lot of organisms that are beneficial to the life of living things. One of them is cyanobacteria that are widely studied having bioactive compounds. This research was conducted to observe the compounds and the cytotoxic activity toward cancer cells from the Udar Island waters, Sabah, Malaysia. The identity of the sample was completed by using 16S deoxyribonucleic acid (DNA) method and a phylogenetic tree was built to check the similarity of the genus. The compounds from the crude extract were examined by Liquid Chromatography Mass Spectrometry (LCMS) and the cytotoxic activity was examined by 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay. Several known compounds such as Apratoxins and a possible new compound of ethyl acetate fraction were observed and have good cytotoxic activity towards Michigan Cancer Foundation (MCF) 7 breast cancer. The compounds are mainly peptides. The *Moorea* sp. from Udar Island waters has cytotoxic compounds which exhibits 100% cytotoxicity at concentration of 1 μg/mL. This finding could be the opportunity for the discovery of anticancer compounds.

Keywords: marine cyanobacteria, Udar Island, Malaysia, LCMS, MTT assay, cytotoxicity

Drug Utilization 90% Profile and Adherence of Drug Use to National Formulary in University Hospital in Yogyakarta

Areski

The role of pharmacist in hospital is improving quality of health care including evaluating the pattern of drug use quantitatively by Anatomical Therapeutic Chemical/Defined Daily Dose (ATC/DDD) method and Drug Utilization 90% (DU 90%) profile and evaluating the adherence of drug use to national formulary. This study aims to describe the most class of drug use based on the ATC/DDD classification, the pattern of drug use by DU 90% profile and the adherence percentage of drug use to national formulary in university hospital in Yogyakarta. This study was a descriptive using cross-sectional and retrospective data collection. Data of drug use in patients of National Health Insurance (JKN) was obtained from the pharmacy installation in university hospital in Yogyakarta in 2015. Data of drug use was classified by the ATC/DDD method, calculated the percentage of use, and determined the DU 90% profile. Then, the adherence percentage of drug use to national formulary was calculated. Research result represents that the cardiovascular drug class is the most used in outpatient and inpatient based on the ATC/DDD classification. The highest percentages of drug use were amlodipine in outpatient and methylprednisolone in inpatient. The adherence average of drug use to national formulary in JKN patients is 71,78% that is 87.82% for outpatients and 73.28% for inpatient. Drug use pattern in University hospital in Yogyakarta was good because almost all drugs that entered in DU 90% profile were used in disease treatment that entered in big ten disease occurred in that hospital. And the adherence percentage average of drug use to national formulary was not high because it was lower than the standard value from World Health Organization.

Keywords: ATC/DDD, DU 90%, national formulary

Health Professionals' Perception towards Pharmacist's Role in Interprofessional Collaboration

Hindun Wilda Risni and Citra Dovina Khaira Ummah

Role perception is one of the factors that influence practice of interprofessional collaboration in clinical settings. In the era where clinical pharmacist's roles are evolving, it is important to study health professionals' perception toward the roles to know how pharmacist is positioned to fit the expected roles. The objective of this research is to investigate health professionals' perception towards pharmacist's role. We conducted survey through online questionnaires to health professionals who work in healthcare institutions and 157 questionnaires were collected. Descriptive analysis was performed to identify the role perception toward pharmacist from each health professional. We also determined variables that may potentially effect the role perception, which were health professionals' perspective of interprofessional collaboration and healthcare institution's policy. In addition, we also seek correlation between role perception and collaborative practice. Data analysis was operated by SPSS 26 software and using statistical test of Pearson Correlation. Results suggested that the most positive perception came from pharmacist and the least positive came from physician, while nurse, dietician, physiotherapist, and midwifery were in the middle. There was a positive correlation between interprofessional collaboration perspective and role perception as well as healthcare institution's policy and role perception. A quite strong positive correlation was recognized between role perception and collaborative practice. The results of this study showed that health professionals' perception toward pharmacist's roles tends to be positive and there were correlation between role perception and perspective of collaboration, the policy that applied in the health institutions, and the collaborative practice. The finding is expected to be beneficial for policy makers to improve role perception and collaborative practice in health institutions.

Keywords: role perception, pharmacist, health professionals, interprofessional collaboration

STUDY OF OFF-LABEL DRUGS IN GERIATRIC PATIENTS

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Off-label drugs refer to the use of drugs outside the indications listed in the product label. Based on previous studies, geriatric patients are often prescribed with off-label drugs. Decreased physiological conditions and the presence of multipathological diseases have been mentioned to be the cause of off-label prescription. Pharmacist as the front liner in drug expertise should have sufficient knowledge regarding off label drugs. The purpose of this study was to identify off-label drug indications in geriatric patients hospitalized at a Public Hospital in Yogyakarta, Indonesia. This research is a descriptive observational study using a cross-sectional approach. Data was collected retrospectively with systematic random sampling method on medical records of geriatric inpatients of a Public Hospital in Yogyakarta, Indonesia in the period of 2016. A total of 320 medical records of geriatric patients were obtained in this study. Data analysis was carried out by comparing drugs prescrptions with their labeled indication based on Indonesian drug reference in PIONAS. The result of the study shows that 59.38% of geriatric patients received off-label medication. There was a number of 4572 drug prescriptions, where 8.12% of drugs were included in the category of off-label drugs. Medications identified as off-label drugs were ranitidine (1.36%), sucralfate (0.50%), lansoprazole (0.88%), omeprazole (0.83%), pantoprazol (0.63%), ondansetron (0.50%), domperidone (0.22%), ceftriaxone (0.74%), sildenafil (0.02%), phenytoin (0.24%), dexamethasone (1.07%), 5-fluorouracil (0.22%), gemsitabine (0.04%), dosetaxel (0.04%), paclitaxel (0.11%), carboplatin (0.13%), and cisplatin (0.58%).

Keywords : *off-label drugs*, *geriatric patients*, PIONAS

Effect of extract ethanol *Mimosa pudica* L and *Manihot utilissima* Pohl as antihyperurisemia toward free-ranged chicken induced by chicken liver juice

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The research knows the effect of extract ethanol *Mimosa pudica L* and *Manihot utilissima Pohl* as antihyperurisemia toward free-ranged chicken induced by chicken liver juice. It's experimental research use 20 animals of free-ranged chicken's test, it is divided into 5 groups. The first group as health control given feed and drinks. The second group is to control induced by chicken liver juice concentration 100%. Third group is drugs control induced by chicken liver juice 100% and given allopurinol 10mg/kgBW P.O. Forth group is in control of extract ethanol mimosa pudica L control induced by chicken liver juice 100% and given extract ethanol *Mimosa pudica* L 93mg/kgBW P.O. Fifth group is to control the extraction ethanol of Mannihot utilissima Pohl induced by chicken juice liver 100% and given extract ethanol *Mannihot utilissima* Pohl 93mg/kgBW P.O. Analyzed using kit Easy Touch GCU (Glucose Cholesterol and Uric Acid). An oral extract ethanol of *Mimosa pudica* L toward free-ranged chicken reduced uric acid 1.70mg/dl (22%) and Mannihot utilissima Pohl toward free-ranged chicken reduced uric acid 1.43 mg/dl (21%). Extract ethanol *Mimosa pudica* L and *Mannihot utilissima* Pohl have an activity reduced uric acid

Preformulation studies of *Sargassum polycystum* C.Agardh and its activity against dinitrofluorobenzene-induced allergic contact dermatitis in mice

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Sargassum polycystum C. Agardh is a brown seaweed abundant in the Philippines. Recent studies showed that it has an anti-inflammatory property. However, its topical efficacy against allergic contact dermatitis (ACD) has not yet been studied. The study aimed to evaluate the topical efficacy of *S. polycystum* crude polysaccharide (Spcp) using dinitrofluorobenzene (DNFB)-induced contact hypersensitivity murine model and to conduct preformulation studies on Spcp. ACD was induced by sensitizing the BALC/c mice through topical application of 0.5% DNFB on the shaved ventral skin of mice (2x2 cm^2). Spcp (25%, 12.5%, 6.25% w/w) and standard drug (Betamethasone, 0.10%) were topically applied in the right ear of the mice for seven days after sensitization and right after the challenge on the eighth day. Seven days after sensitization, the right ear of mice was challenged with 0.2% DNFB. Ear thickness was measured at baseline and 24 hours post-challenge using a dial thickness gauge. Ears were harvested for histopathological analysis. Preformulation studies which include physicochemical characterization were also performed. Results showed that topical application of Spcp inhibited the ear swelling produced during 24h post-challenge. Spcp at 25% and 12.5% w/w exhibited a stronger inhibitory effect than 6.25% w/w Spcp ($P<0.05$). Histopathological analysis of challenged ear also revealed the efficacy of Spcp in reducing the inflammatory responses induced by DNFB. Physicochemical characterization showed that Spcp contains sulfate, carbohydrates, and protein in notable amount. Results suggest that topically applied Spcp can be an effective natural product to treat allergic contact dermatitis. The effect of Spcp is attributed to its chemical contents, however, further investigations are required to understand the mechanisms involved.

keywords: allergic contact dermatitis, preformulation, polysaccharide, *Sargassum polycystum*

THE EFFECT OF CINCAU-GREEN LEAF EXTRACT (Cyclea barbata Miers) AND COCONUT MILK (Cocos nucifera L.) COMBINATION ON WHITE MALE MICE LIPID PROFILE

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Cincau-Green Leaf are believed in reducing blood cholesterol levels and have been widely used in the community as a traditional drinks. Cincau-Green Leaf jelly traditional drinks are usually consumed in a combination, one of which is with coconut milk. Coconut milk which contains high fat content is thought to influence the effectiveness of cholesterol-reducing properties of Cincau-Green Leaf jelly. This research aims to study the effect of Cincau-Green Leaf jelly extract (Cyclea Barbata Meirs) and coconut milk (Cocos Nucifera L.) combination on white male mice lipid profile. The animals study were divided into 6 groups, which were positive control, negative control, comparison (given Simvastatin) and three (3) combination dose groups of green grass jelly leaves 120 mg / kgBW with three (3) different coconut milk dose of 2.5 mL / kgBW , 5 mL / kgBW, 10 mL / kgBW. Animals are induced by high fat food and propiltiourasil (PTU) through out the study. Prior to the study, days of 15, and 23, total cholesterol, triglyceride and HDL levels were measured using photometer 5010V5+ . The results showed that the administration of Cincau-Green Leaf extract and coconut milk combination can reduce total cholesterol and triglycerides and significantly increase HDL levels ($p < 0.05$) of white male mice. The increase of coconut milk dose will lowering its effects. While, the length of administration will increasing its effects.

Combating Malaria by Developing a Supersaturated Electrospun Antimalaria Formulation with a Sustainable Release Pattern

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This study aims to develop a supersaturated system to increase dissolution profile and hence bioavailability of atovaquone, an antimalaria. Supersaturation was introduced as part of the strategy in improving the dissolution profile of the poorly soluble drug. However, in creating supersaturation, most of the manufacturing technique involves heat and unsuitable for the thermolabile drug. Therefore, in this study, the thermolabile antimalaria, atovaquone is proposed to manufacture using a non-heat invasive technique- electrospinning using binary carrier system in tailoring the optimum drug release. Physical characteristics of the samples were tested using Differential Scanning Calorimetry (DSC), X-ray Powder Diffraction (XRPD), Attenuated Total Reflectance-Fourier Transform Infrared (ATR-FTIR), Scanning Electron Microscopy (SEM) and polarized light microscopy. Dissolution studies were carried out in a non-sink condition to assess the release stability across precipitation tendency among the supersaturated systems. Formulations with a miscible hydrophobic-hydrophilic component polymer blend showed no significant difference in initial drug release profile compared to a single hydrophilic carrier despite containing a small amount of crystalline traces as observed in XRPD. Hence, it can be deduced that crystallinity is not a crucial factor contributing to dissolution performance improvement. The presence of the hydrophobic component showed ability in resisting precipitation and sustaining the supersaturation. Hydrophobicity balance in a binary carrier system plays an important role in achieving and maintaining the supersaturated state particularly for an amorphous solid dispersion.

Keywords: Supersaturation, hydrophobic, hydrophilic, binary, dissolution, electrospinning

Self-Medication during Pregnancy in indonesia (an Econometrics Approach)

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Self-medication during pregnancy is a problem that often causes serious health problems in both pregnant women and the unborn child. Frequently, this practice is not supervised and then becomes a bad habit. Besides being seen as a health burden, self-medication for pregnant women will also affect the economic condition. In general, this practice also becomes a measure of the ability of the community to access health services. This study aims to obtain an overview of self-medication in pregnant women in Indonesia and the determinants that influence it. This research is an advanced analysis of the results of the National Socio-Economic Survey (SUSENAS) in 2017. SUSENAS is an annual survey conducted by the Central Bureau of Statistics (BPS) to find out the sociodemographic profile of the people in Indonesia. Observations were made on 2,588 pregnant women who had self-medication probabilities. The study was conducted with a health econometrics approach through logistic regression (Logit). The proportion of pregnant women in Indonesia who do self-medication is 58.27%. The modeling results show that the ownership of health insurance both government insurance (p-Value = 0,000; OR = 0.675) and private insurance (p-Value = 0.005; OR = 0.721) decreases self-medication behavior compared to pregnant women who do not have health insurance. Another factor that significantly influences self-medication behavior is the level of education. Pregnant women who have a secondary education level (p-Value = 0.017; OR = 0.794) tend to make self-medication smaller than those who have low education. Health and education insurance ownership are important factors influencing self-medication behaviour in Indonesia. The profile of pregnant women related to certain sociodemography can be a focus on health education related to instructions and use of medication during pregnancy.

POSTER PRESENTATION

QUALITATIVE AND QUANTITATIVE ANALYSIS OF HAZARDOUS CHEMICAL MATERIALS IN FACE WHITENING CREAM FROM 4 FAMOUS BEAUTY CLINICS IN YOGYAKARTA

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The use of cosmetic products is growing among teenagers, almost all people use cosmetic products. Some hazardous chemicals are often added to whitening cream such as mercury, hydroquinone and retinoic acid. These chemicals are very dangerous and can cause serious side effects in the skin. This study aimed to determine the presence of hazardous chemicals concentration in whitening cream from 4 famous beauty clinics in the area of Yogyakarta. Samples were taken from 4 famous beauty clinics in Yogyakarta and analyzed using qualitative-quantitative methods. Qualitative analysis of mercury used chemical reaction method with potassium iodide (KI) reagent. Qualitative analysis of retinoic acid used TLC method with mobile phase A (n-hexane:glacial acetic acid 0,33% in ethanol p.a 9:1) and mobile phase B (n-hexane:acetone 6:4), whereas the qualitative analysis of hydroquinone used TLC method with mobile phase A (n-hexane:acetone 3:2) and mobile phase B (toluene:glacial acetic acid 8:2). Quantitative analysis of hydroquinone used High Performance Liquid Chromatography (HPLC) with mobile phase used methanol:water (55:45) and stationary phase used ODS/C-18. The results of qualitative analysis mercury and retinoic acid showed that of the 4 samples tested are negative (not containing mercury retinoic acid). Whereas, qualitative-quantitative analysis of hydroquinone showed that there were 2 samples contained hydroquinone with concentration of sample A : 10,97% and sample D : 5,33 %. Content of hydroquinone in both samples exceeds the prescribed limit of 2%.

Keywords: Cosmetics, Face Whitening Cream, Hydroquinone, Mercury, Retinoic Acid

EVALUATION OF ANTIBIOTIC THERAPY IN PEDIATRIC PATIENTS WITH PNEUMONIA

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Pneumonia is one of the acute respiratory tract infections that causes the most deaths in children less than five years old (toddlers) in both developing and developed countries. One of the treatments used is antibiotics, but improper use of antibiotics can lead to ineffective therapy and the most dangerous is resistance. This study to describe and evaluate the accuracy of antibiotic therapy in toddlers with pneumonia at the inpatient installation of Yogyakarta City Public Hospital for the period January-December 2017 based on indicators of antibiotic use of the Indonesian Ministry of Health in 2011. This study was an observational descriptive study using cross sectional method with taking retrospective data through medical records of pediatric patients who diagnosed with uncomplicated pneumonia at the inpatient installation of Yogyakarta City Hospital in the January-December 2017 period and total sampling techniques by 73 patients who met the inclusion criteria. Data processing was carried out descriptively and compared the use of antibiotics given by the Pharmaceutical Care guidelines for Respiratory Tracts of the Republic of Indonesia (2005), Medical Service Guidelines from IDAI (2009), Revised WHO classification and treatment of childhood pneumonia at health facilities (2014) and Standards Hospital Medical Services (SPM). Antibiotics used for the treatment of toddlers with pneumonia at the inpatient installation of Yogyakarta City Hospital in the period January-December 2017 are single use of ampicillin (8.2%), cefixime (5.5%), cefotaxime (2.8%), ceftriaxone (4.1%), and amoxicillin (5.5%). While the use of combination is ampicillin with gentamicin (68.5%), cefotaxime with gentamicin (9.5%), cefixime with ceftriaxone (1.4%), cefixime with amoxicillin (1.4%) and ampicillin with amikacin (2, 7%). The most prescribed antibiotics by doctors were a combination of ampicillin and gentamicin antibiotics, namely 50 patients (68.5%). The results of the analysis in this study were 73 patients (100%) given the right antibiotic indication, the right type and dosage of 32 patients (43.8%), right route 73 patients (100%) and exact duration of administration of 34 patients (46.6 %). So that there were 16 patients who received the right antibiotics (22%) and incorrect antibiotics as many as 57 patients (78%).

Keywords: Pneumonia, Toddlers, Antibiotics, Rational

CUSTOMER SATISFACTION INDEX FOR PHARMACEUTICAL SERVICES AT THE OUTPATIENT PHARMACY INSTALLATION OF RSUD DR. M. YUNUS BENGKULU PROVINCE

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Health and wellness is one of fundamental human needs. Increasing individual living standard is directly proportional to the individual needs for health care services. Consumer satisfaction is an element generally used as a benchmark in assessing the quality of services in health care providers such as hospital and public health services, so it encourages every health care provider to improve the quality of services regarding to providing satisfaction to patients. Consumer, in this case is patient, satisfaction is an important indicator for service quality and has an impact on the implementation of health service efforts more efficient in meeting consumer needs. This study aimed to determine the level of consumer satisfaction and to find out the views of patients on pharmaceutical services at the Outpatient Pharmacy Installation of RSUD dr. M. Yunus Bengkulu based on the Customer Satisfaction Index (CSI) analysis. The design of this study was descriptive-analytic non-experimental research with a cross sectional approach. Data retrieval was conducted by purposive sampling through primary data based on the results of the questionnaire. This study involved 500 respondents who met the inclusion criteria as samples. The Level Analysis of Patient Satisfaction in the SERVQUAL model was carried out using measurements of Customer Satisfaction Index analysis. The results of Customer Satisfaction Index analysis showed that the level of customer satisfaction with pharmacy services at the Outpatient Pharmacy Installation of RSUD dr. M. Yunus in Bengkulu Province was 74.75%. It means that patients of the Pharmacy Installation were in the category satisfied.

Keywords: Patient Satisfaction, Customer Satisfaction Index, RSUD dr. M. Yunus Bengkulu

IN VIVO IMMUNOMODULATORY ACTIVITY OF FALOAK BARK EXTRACT (*Sterculia quadrifida* R.Br)

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Faloak (*Sterculia quadrifida* R.Br.) is widely used as traditional medicine in Indonesia to improve stamina (reduce tiredness for heavy workers). However, no scientific reports so far on the immunomodulatory effect. Determine the effect of the bark of faloak as immunomodulatory agents by evaluating their effect on BALB/c mice lymphocytes proliferation, the activity of macrophage, nitric oxide production, and the immunoglobulin G titer by *in vivo* techniques. Decoction of the faloak bark was used for the *in vivo* assay. BALB/c mice were divided into five dose groups, each consisting of 5 mice. One group was chosen as the base-line, three groups were used for the group treated with the test substance at doses of 7,5; 11,75 and 17,5 g/Kg of body weight of mice (p.o), and a positive control group was treated with *Phyllanthus niruri* Linn. (PN) extract (Stimuno®) 0,585 g / Kg BW (p.o). The test samples were given every day. All mice were induced by hepatitis B vaccine at day 7 and 14. The activity of *in vivo* assay was determined at day 19. The activity of immunomudulatory effec is expressed in phagocytic capacity, phagocytosis index, nitric oxide, OD of lymphocyte proliferation and IgG titers. The macrophage phagocytic capacity and phagocytosis index were significant increased ($p<0.05$), nitric oxide production were altered significantly ($p<0.05$), but OD of lymphocyte proliferation and production of IgG titers were unchanged ($p>0.05$). This study showed that the Faloak bark could increase the macrophages phagocytic activity, but no effect on lymphocyte cells and therefore did not influence the adaptive immune response.

Keywords: Faloak bark, immunomodulatory, *in vivo* study

THE EFFECT OF ANTIHYPERTENSIVE DRUG COMBINATION THERAPY FOR LOWERING BLOOD PRESSURE IN PATIENTS WITH HYPERTENSIVE HEART DISEASE (HHD)

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The interaction between various genetics and hemodynamics factor in patients with arterial hypertension can lead to cardiac hypertension / (Hypertensive Heart Disease / HHD). An individual with HHD is more vulnerable to heart attacks, congestive heart failure, stroke, and sudden death compared to someone who has hypertension. This study aims to determine the difference in blood pressure values of HHD patients before and after receiving combination therapy of antihypertensive drugs as and the effect of antihypertensive drugs in reducing blood pressure in HHD patients. This study uses a quantitative method with a retrospective approach by looking at the medical records of patients HHD. This study uses the Wilcoxon test to sign a ranking test to see the difference in blood pressure drop in HHD patients who receive a combination of antihypertensive drugs. The total sample that met the inclusion and exclusion criteria was 51 people. The results showed 18 samples that received a combination of 2 drugs had a difference of 39.44 / 9.44 ($P < 0.05$), 15 samples that received a combination of 3 drugs amounted to 48/20 mmHg ($P < 0.05$), and 13 samples receiving a combination of 4 drugs were 42.30 / 16.15 mmHg ($P < 0.05$). The conclusion of this study is the combination of 3 antihypertensive drugs provides the largest difference in blood pressure reduction in HHD patients.

Keywords: Blood Pressure, Cardiac Hypertension, Hypertensive Heart Disease, Antihypertensive Therapy

Test Quality of Tramadol and Paracetamol Combination Capsules at Prescription in a Private Hospital in Semarang

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Tramadol and paracetamol are analgesic drugs that are often combined to treat moderate pain. The combination of active substances is often made in the form of capsules concoction preparations to meet the needs of patients who cannot afford. Test the quality of the capsule concoction preparation is needed to ensure product quality and safety. Therefore, this study aims to determine the quality parameters of the combination preparation of a combination of tramadol and paracetamol capsules in a prescription at a private hospital in Semarang. This type of research is a descriptive observational cross-sectional design. The study sample was taken by simple random sampling at a pharmaceutical installation in a private hospital in Semarang during September 2018. The sample is then carried out four types of testing (uniformity of weight, moisture content, disintegration time, and stability). Data were analyzed by comparing the data against the standard values of each parameter listed in Pharmacopoeia Indonesia V. The results obtained are that this concoction preparation meets the weight uniformity test with a large acceptance value of 7.34%; meet the moisture content test with an average moisture content of 2.647% for the first day and 3.04% for the seventh day; meet the breakdown time test with a breakdown time of less than 15 minutes; and did not meet the uniformity test of the preparation with an acceptance value of 3406.08% and 3430.32% for paracetamol and tramadol respectively. It can be concluded from these results that the preparation of concoction of a combination of tramadol and paracetamol capsules on a prescription in a private hospital in Semarang meets 3 of the 4 required standards.

Keywords : Analgesic, Combination, Hospital, Paracetamol, Tramadol

Green synthesis and antibacterial potential of *Artemisia vulgaris* extract in silver nanoparticles against wound bacteria

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The purpose of this project was to investigate the anti-bacterial potential of *Artemisia vulgaris* in silver nanoparticles (AgNP) on wound bacteria. *Artemisia vulgaris* (*A. vulgaris)*, a well-known Chinese traditional herb, is a potential agent for wound healing. The herb is reported for its antibacterial properties and is commonly used to control bleeding in women. In our project, we have developed *A. vulgaris* in silver nanoparticles to enhance its effect. Silver is already used in marketed wound bandages for its anti-bacterial effect. Understanding that it has a huge potential to be a safe and effective treatment for wounds, this study investigated the antibacterial effects of the synthesised AgNP on common wound bacteria. The AgNP was synthesised by green synthesis method, which is done by mixing the silver nitrate solution with different concentrations of *A. vulgaris* extracts. The disc diffusion test, minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) tests were carried out to investigate the antibacterial effects of the AgNP on common wound bacteria including *K. pneumonia*, *P. aeruginosa*, *E. coli*, *B. cereus*, *S. aureus*, and two strains of MRSA. The AgNP was also tested on probiotics using the disc diffusion test to investigate its effect on the probiotics. The AgNP containing all plant concentrations were able to inhibit the growth of gram negative and gram positive bacteria. However, it required a higher concentration to inhibit the gram positive bacteria. The plant extracts and silver nanoparticles enhance each other's effect to inhibit the growth of bacteria. Nanoparticles containing the *A. vulgaris* extracts have less inhibitory effects on probiotics compared to antibiotics and silver nitrate alone. However, statistical analysis showed that the anti-bacterial effect of the treatment was not statistically significant. The AgNP demonstrated anti-bacterial effects on both gram positive and gram negative wound bacteria, but the effect of the treatment is not statistically significant.

Medication Errors and Drug Related Problems on Drug Reconciliation Process in Private Hospital in Tangerang

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Drug Reconciliation is the process of comparing the patient's drug history with recent drug treatment during hospitalization, to prevent medication errors and ensure accurate and complete drug list at each interfaces of care. We do drug reconciliation with every patient during admission and discharge from hospital. The purpose of study is to evaluate the seriousness and type of medication errors and causes of Drug Related Problems (DRPs) that have been identified during the drug reconciliation process. The study was carried out at Bethsaida Hospital, Tangerang. This study was a prospective and descriptive study. The reports were spontaneous and submitted by pharmacists from general inpatient ward and intensive care unit from November 2018 until July 2019. There were 234 medication errors and 44 DRPs identified. According to NCC MERP (National Coordinating Council for Medication Error Reporting and Prevention) index category of the seriousness of medication errors showed that potential errors (Category A) were 55,08% and actual errors (Category B, C and D) were 27,12%; 16,10%; and 0,85%, respectively. The most common type of medication error was prescribing error (85,58%). Based on PCNE (Pharmaceutical Care Network Europe Foundation), the most common cause of DRPs was inappropriate duplication of therapeutic group or active ingredient (20,45%). Any intervention has been done to prevent patient harm, problem totally solved by pharmacists was 98,73%. Drug reconciliation is one of the pharmacist's responsibilities to reduce actual errors and DRPs on medication use process, especially every patient during admission and discharge from hospital.

ANALYSIS OF PHARMACY DISTRIBUTION WITH GEOGRAPHIC INFORMATION SYSTEM

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The establishment of health facilities, especially pharmacies, supports the fulfillment of community needs for health facilities. In the establishment of pharmacies, it is necessary to consider the policy of distribution factors and community accessibility to pharmacies. This study aims to see the distribution of pharmacies and community accessibility to pharmacies in the city of Yogyakarta. Data collection through PD IAI Yogyakarta, BPS and the Yogyakarta Health Service was conducted to obtain the number and location of pharmacies as well as the number of residents in Yogyakarta. Data was synchronized to real conditions in the field using GPS. Distribution analysis is done through visualization of the pharmacy distribution map in the city of Yogyakarta, while the accessibility analysis is done by calculating the ratio between the number of pharmacies and the population in each district in the city of Yogyakarta. The results showed that pharmacies located in each district were concentrated in the area on the border road between sub-districts, so that the distribution was uneven and seemed to be clustered in the sub-district border area. The ratio of pharmacies to residents in the city of Yogyakarta is 1: 3967. The largest number of pharmacies is in the sub-district of Umbulharjo (25 pharmacies) with a ratio to the population of 1: 3284, while the number of pharmacies is the least in two districts namely Gondomanan and Ngampilan as many as 3 pharmacies with ratios of 1: 4,365 and 1: 5,467. The smallest ratio is found in Pakualaman district with a ratio of 1: 1561. The highest ratio is found in Mergangsan sub-district, which is 1: 7,362. the ratio of pharmacy and population comparison results shows that the accessibility of the community is good and meets the requirements according to the Ministry of Health.

Keywords: pharmacy, distribution, ratio, geographic information system

IDENTIFICATION OF DRUG RELATED PROBLEM (DRPs) IN CONGESTIVE HEART FAILURE PATIENTS AT PUBLIC HOSPITAL FOR PERIOD 2016

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In Indonesia, cardiovascular disease is ranked first as the cause of death, with 17.5 million people die each year. In RSUD of Yogyakarta the incidence rate of Congestive Heart Failure (CHF) is 0.8% from the total number of patients in the inpatient installation. Cardiovascular disease is generally accompanied by comorbidities so that patients get complex therapy. The importance of pharmacy care in the form of actual or potential Drug Related Problems (DRPs) is intended to achieve optimal therapy. This study aims to determine the categories and incidence rates of DRPs in CHF patients in the Inpatient Installation at public hospital for the period of January-December 2016. This research is a non-experimental descriptive research. Data were taken retrospectively from medical records Sample in this research consist of 34 CHF inpatients which included in inclusion criteria. DRPs was analyzed based on classification of DRPS and conducted by reference books and journals such as Pharmaceutical Care Network Europe (PCNE) 2006, ACCF/AHA Guideline for The Management of Chronic of Cardiology Foundation/ American Heart Association Task Force on Practice tahun 2013 dan Pharmacotherapy: A Pathophysiologic Approach, 9th Edition. The result showed that DRPs in the management of patients with CHF inpatients in Public Hospital indicates that are no clear indication for drug use (11,43%) also no drug prescribed but clear indication (17,14%) and drug interaction category (71,43%).

Keywords : Congestive Heart Failure (CHF), Drug Related Problems (DRPs).

SAPA for type 2 DM patients: an education model to improve knowledge, behavior, medication adherence, and clinical outcome

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Diabetes mellitus (DM) poorly managed increases serious complications, premature deaths, and burden the health costs. Lack of education to people with diabetes leads to uncontrolled blood glucose. Mostly, they disregard self-care activities. This project was to develop an effective and efficient education model for enhancing knowledge, adhering to medication, changing behavior, and improving clinical outcome. The observational study was conducted to design module *SAPA* (pharmacist's recommendation). The problems experienced by type 2 DM (T2DM) patients during treatment identified by the prior study were rolled up with the results of the literature review and several guidelines. The draft was evaluated by an internal medicine physician, clinical pharmacist, and dietitian. The module design was trialed in a one-group pretest-posttest study involving 35 T2DM outpatients in Bethesda Hospital, Yogyakarta, between March and April 2016. Diabetes knowledge, self-care activities, psychological distress, and blood glucose level. The educational materials designed in *SAPA* Module were elaborated in a guide including general description of DM, blood glucose monitoring, non-pharmacology and pharmacology management, hypoglycemia and hyperglycemia, nutrients which work on blood glucose levels, mechanism of anti-hyperglycemic agents in reducing blood glucose level, adverse effects, insulin use, DM complications, daily care (feet, teeth, and gums), physical activity or exercise, non-prescription medicines that affect DM or its comorbidities. *SAPA* supporting instruments are the booklet for DM patients as a reminder or self-learning material, the blood sugar diary for practicing self-monitoring of blood glucose, a chart for injection site rotation, and a poster containing exercise moves for patients with DM. The mean score of diabetes knowledge increased from 15.5 ± 3.0 to 18.7 ± 2.9. This study concluded that the *SAPA* Module can provide diabetes knowledge in a short duration.

Keywords: Counseling, Diabetes mellitus, Education, Pharmacist

FORMULATION AND ANTIBACTERIAL ACTIVITIES OF PATCH POMEGRANATE PEEL ETHANOLIC EXTRACT (PUNICA GRANATUM L.) AGAINST STREPTOCOCCUS SANGUIS ON RECURRENT APHTHOUS STOMATITIS

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Mouth ulcer (*Recurrent Aphthous Stomatitis*) is one of the most common diseases in the community. This disease can be caused by various factors, one of them is bacterium *Streptococcus sanguis*. Previous study showed that pomegranate peel extract (Punica granatum L.) had antibacterial activity regarding to the content of tannin. This study aims to know optimal concentration pomegranate peel ethanolic extract (*Punica granatum L.*) as antibacteria. Test to determine the optimal concentration extract in the inhibition of Streptococcus sanguis is prepared by agar diffusion method. The concentration of the extract were used 1%, 2.5%, 5%, 10% and 20%. Positive control used is albotyl, while the negative control used is aquadest. Patch formulation is prepared by solvent-casting method by varying the composition of chitosan, PVP and HPMC 1:2:2, 1:2:3 and 2:3:6. Antibacterial activity of patch is also prepared by agar diffusion method. Negative control used is formula of patch without extract. Statistical analysis is performed with *Kruscal-Wallis* method. The results shows that the optimal concentration of extract as antibacteria activity is 10%. Statistical analysis produces Kruscal-Wallis p-value which equal to 0.014. The post-hoc Mann-Whitney test shows that all of the extract concentration have a significant difference in inhibition to extract with a concentration of 1%. Meanwhile, pomegranate peel ethanolic extract (Punica granatum L.) can be formulated into patch dosage form with the the most satisfied characteristics found in the formula containing in the ratio chitosan, PVP and HPMC 1:2:3 and extract 5%. Pomegranate peel ethanolic extract (Punica granatum L.) patch shows no inhibition of the growth of the Streptococcus sanguis, which is considered releasing of active substance. However, pomegranate peel ethanolic extract (Punica granatum L.) has higher potency as antibacterial agent than the other controls.

Keyword : pomegranate peel extract (*Punica granatum L.*), patch, *Streptococcus sanguis*.

Health-Related Quality of Life among Children with Pneumonia in Indonesia

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In Indonesia, no study has been published to evaluate the utility scores among children with pneumonia. This study aims to quantify the health-related quality of life (HRQOL) of children with pneumonia in Indonesia using the EQ-5D-5L value set for Indonesia. A hospital-based cross-sectional survey was conducted between September 2017 and March 2018. Children aged less than14 years who were hospitalized for pneumonia in 11 hospitals in Yogyakarta were recruited for this study. The EuroQoL Descriptive System (EQ-5D-5L) and Visual Analogue Scale (EQ-VAS) were applied to the parents (proxy-assessment). A total of 384 patients were hospitalized with pneumonia. Among those, 338 (88.02%) were without congenital diseases; and 46 (11.98%) were with congenital diseases. The mean of utility scores in all patients was 0.67±0.28, while the mean of VAS score was 67.66±21.98. The mean of utility scores and VAS scores ~~was~~ decreased among those with congenital diseases, which is 0.51±0.51 and 65.41±19.42, respectively. However, the utility score and VAS scores among patients without congenital diseases were higher than the category of all patients. Showing the number of 0.69±0.23 and 68.0±22.3, respectively. This study confirmed that children with pneumonia had a negative impact on HRQOL. The HRQOL could be used for future economic evaluation studies.

Keywords: pneumonia, child, health-related quality of life, utility, proxy

Evaluation of Drug Management in Pharmacy Department UGM Hospital

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Good drug management is important aspect that influences pharmaceutical services. Hospital pharmacist must evaluate and monitor the management of pharmaceutical supplies in order to improve service quality. This research's purpose is to determine the performance of drug management phases: selection, planning, procurement and storage at Instalasi Farmasi dan Sterilisasi Rumah Sakit Akademik Universitas Gadjah Mada (RS Akademik UGM) in 2019. This research uses descriptive design, data collected retrospectively from document observation. Level of efficiency in every phase are measured and compared with WHO, Depkes and Pudjaningsih indicators. Researcher choose indicators represent each phase. Out of 11 indicators, five met the standard, namely funds-available to funds-needed ratio (100%), drug budget to overall hospital budget percentage (33,05%), comparison between drug-used to drugs-planned (100,75%) and drug availability level (17,34 month). Six did not meet the standard, are drugs suitability with Formularium Nasional (62,51), procurement frequency (10 times), invoice error rate (0,58%), percentage of damaged or expired drugs (4,71%), stock card accuracy (96,6%), turnover ratio (6,6 times), deathstock percentage (7,89%).
Researcher conclude that RSA UGM has a good performance in drug planning and procurement, however, selection and storage process still need improvements.

Keywords: Drug management, indicators, RS Akademik UGM

A Comparison of Educational Model in Improving Medication Adherence in Type 2 Diabetes Mellitus Patient in Primary Health Care Center at Jakarta

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Introduction: Non-adherence is still a major issue in the management of diabetic in Indonesia which leads to complication problems. Many educational models are applied to achieve the patient's compliance and patient's glycaemic control. Aim: This research aimed to compare the effectiveness among three different educational models (booklet handout, public counselling, and video) to increase medication adherence in patients with type 2 diabetes mellitus in three Primary Health Care Center at Jakarta. Methods: A quasi-experimental pre-test-post-test study design was applied in these prospective studies, which were held in Malaka Jaya, Pondok Kelapa, and Duren Sawit Primary Health Care Center in East Jakarta. A total of 90 patients met the inclusion criteria. Only one educational model conducted in each Primary Health Care Center. The interventions were booklet handout, public counselling, and video which were delivered once per month in three consecutive months. The parameter used was the A1C (glycated haemoglobin) which was assessed twice, i.e., before and after the intervention. Results: Patients exposed to booklet handout, 20.0% of them had the A1C level <6.5% at the beginning, then significantly increased to 73.34% (p=0.005). Patients were given with public counselling, 16.7% of them had the A1C level <6.5%, then after 12 weeks of intervention, the percentage of A1C significantly rose to 76.7% (p=0.005). While patients who were educated with video, 6.67% had the A1C level <6.5% before the intervention and increased significantly to 90.0% 12 weeks after the intervention. Conclusion: either booklet handout, public counselling, or video is effective to increase medication adherence in patients with type 2 diabetes mellitus.
Keywords: booklet handout, public counselling, video, comparison, A1C, medication adherence

FOOD ANALYSIS THAT CONTAINS HAZARDOUS PRESERVATIVES,DYES AND CHEWY IN THE SEMARANG CITY AREA USING THE VALIDATION OF UV - VIS SPECTROFOTEMETER METHODS

Firstca Aulia Rachma

STIKES TELOGOREJO

Food is one of the main components that is very important for human life because no human can survive without food (Sediaoetomo, 2000). Food contains nutrients essential for health, but it may also include chemicals that can increase risk of diseases. These chemicals can include preservatives, dyes and chewy. Chemical substances can play an important role in food production and preservation, and have a variety of toxicological properties, some of which might cause effects in humans. This research was conducted to investigate the content of preservatives such as borax, formalin, and synthetic dyes in a variety of food preparations. This research is a research with experimental descriptive research design. In a qualitative analysis, samples containing formalin were fried chicken and sosis. Samples containing borax were cendol, mie kuning, and tahu. Samples containing synthetic dyes are cendol and sosis. In quantitative analysis, samples containing formalin were fried chicken and sosis.
Keywords : Food, preservatives, dyes, chewy.

STUDY OF ANTIHIPERTENSIVE DRUG INTERACTIONS AMONG GERIATRIC PATIENT IN SOME PHARMACIES IN GARUT

Vicka Galuh Febryanthie, Genialita Fadhila, Siti Fatimah PH, Firly Suci Mutiaz, Umay Zafar Sidiq

Garut University

Hypertension is a cardiovascular disease which is a problem especially in geriatric patients. . In this age group the problems are related mainly to the use of drugs, one of which is the occurrence of interactions between drugs due to polypharmacy treatment. In this study, an observational study was conducted in which the data taken were retrospective data in the form of prescriptions for geriatric patients and analyzed descriptively. The purpose of this study was to determine the incidence of antihypertensive drug interactions in prescription outpatient prescriptions for geriatric patients in some pharmacies in Garut, in the period September-November 2018. From 2,752 prescriptions from three pharmacies, 370 samples were obtained which included the inclusion criteria. The highest number of patterns was pharmacodynamics with 129 cases (59.2%) with the highest moderate, as much 189 cases (86.7%). The drug most frequently asked was Candersartan with Aspirin in 83 cases (22.4%).

Keywords: Antihypertension, Drug Interaction, Geriatric Patiens, Hypertension.