MALAYSIAN JOURNAL of PHARMACY

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Supplement

- Proceedings of the 9th National Pharmacy R&D Conference 2016
7 Day / 70 Cycle Multishot High Level Instrument Disinfectant

Perastel 7 Day / 70 Cycle Multishot High Level Instrument Disinfectant is an endoscope and instrument steriliser that combines secure microbiological credentials with safety in use and rapid activity.

Features

- Effective in 2 minutes against spores, mycobacteria, viruses, fungi and bacteria
- Lasts for 7 days / 70 cycles
- Efficacy verifiable by test strips
- Unique Peracetic Acid chemistry which contains no acetic acid
- Easily mixed at point of use from 2 solution packs
- Materials compatibility approval from:
  - Endoscope manufacturers: Olympus, Pentax, Fujinon, Richard Wolf, Phillips
  - Machine Manufacturers: Labcaire, Minntech, PFE, AFOS, Bioquill
- Cost Effective
- Easily Biodegradable
- Nontoxic, low risk formulation

Applications

- Endoscopes
- Other medical instruments
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Editorial

Cross-disciplinary Research Fostering Holistic Healthcare

Dr. Lawrence Anchah
Sarawak Heart Centre, Kota Samarahan, Sarawak, Malaysia

Pharmacists play an important role in the multidisciplinary healthcare team who focus on pharmaceutical care issues. This is more apparent in hospitals and clinics, not forgetting those in community services. As our profession is increasingly focusing on holistic healthcare, good communication skill is crucial to provide guidance, counselling, education and know-how to meet the patient needs. Hence, future pharmacists are expected to undertake social pharmacy progressively in their practices to fulfill both pharmaceutical and social needs.

In our current practices, medication non-adherence and pharmacy practice pattern are two common areas of discussion in our quest for providing better pharmaceutical care. Although patients’ adherence to their medications is close to 100% during admission (which is a Morisky Score of 8/8 or similar scale), there is a group of patients who are not adhere to their medication regime soon after discharge due to many reasons. It is challenging to resolve these issues during hospitalisation as patients are unable to assimilate the information provided during adherence counselling or during bedside dispensing activities. Hence, activities such as home medication review enable pharmacists to deliver better pharmaceutical care by working together with the patients and their caregivers. Pharmacists should take one step forward to break the over-the-counter barrier and serve the community by working together with other healthcare professionals from different specialties. This cross-disciplinary approach is able to reduce the risks of treatment failure as well as drug wastages.

As we move towards providing better pharmacy services, the next challenging arena in clinical pharmacy nowadays is to provide personalized treatment. One of the examples is pharmacogenetics. The benefits of pharmacogenetics in individualised patient care are undisputed. However arguments still exist if one should opt for conventional empiric dosing strategy each time we encounter ‘tailored-to-patients’ needs. In the past, individualised pharmacogenetic-guided dosing is beyond our reach. This new approach of pharmacogenetics can bring a major impact in dose prediction particularly in warfarin and Noval Oral Anticoagulants (NOACs) therapies and thus possibly improve safety and cost effectiveness of the therapies. The cost and benefit of routine genotyping may take several more years for Malaysian practitioners to achieve a consensus. Until then, empiric-based dosing strategy is here to stay in our current clinical practice. Clearly a cross-disciplinary research is needed to work towards this direction.

As the healthcare continues to evolve, healthcare professionals should not be restricted by their own disciplines and should move beyond their fields and explore new collaborative models with other healthcare professionals. The primary focus of such cross-disciplinary initiatives should be creating a network to support relatively clear-cut research goals in addressing the complex healthcare issues. By developing the cross-disciplinary teams, this may help support translational research and, by extension, the evidence for practices in fostering holistic healthcare.
Acknowledgements

The editorial board would like to thank the Director General of Health, Malaysia for permission to publish the abstracts in this journal.

Cross-Disciplinary Research: Fostering Holistic Healthcare
Date: 8-10th August 2016

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INTRODUCTION: Dual antiplatelet therapy is the standard therapy for patients with acute coronary syndrome (ACS) and post percutaneous coronary intervention (PCI) patients. Inter-individual variability exists in clopidogrel response, and this has been attributed to CYP2C19 polymorphisms.

OBJECTIVES: To determine the relationship between genetic polymorphisms of CYP2C19 and effect of clopidogrel on platelet function.

METHOD: Cross-sectional study was conducted at Sabah Heart Centre, Kota Kinabalu, among the population of Sabah. Patients with ACS and those who had undergone PCI were prescribed standard loading dose of 300mg Clopidogrel and 300mg Aspirin, followed by 75mg and 150mg maintenance dose respectively. Platelet function was measured by VerifyNow® and reported as platelet reactivity unit (PRU). A cut-off of PRU<230 was used as adequacy of platelet inhibition. Retesting was performed among those who showed initial resistance, after repeat loading and higher maintenance, to determine true resistance. Genotyping for CYP19*2 and CYP19*3 alleles was performed by PCR method using forward and reverse primers. CYP2C19 polymorphisms were expressed as good (wild type), intermediate (heterozygotes) and poor metabolizers (homozygotes). Differences in mean PRU between the metabolizer status were analysed using one-way ANOVA; and association between clopidogrel response and metabolizer status was analysed using chi square.

RESULTS: Total of 430 patients. Mean age 56.7 year; 85.8% male; mean PRU 170.2. Among these, 18.1% (n=78) have initial on-treatment reactivity (OTR) with mean PRU 264; after reloading, 32% (n=23) has persistent OTR. In terms of genotype, 46% were good metabolizers, 44.4% intermediate metabolizers and 9.5% poor metabolizers. Good metabolizers has significant lower median PRU as compared to intermediate and poor metabolizer. However, no association between clopidogrel response and metabolizer status was found.

CONCLUSION: Our study showed lower prevalence of clopidogrel resistance among Sabah population. Good metabolizer has significantly higher platelet inhibition with clopidogrel, although clopidogrel responsiveness was not associated with genotype.

KEYWORDS: clinical pharmacy, Sabah, clopidogrel, platelet reactivity unit, resistance

INTRODUCTION: Benzodiazepine is given as sedative-hypnotic medication, as an adjunct to antidepressants, for depressed patients who exhibit insomnia or anxiety features. In other countries, prescribing long-term benzodiazepines to patients is common. There is scarce data describing benzodiazepine use among depressed patients in Malaysia.

OBJECTIVES: To describe prescribing pattern of benzodiazepines among depressed patients in Hospital Teluk Intan.

METHOD: A retrospective, cross-sectional study was conducted among patients, based on patient medical record review who were diagnosed with depression from 1st January 2008 until 30th Jun 2015 and had at least 6 months of follow-up at psychiatry clinic. Benzodiazepine dose prescribed was converted to diazepam equivalent dose. Descriptive statistic was used to present demographic data and the prescribed doses of benzodiazepines. Inferential statistics was used to explore the association between demographic data and benzodiazepine utilization.

RESULTS: Among 99 patients who met the inclusion criteria (mean age=48.1), 56% of patients were female. Half of the patients were Chinese (56%), followed by Malay (27%) and Indian (17%). Median duration of depression was 2.55 years. SSRI was the most prescribed antidepressant (n=64, 65%), while alprazolam was the most prescribed benzodiazepine (n=59, 60%). Median duration of benzodiazepine use was 485.11 days. Median daily dose of benzodiazepine was 4.896mg, in terms of diazepam equivalent dose. Only 24 patients had benzodiazepine use not exceeding 90 days, and 19 patients with duration not exceeding 60 days. 95% of patients used low dose benzodiazepine (<15mg). There was a significant positive correlation between duration of depression and benzodiazepine duration, while a significant negative correlation between duration of depression and benzodiazepine dose.

CONCLUSION: Although the benzodiazepine dose prescribed was low, most were on prolonged duration of benzodiazepines in combination with antidepressants, which did not follow guideline recommendations. Further research needs to be done to justify the need of prolonged use of benzodiazepines among depressed patients in Malaysia.

KEYWORDS: pharmacy practice, Perak, benzodiazepine, depression, utilization
OP1-3 (Oral)
SL GTN: ASSESSMENT OF CARDIAC PATIENTS’ KNOWLEDGE AND USE AT BALIK PULAU HOSPITAL

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INTRODUCTION: Coronary heart disease contributes to one of the highest mortality in Malaysia. Sublingual glyceryl trinitrate (SLGTN) is a life-saving medication in acute coronary syndrome, hence, adherence to SLGTN is important.

OBJECTIVES: The objectives of the study were to assess the knowledge and the use of SLGTN among cardiac patients in Hospital Balik Pulau and to investigate the patients’ demographic and clinical factors that influence the knowledge and the use of SLGTN.

METHOD: A cross-sectional study was carried out via a validated questionnaire adopted from The Sublingual Nitroglycerin Interview Schedule (SNIS) for a period of 2 months. The survey was conducted among eligible consented patients in Hospital Balik Pulau who were prescribed with SLGTN. Patients’ knowledge score ranged from 0 to 7; score 0 to 3 (poor knowledge), score 4 to 5 (moderate knowledge) and score 6 to 7 (high knowledge). Meanwhile, for the use subscale ranged 0-5; score 0 to 3 (poor adherence) and score 4 to 5 (good adherence). All data was analysed using SPSS. Chi square test was used to analyse the relationship between demographic data and clinical factors with level of knowledge and adherence.

RESULTS: Out of 37 respondents, 62.2% were elderly above 60 years old. Almost three-quarter (70.3%) of the respondents had poor knowledge score and more than half (56.8%) had poor adherence score. Out of the demographic factors (age, gender, ethnic, education level) and clinical factors (duration taking SLGTN and previous counselling) analysed, only duration of taking SLGTN had significant relationship with level of adherence (p= 0.048) . There is also a significant correlation between patients’ knowledge and adherence level (p= 0.007).

CONCLUSION: Cardiac patients in Hospital Balik Pulau have low knowledge and adherence level in the use of SLGTN. Pharmacist intervention may need to be carried out to improve patient knowledge and adherence to SL GTN.

KEYWORDS: pharmacy practice, Pulau Pinang, sublingual glyceryl trinitrate, knowledge, adherence

OP1-4 (Oral)
IMPACT OF VALUE ADDED SERVICES (VAS) ON PATIENT WAITING TIME AT AMBULATORY PHARMACY QUEEN ELIZABETH HOSPITAL

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INTRODUCTION: Value-added service (VAS) is an innovative dispensing system created to provide alternative means of collecting drug supply from hospital. This in turn reduces the necessity for patient to come to pharmacy counter, thus reducing the burden of dispensing at ambulatory pharmacy.

OBJECTIVES: To evaluate the impact of VAS on patient waiting time at ambulatory pharmacy, Queen Elizabeth Hospital.

METHOD: A pre- and post-study design was conducted from September 2014 till June 2015 at ambulatory pharmacy. During pre-intervention phase, baseline data of parameters were collected retrospectively. Then, VAS promotional campaign was carried out for six months. Outcomes were evaluated comparing pre- and post-intervention phase. Primary outcome was patient waiting time measured by percentage of prescription served in less than 30 minutes. Linear regression analysis was used to determine the impact of VAS towards patient waiting time.

RESULTS: An increase in VAS registration (20.9% vs 35.7%, p<0.001) was observed after the promotional campaign. With this, the mean percentage of prescription served in less than 30 minutes increase from 83.2% ± 15.9 to 90.3% ± 11.5, p=0.001. After controlling for covariates, it was found that patient waiting time was affected by the number of pharmacy counters (b=0.1125, 95% CI 0.0631, 0.1620, p<0.001), the number of prescriptions (b=0.0008, 95% CI 0.0004, 0.0011, p<0.001), the number of refill prescriptions (b=0.0004, 95% CI 0.0002, 0.0007, p<0.001) and the number of pharmacy technicians (b=-0.0349, 95% CI -0.0548, -0.0150, p<0.001). An increase in the percentage of VAS registration was associated with a reduction in the number of refill prescriptions (b=-2.9838, 95% CI -4.2289, -1.7388, p<0.001).

CONCLUSION: Waiting time at ambulatory pharmacy improved with VAS registration. The impact of VAS on waiting time resulted from a reduction in the number of refill prescriptions.

KEYWORDS: pharmacy health policy, Sabah, ambulatory pharmacy, Value Added Services, patient waiting time
STUDY OF KNOWLEDGE IDENTIFICATION AND SAFE-HANDLING PRACTICES OF CYTOTOXIC DRUG AMONG NURSES IN RAJA PEREMPUAN ZAINAB II HOSPITAL (HRPZ II)

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INTRODUCTION: An increasing trend of cytotoxic drug use, mainly in cancer treatment, has increased the occupational exposure. It is very important for individuals handling chemotherapy agents, especially oncology nurses to have adequate knowledge as the safety net for themselves and patients. Lack of knowledge in chemotherapy administrations breaches practice and threatens the safety of the handlers as well as the patients.

OBJECTIVES: To evaluate the safe handling of cytotoxic drug among nurses and their compliance with safety policy while handling cytotoxic drugs.

METHOD: A cross sectional study involving nurses in the wards, which handle patients on cytotoxic drugs was conducted for 2 months from October to November 2015. A validated questionnaire was distributed using convenience sampling method. Data was analysed by using SPSS software package version 22.

RESULTS: A total of 127 questionnaires were distributed with a response rate of 59.8%. Mean age of respondent was 36.9±7.9 years with good nursing experience (13.6±7.1). However, most respondents lack nursing experience in administration of chemotherapy agents (2.4±3.4). Non-oncology ward (0.74±0.77) showed better chemotherapy exposure knowledge compared to oncology ward (0.63±0.14) with statistically significant (p=0.008). Oncology ward (2.49±0.50) has statistically significant (p=0.002) lower perceived risk compared to non-oncology ward (2.96±0.48).

CONCLUSION: The knowledge of cytotoxic exposure and compliance with safety policy of cytotoxic drugs among nurses in HRPZ II was still low and unsatisfactory. Hence, there is a need to improve the knowledge and the practice of safe handling of cytotoxic drugs among nurses.

KEYWORDS: pharmacy practice, Kelantan, cytotoxic drug, knowledge

HIGH PREV ALENCE OF ASPIRIN RESISTANCE IN HIGH RISK CORONARY ARTERY DISEASE PATIENTS AND ITS RISK FACTORS

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INTRODUCTION: Aspirin resistance (AspR) is not uncommon in coronary artery disease (CAD) patients. AspR might indicate inadequate cardiovascular protection from aspirin via inhibition of COX-1 dependent pathway.

OBJECTIVES: This study aimed to assess the prevalence of AspR in high risk CAD patients admitted for elective coronary artery bypass grafting (CABG) and the associated risk factors.

METHOD: Elective CABG patients who took aspirin daily for at least seven days were recruited prior to operation from November 2015 to February 2016. Platelet reactivity level was measured using multiple electrode aggregometry (MEA) assay and expressed as AU*min. Patients with MEA reading above 300 AU*min were identified as AspR. Demographics, comorbidities, laboratory data, and concomitant medication list were obtained from patients’ outpatient medical folder. Multiple logistic regression analysis was used to determine the significant risk factors of AspR.

RESULTS: Out of 30 subjects recruited, 14 (46.7%) were identified as aspirin resistant. The mean MEA reading was 330.8±145.7 AU*min. Patient with AspR were more likely to be diabetic (64.3 vs 25.0%, p=0.03), had higher white blood cell (WBC) count (9.3±2.1 vs 7.8±1.0 x10⁹/L, p=0.02) and higher body mass index (BMI) (29.7±5.0 vs 26.4±3.3, p=0.04). Multiple logistic regression analysis showed that WBC count (OR 1.94, 95% CI; 1.02-3.69, p=0.04) was the only significant risk factors of AspR.

CONCLUSION: There was a high prevalence of AspR among the high risk CAD patient admitted for elective CABG. Higher WBC count was associated with aspirin resistance in this group of patients.

KEYWORDS: clinical pharmacy, Sarawak, aspirin resistance, coronary artery disease, coronary artery bypass grafting
OPI-7 (Oral)
PICTOGRAM-BASED LABELLING FOR PEDIATRIC LIQUID MEDICATIONS: IMPACT ON CAREGIVERS’ DOSING ACCURACY, UNDERSTANDING AND PREFERENCES IN THE SULTANAH BAHIYAH HOSPITAL, ALOR SETAR

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INTRODUCTION: The Malaysian children’s caregivers have been generally shown to have limited health literacy and difficulty in comprehending medication labels.

OBJECTIVES: To assess the impact of a computer-generated, pictogram-based drug labels used for pediatric liquid medications on dosing accuracy, understanding of instructions and preferences among caregivers.

METHOD: This was a two-armed, randomised controlled trial undertaken at the outpatient pharmacy of Sultanah Bahiyah Hospital, Alor Setar. Sixty-three caregivers receiving liquid antibiotic preparations for children aged 1 month to 8 years were recruited. They were randomised to receive either a pictogram-based drug label (intervention, n=32) or a text-only drug label (control, n=31) along with verbal instructions by pharmacists. Their ability to accurately measure the doses by using oral syringes was observed, and their understanding of medication instructions and preferences for labels to be received were examined using a structured interview guide.

RESULTS: Majority of the participants were Malay (93.7%) and had only secondary education or below (85.7%). Phenoxythymethylpenicillin and Cefuroxime made up 88.9% of liquid medications received by them. The pictogram-based drug label significantly reduced the risk of dosing errors (unadjusted OR: 0.192; 95% CI: 0.037, 0.990). Compared with the control group, the intervention group also demonstrated better understanding of medication instructions, especially of drug storage conditions (90.6% vs 64.5%, p=0.013) and duration of treatment (93.8% vs 64.5%, p=0.004). After being shown both labels at the end of assessment, most participants (58.7%), particularly those with only secondary education or below, expressed their preferences for the pictogram-based drug labels.

CONCLUSION: The use of the pictogram-based drug label resulted in fewer dosing errors and improved understanding of medication instructions among children’s caregivers. Future studies should further investigate its usefulness in other pediatric dosage forms, particularly among caregivers with low education levels.

KEYWORDS: pharmacy practice, Kedah, paediatrics, drug labelling, pictographic interventions

OPI-8 (Oral)
THE IMPACT OF INTEGRATED EDUCATIONAL PROGRAMME ON KNOWLEDGE, ATTITUDE AND PRACTICES (KAP) AMONG HIV-PATIENT CAREGIVERS

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INTRODUCTION: Knowledge about HIV/AIDS has been identified as a powerful tool to prevent the transmission of this disease. However, majority of KAP studies have been directed at young adult, adolescents and healthcare workers. Hence, little is known about KAP if health education is focused on their caregivers.

OBJECTIVES: This study was to investigate the impact of the integrated educational intervention on HIV-patient caregivers’ KAP towards HIV/AIDS and antiretroviral therapy.

METHOD: A randomized, controlled open-label trial based on convenience sampling was conducted in the Infectious Disease Clinic of three public hospitals located in the states of Kelantan, Terengganu and Pahang. They were randomised into intervention (IG) and control (CG) groups. The IG was supplied with only printed brochure while IG received an additional counselling session and eight-weekly educational SMS. Upon written consents, subjects completed the Malay Knowledge, Attitudes and Practices (KAP) towards HIV/AIDS and antiretroviral therapy twice (first during baseline and second after two months). Data analysis was carried out using SPSS 20 employing descriptive and repeated measures of covariance.

RESULTS: One hundred and fifteen caregivers were enrolled (mean age=36.4 years, female=54.1%, married=73.9%). From within group comparison, there was significant difference of mean scores within each group based on time. Besides, from test of between-subject effects, there were significant differences of mean KAP scores between the control and intervention groups regardless of time. After controlling for age on repeated measurements, mean scores showed significant difference between control and intervention group in 2nd time assessment (after intervention).

CONCLUSION: Delivering education through three integrated tools is more effective to improve KAP of caregivers. Thus, evidence on the effectiveness of integrated educational system in enhancing HIV-patient caregivers’ KAP is now apparent.

KEYWORDS: pharmacy practice, Kelantan, Terengganu, Pahang, HIV-patient caregivers, knowledge attitudes and practices
OP1-9 (Oral)

IMPROVEMENT OF ASTHMA CLINICAL OUTCOMES IN PHARMACIST-LED RESPIRATORY MEDICATION ADHERENCE CLINIC (RMTAC)

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INTRODUCTION: The pharmacist-led Respiratory Medication Therapy Adherence Clinic (RMTAC) operates in conjunction with the Respiratory Clinic to optimize asthma control through asthma education, medication counselling, adherence assessment and pharmaceutical care intervention on medication-related problems.

OBJECTIVES: To evaluate the clinical outcomes in terms of asthma control, inhaler technique, medication understanding and adherence among asthmatic patients enrolled in the RMTAC.

METHOD: Patients who were enrolled and had completed at least 4 visits at RMTAC from 2013 to 2014 were retrospectively reviewed. Asthma control was assessed using the Asthma Control Test (ACT, maximum score=25) and medication adherence was based on Modified Morisky Medication Adherence Scale (maximum score=8). Inhaler technique and medication understanding were graded based on criteria set by study pharmacists with maximum scores of 6 and 4 respectively. The clinical outcomes from visit 1 to 4 were analysed using repeated measures of ANOVA or Friedman test where appropriate, with p<0.05 considered as significant. Post-hoc analysis was conducted with the Bonferroni method to look for the differences of clinical outcomes at visit 1 to 2, visit 2 to 3 and visit 3 to 4.

RESULTS: The clinical outcomes among 63 patients had significantly improved from visit 1 to 4. These were shown in asthma control (p<0.001), medication adherence (p=0.008), inhaler technique (p=0.001) and medication understanding (p=0.001). Post-hoc analysis had shown that asthma control and inhaler technique were significantly improved from visit 2 to 3, with mean ACT 19.8 (SD=3.83) vs. 21.5 (SD=2.61) and inhaler technique scoring of median=6 (IQR=0.5) vs. median=6 (IQR=0) respectively, both with p<0.001. No significant difference for medication adherence and understanding was observed at level of visits tested, nonetheless, both achieved maximum score of median=8 (IQR=0) and median=4 (IQR=0) respectively at final visit.

CONCLUSION: Pharmacists’ involvement in RMTAC alongside doctors’ management had shown an overall improvement in asthma clinical outcomes.

KEYWORDS: clinical pharmacy, Sarawak, pharmacist, asthma, respiratory medication therapy adherence clinic

OP1-10 (Oral)

THE CAPABILITY OF THE GENERIC PHARMACEUTICAL INDUSTRY IN MALAYSIA: A NATIONWIDE STUDY

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INTRODUCTION: Generic pharmaceutical products are a major contributor to a country’s economy. To date, no research has been conducted to explore the capabilities of Malaysian generic pharmaceutical companies.

OBJECTIVES: To explore the capability of local generic pharmaceutical companies in producing generic prescription and non-prescription medicines.

METHOD: A cross-sectional nationwide study was conducted from October 2015 to January 2016. Data was gathered using the Survey Monkey® online survey software. An invitation letter containing the online link to the questionnaire was mailed to members of the Malaysian Organization of Pharmaceutical Industries (MOPI) (N=26) licensed in manufacturing generic prescription and non-prescription medicines in Malaysia. Non-MOPI generic manufacturers as of October 2015 and MOPI members manufacturing products other than the products mentioned were excluded. The data was analysed descriptively.

RESULTS: The usable response rate was 53.8% (n=14/26). Among the 14 respondents, 57.1% (n=8) were fully locally-owned companies. The majority of the surveyed companies (n=13) had an R&D unit. 64.3% (n=9) outsourced R&D activities, mainly bioequivalence (BE) studies where 57.1% (n=8) and 42.9% (n=6) outsourced to a local and foreign BE institution respectively. The surveyed companies were capable of manufacturing most dosage forms. Chemists (mean = 14) and pharmacists (mean = 5) were the top-employed professionals. Most companies were compliant to GMP (n=14), GLP (n=13) and GSP (n=11). However, the current generic product registration period (mean = 2.00) and QUEST 3 online system for new generic product registration (mean = 2.21) were the top two MOH drug utilization strategies with the lowest level of satisfaction.

CONCLUSION: Malaysia generic pharmaceutical companies are capable of manufacturing quality generic products. However, they had expressed mixed perceptions on the effectiveness of government policies in promoting the use of generic medicines. As such, this exploratory study could serve as valuable guidance for the improvement of such policies.

KEYWORDS: pharmacy health policy, Malaysia, pharmaceutical industry, capability, generic
OP1-11 (Oral)
PREVALENCE OF PRESCRIBING ERROR AT OUTPATIENT CLINIC AND PHYSICIAN CLINIC IN TELUK INTAN HOSPITAL

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INTRODUCTION: Prescribing errors occurring in hospitals are the main concern especially in outpatient pharmacy department. Pharmacists who screen the prescriptions has to call and re-confirm errors occurred by doctors; it is inefficient, time consuming and it slows down the dispensing process. There is a lack of study pertaining to the prevalence of prescribing errors occurring at the outpatient and physician clinics.

OBJECTIVES: To determine the prevalence and the most common type of prescribing errors at the outpatient and physician clinics in Hospital Teluk Intan.

METHOD: A cross sectional study was conducted using prescriptions received from outpatient pharmacy in Hospital Teluk Intan. Two groups of prescriptions were collected from outpatient clinic and physician clinic in July 2015. Descriptive analysis was used to calculate prevalence of prescribing errors and to determine the most common type of errors occurred at both clinic.

RESULTS: A total of 153 prescriptions were collected from outpatient clinic and physician clinic respectively. The average number of medications per prescription from physician clinic and outpatient clinic were 3.68 and 6.33 respectively. The prevalence of prescribing errors from physician clinic and outpatient clinic were 22% and 39% respectively. The most common error from outpatient clinic was no dosage form indicated (n=26), followed by no dose written on prescription (n=19). Similarly, no dosage form indicated was also the most common type of error in physician clinic (n=16) followed by no dosing frequency indicated (n=6).

CONCLUSION: The prevalence of prescribing errors at outpatient clinic was higher than that at physician clinic. Future study is suggested to apply interventions at outpatient clinic to reduce prescribing errors.

KEYWORDS: pharmacy practice, Perak, prescribing errors, prevalence

OP1-12 (Oral)
A COMPARISON STUDY ON THE PRESCRIBING ERROR IN DISCHARGE PRESCRIPTION FROM MEDICAL WARD IN A REGIONAL REFERRAL HOSPITAL

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INTRODUCTION: Errors are common among discharge prescriptions and are preventable. However, errors occurring during after office hour (AOH) might be missed due to high turnover and understaffed.

OBJECTIVES: To compare the prevalence and type of prescribing errors in medical ward’s discharge prescriptions.

METHOD: A prospective study was conducted for 3 weeks in April 2015, in Hospital Raja Permaisuri Bainun. All the discharge prescriptions from medical wards were included and recorded into self-developed data collection forms. Prescribing errors detected were divided into OH and AOH errors. The categories of prescribers were recorded as house officer, medical officer and specialist. Chi-square test was done through SPSS version 19.0 to determine the relationship.

RESULTS: A total of 263 prescriptions during OH and 264 prescriptions during AOH were collected. Errors were detected in 24.7% of OH and 23.9% of AOH prescriptions. Error rates were similar during OH and AOH, which were 1 in 3 prescriptions. However, all errors during OH prescriptions have been rectified by ward pharmacist, upon collection of medication. Omission of drug and dose (19.3% each) were the most frequent error happened during OH and omission of dose (18.5%) was the most frequent error during AOH. There were significant relationship between the types of error detected and time of which the prescriptions were written. Omission of drug (4.0 %, [p=0.006]) and wrong drug (6.5%, [p=0.019]) were most detected during OH as compared to AOH. The most common drug involved in error was warfarin (5 prescriptions), with omission of duration being the most frequent (3), followed by wrong dose and frequency. The rates of prescribing error for house officers and medical officers were similar (34%) and higher than specialists.

CONCLUSION: The rates of prescribing error were the same during OH and AOH, however drug omission and wrong drug errors could not be detected during AOH and might cause harm to patient.

KEYWORDS: pharmacy practice, Perak, prescribing error, after hour, discharge prescription
OP1-13 (Oral)
MEDICATION ADHERENCE AMONG PATIENTS RECEIVING SUBSIDIZED MEDICATION: DOES THE RATE DIFFER FROM SELF-PAYING PATIENTS?

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INTRODUCTION: Poor adherence to medication prescribed attributable to uncontrolled chronic illness such as diabetes, hypertension, heart disease and others that may cause serious complications and increased cost of medications.

OBJECTIVES: This study aimed to evaluate the rate of medication adherence and factors that possibly may influence adherence to medication between chronic disease patients with medication subsidies and those who are self-paying.

METHOD: This was an observational study of patients with chronic disease that received subsidized medications and self-paying their medications. Respondents who agreed to participate in this study were provided with a medication bottle that comes with a computer chip embedded in the cap of the bottle and an electronic monitoring system that records each time the cap is removed, which is called Medication Event Monitoring Systems (MEMS). Adherence rate was measured objectively using MEMS. Patient’s medication adherence was modelled using multiple logistic regression and only variable with P-value < 0.25 were included in the analysis.

RESULTS: Of 112 respondents only 97 respondents were suitable for data analysis. The mean age of respondents were 55.26±10.76. The mean adherence score for subsidized respondents was 74.1±27.05 and 83.02±17.77 for self-pay respondents. There is no significant association between MEMS score and the payment methods. In the medication adherence model, only respondents who counselled by pharmacist had significant association with medication adherence.

CONCLUSION: When we evaluated the rate of medication adherence, the mean adherence rate showed no differences between both groups. Only medication counselling had significant influences on patients adherence. Future study should focus of patients’ perception on medication adherence to improve medication adherence among patients. Ideally, these study could also be conducted using qualitative method to explore and have better understanding of the factors that may contribute to medication adherence.

KEYWORDS: pharmacy health policy, medication adherence, subsidized medication, self-pay medication

OP1-14 (Oral)
SAFETY-RELATED KNOWLEDGE, ATTITUDE AND PRACTICES OF NURSES HANDLING CYTOTOXIC ANTI-CANCER DRUGS IN DUCHESS OF KENT HOSPITAL (HDOK)

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INTRODUCTION: The recent establishment of pharmacy cytotoxic drug reconstitution service in HDOK is expected to lead to increasing number of patients receiving chemotherapy in this hospital and results in increased exposure to nurses handling the cytotoxic drugs.

OBJECTIVES: This study aimed to evaluate change in nurses’ safety-related knowledge, attitude and practices in handling cytotoxic drugs after a series of pharmacist-based interventions.

METHOD: This prospective interventional study with a before and after design recruited all nurses (n=87) in 6 wards who are involved in cytotoxic drug administration to answer a self-administered, validated questionnaire adapted from a previous study. A self-developed performance checklist was then used by investigators to assess the compliance of all these wards with the recommendations. There was a gap of 2 months intervention period between first (pre) and second (post) assessment. Interventions included Continuing Nurse Education, establishment of Standard Operating Procedure, distribution of spill kit to wards, spillage management briefing and supply of chemo gloves for administration.

RESULTS: The median age of nurses was 26 (6.0). Most of them were female (96%). The mean knowledge score of nurses was significantly increased from 49.32 ± 10.58 to 57.14 ± 12.18 out of 100 (p<0.001) post-intervention. Only one item displayed significant change in the correct attitude of nurses post-intervention (57.5% to 73.5%, p=0.044), while no changes have been detected in other items. Overall, the median practice score among the wards was improved significantly for transportation (from 5 (2) to 6 (2), p=0.035), spillage (from 4 (3) to 8.5 (3), p=0.001) and waste disposal of cytotoxic drugs in wards (from 1 (1) to 3 (1), p=0.004).

CONCLUSION: The pharmacist-based interventions improved the knowledge and safe practices of nurses in cytotoxic drug handling, however difference in attitude was not found to be statistically significant. More experiences and practices are needed for change in nurses’ attitude.

KEYWORDS: pharmacy practice, Sabah, cytotoxic drugs, occupational exposure, pharmacist-based intervention
OP1-15 (Oral)
IMPACT OF PHARMACIST INITIATED ANTIMICROBIAL STEWARDSHIP STRATEGIES ON EARLY INTRAVENOUS TO ORAL ANTIBIOTICS SWITCH PRACTICE IN DISTRICT HOSPITALS

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INTRODUCTION: Antimicrobial stewardship (AMS) is established in most of the Malaysian tertiary hospitals, but it has not been fully introduced to district hospitals. Early intravenous to oral (IV-PO) antibiotics switch, which is one of the important elements in AMS is not well implemented.

OBJECTIVES: This study aimed to evaluate the impact of pharmacist initiated AMS strategies on early IV-PO antibiotics switch practice in Sarawak district hospitals.

METHOD: This study was a before and after cross-sectional interventional study conducted in medical wards of 9 Sarawak district hospitals from May to August 2015. In pre-intervention phase, pharmacists performed conventional practice of reviewing medication charts and verbally informed the prescribers on eligible IV-PO switches. In post-intervention phase, pharmacists introduced the doctors on IV-PO switch protocol. Clinical intervention forms which contained switch criteria and oral antibiotic recommendation were attached on case notes when patients were eligible for switch. Stickers of IV-PO switch were applied at prescriptions to serve as reminders.

RESULTS: 72 patients taking 79 courses of antibiotics and 76 patients taking 77 courses were recruited into the pre-intervention phase and post-intervention phase respectively. Timeliness of IV-PO switching improved by 1.53 days in the post-intervention phase (p< 0.001; 95%CI 1.26-2.00 days). Mean duration of IV antibiotics in the post-intervention phase was shorter than the pre-intervention phase (2.81±1.77 vs. 4.05±2.81 days; p< 0.001). The proportion of IV-PO switches that were only performed upon discharge reduced significantly in the post-intervention phase (31.2% vs. 82.3%, p<0.001). Length of hospital stay in the post-intervention phase was shortened by 1.44 days compared to the pre-intervention phase (p=0.001). Median antibiotic cost savings were significantly higher in the post-intervention phase (RM21.96±23.23 vs. RM13.1±13.76; p=0.025).

CONCLUSION: Pharmacist initiated AMS strategies in district hospitals are successful in improving timeliness of IV-PO switch, reducing duration of IV, reducing length of hospitalization, and increasing antibiotic cost savings.

KEYWORDS: pharmacy practice, Sarawak, antimicrobial stewardship, iv to oral switch, antibiotics

OP1-16 (Oral)
QUALITY OF LIFE AND HAART ADHERENCE AMONG PEOPLE LIVING WITH HIV (PLHIV)

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INTRODUCTION: Adherence to antiretroviral is the second strongest predictor of disease progression to AIDS and death rate, after CD4 count being the strongest predictor. In outpatient clinics settings, there is a negative correlation of viral load and QOL of PLHIV.

OBJECTIVES: This study aimed to assess the correlation between QOL among PLHIV and their adherence to HAART.

METHOD: This was a cross-sectional observational study. Patients were recruited in RV clinic using systematic random sampling. Recruited patients were given a validated 31-item WHOQOL-BREF HIV questionnaire to assess their QOL. Their adherence was then assessed with 8-items Morisky Medication Adherence Scale (MMAS). The significance level of correlation was then calculated using Spearman correlation.

RESULTS: Among 72 studied patients, the mean age was 42 ± 9.4 years and 62.5% were male. Based on 8-items MMAS, 90.3% of the participants had medium to high adherence and 9.7% had low adherence to HAART, with a mean score of 7.3(SD 0.89). The mean total scores for 31-item WHOQOL-BREF HIV are 86.1(SD 11.88). 15.4(SD 2.42) was scored for the physical needs domain, 14.4(SD 2.26) for the psychological domain, 14.6(SD 2.31) for the level of independence domain, 14.1(SD 2.81) for the relationships domain, 14.7(SD 2.25) for the environment domain, and 12.9(SD 4.01) for the spirituality domain. A negative and weak correlation between WHOQOL-BREF HIV and HAART adherence (-0.026) was reported in this study. There was also no difference observed between socio-demographic characteristics among studied population in their adherence to HAART.

CONCLUSION: Correlation between QOL and HAART adherence among PLHIV in this study was negligible. Therefore there is no significant relationship between these variables.

KEYWORDS: pharmacy practice, QOL, HAART, adherence
OP1-17 (Oral)
RISK FACTORS AND CLINICAL OUTCOMES OF PATIENTS WITH MULTIDRUG RESISTANT ACINETOBACTER BAUMANNII INFECTION IN INTENSIVE CARE UNIT OF HOSPITAL SULTANAH NUR ZAHIRAH (HSNZ), KUALA TERENGGANU

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INTRODUCTION: Outbreaks with the multidrug resistant (MDR) strain of Acinetobacter baumannii have emerged as a major problem in the intensive care unit (ICU) worldwide, contributing to high mortality rate and increased length of stay in ICUs.

OBJECTIVES: This study aimed to investigate the incidence of MDR A. baumannii nosocomial infection in HSNZ ICU, the contributory risk factors and the clinical outcomes in terms of mortality and length of hospital stay.

METHOD: This retrospective cohort study was conducted at Hospital Sultanah Nur Zahirah, Kuala Terengganu. Data between 1st January 2013 till 31st May 2015 were retrieved from Infectious Controlled Disease Unit and Hospital Information System. Control group was set as patients who were infected with the non-MDR strain of the pathogen.

RESULTS: There were 53 cases of A. baumannii infection isolated from various types of biological specimens. The incidence of MDR A. baumannii infection was 15.2 episodes per 1,000 hospital admissions. By using univariate analysis, significantly independent factors associated with MDR A. baumannii infection were previous use of beta lactam/beta lactamase inhibitor (p=0.021) and vancomycin (p=0.03) antibiotics. The overall mortality rate was found to be significantly higher in patients with MDR A. baumannii than the control group (p=0.01).

CONCLUSION: As MDR A. baumannii infection is associated with high mortality rate, proper use of antibiotics and aggressive infection control strategies has to be implemented in order to reduce or prevent MDR Acinetobacter infection and its adverse effects on hospitalized patients.

KEYWORDS: clinical pharmacy, Terengganu, Acinetobacter, MDR, risk factor

OP1-18 (Oral)
A CROSS SECTIONAL SURVEY ON SELF MEDICATION PRACTICE AND AWARENESS AMONG PUBLIC ATTENDING PASIR MAS HOSPITAL, KELANTAN

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INTRODUCTION: Nowadays, self-medication is increasingly prevalent worldwide. Consumers empowered with better health knowledge have more alternatives and choices to make informed decisions regarding their health. This phenomenon also contributes in an increasing trend of self-medication practice worldwide. However, inappropriate practice of self-medication especially that involves the use of antibiotics may contribute to antibiotic resistance.

OBJECTIVES: This study was conducted to evaluate self-medication practice among public and to assess public awareness of self-medication.

METHOD: A cross-sectional study was carried out in Outpatient Pharmacy Unit, Hospital Pasir Mas using a validated structured questionnaire from June to August 2015. Respondents were selected randomly and a total of 300 respondents were recruited. Questionnaires were self-administered by the respondents, facilitated by the data collectors. Questionnaire was administered in Malay. Data analysis was done using SPSS software version 20. Descriptive analysis was conducted.

RESULTS: Majority of the respondents were female (51.30%, n=154) and were between the age of 31 to 50 years old (36.70%). Most of them were Malay (91%), with secondary education (47.30%) and working in the private sector (34.30%). Of the 300 participants, 54.3% (n=163) practiced self-medication and (45.3%, n=136) self-medicated cough medication. 78% (n=181) of the participants who self-mediated usually obtained information from healthcare officers or pharmacists. Only 47.7% (n=143) realised that adverse drug reactions may happen and only 37.3% (n=112) was aware of food-drug and drug-drug interactions. Less than 40% of the participants read their medical labels and expiry dates.

CONCLUSION: Self-medication practice is prevalent in Pasir Mas district but inappropriate practice is unsafe. Thus, education on proper use of medication and proper practice of self-medication needs to be emphasised to ensure quality use of medicines.

KEYWORDS: pharmacy education, Kelantan, self-medication, practice, awareness
INTRODUCTION: Adherence to medications among patients with RA ranges from 30% to 80%. Beliefs about illness and knowledge about the medications influence adherence to the treatment. It is important for patients to have good adherence to their RA medications in order to improve the efficacy of the treatment.

OBJECTIVES: The objective of the study was to assess the impact of pharmacists’ counselling on patient’s belief, knowledge and adherence to RA medications and to evaluate the differences after first and second counselling sessions.

METHOD: The subjects for this prospective study were recruited from Rheumatology Clinic, Hospital Pulau Pinang from May to July 2014. Patient’s belief, knowledge and adherence to RA medication pre and post counselling was assessed at baseline, T1, 1 month, T2 and 2 months, T3, using the Beliefs about Medicines Questionnaire (BMQ), medications dosage, frequency, indication and time (DFIT) and Morisky Medication Adherence Scale (MMAS). p value of < 0.05 was considered statistically significant.

RESULTS: A total of 22 patients with mean age 58, SD=2.37 completed three visits. Majority of the patients were female (91%) and median duration of treatment of 3.5 years, IQR 2.0-8.5. BMQ results showed that effect of counselling on patient’s belief was not statistically significant. Result from DFIT (T0; median 100, IQR 75-100; T1; median 100, IQR 97-100; T2; median 100, IQR 100-100) and MMAS (T0; median 5.38, IQR 4-8; T1; median 8, IQR 7-8; T2; median 8, IQR 8-8) showed that patient’s knowledge and adherence pre and post counselling (T0, T1 and T2, T3) were significantly different. There were no statistically significant difference in DFIT and MMAS between T1 and T2.

CONCLUSION: This study showed that pharmacists’ counselling improved patient’s knowledge and adherence to their RA medications.

KEYWORDS: pharmacy practice, Pulau Pinang, rheumatoid arthritis, belief, knowledge
OP1-21 (Oral)
DOCTOR’S PERCEPTIONS AND EXPECTATIONS OF THE ROLE OF CLINICAL PHARMACISTS IN A REGIONAL REFERRAL HOSPITAL
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INTRODUCTION: Collaboration among healthcare professionals can be established by understanding each other’s roles and needs. This is to achieve optimal outcomes for the patients.

OBJECTIVES: The study was to investigate the perceptions and expectations of doctors towards the roles of clinical pharmacists in a regional referral hospital.

METHOD: A cross-sectional study was conducted from September until October 2014. Respondents included all doctors from wards with permanent clinical pharmacists for at least one year. Structured questionnaire which consisted of 3 sections namely doctors’ perceptions, expectations and experience were distributed. Chi square was used for statistical analysis.

RESULTS: A pilot study was conducted among 10 doctors. The Cronbach’s alphas for the 3 sections were 0.876, 0.845 and 0.863. 200 questionnaires were distributed. Response rate was 53%. The respondents were from medical (44.3%), pediatric (16%), surgical (12.8%), and intensive care units (14.2%). Doctors including house officers (30.2%), medical officers (34.9%), specialists (16.0%) and consultants (18.9%), were comfortable with pharmacists’ roles in identifying and preventing prescription errors (83%), providing patient education (82.1%), designing and monitoring pharmacotherapeutic regimens (76.4%) as well as monitoring outcomes of pharmacotherapeutic regimens and plans (76.4%). 15.1% of respondents disagreed that pharmacists should assist patients in selecting non-prescription medications. 85% of respondents agreed that pharmacists were reliable sources of drug information. 32.1% disagreed that pharmacists routinely inform them about cost-effective drug alternatives. There were no statistically significant associations between the positions and disciplines of the doctors with all the findings.

CONCLUSION: Majority of doctors appeared to be comfortable with most of the pharmacists’ roles in providing pharmaceutical care, but not to the extent of providing direct medication suggestion to patient. Through this study, we can focus on the areas that need to be strengthened in order to improve the collaboration between doctors and pharmacists.

KEYWORDS: pharmacy practice, perception, expectation, clinical pharmacists

OP1-22 (Oral)
THE PREVALENCE OF POLYPHARMACY IN THE ELDERLY IN MEDICAL WARDS OF A MALAYSIAN GOVERNMENT HOSPITAL
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INTRODUCTION: Polypharmacy was common in elderly patients. To date, there is a lack of study on polypharmacy in elderly patients in Malaysia including factors associated to polypharmacy.

OBJECTIVES: The study aimed to investigate the prevalence of polypharmacy in medical wards of Hospital Sungai Buloh.

METHOD: A retrospective study was conducted in Hospital Sungai Buloh which involved 314 patients aged 65 years old and above. Data was collected for 6 months periods, from January 2014 to August 2014. Student t-test was used to compare mean between continuous variable. Pearson Chi-square was used to examine the difference in the allocation of categorical variables between patient with and without polypharmacy. Univariate logistic regression model was used to evaluate the factors associated to polypharmacy which expressed as odds ratio and 95% confidence interval.

RESULTS: Prevalence of polypharmacy in elderly patients significantly increased from 63.7% (admission) to 70.7% at discharge (p <0.001). The most frequently used drugs were cardiovascular drugs. The median (IQR) duration of hospital stay was 3 (2-5) days. There was a significant association between duration of hospital stay with the number of drugs at discharge (p=0.012). Charlson index score, diabetes mellitus, hypertension, chronic renal failure (CRF), ischemic heart disease (IHD), dyslipidemia, heart failure and number of diagnoses had significant association with polypharmacy at admission. Besides, Charlson index score, number of drugs at admission, diabetes mellitus, IHD, CRF, hypertension and age 65-69 years old had significant association with polypharmacy at discharge.

CONCLUSION: Polypharmacy was common in elderly patients in our institution medical wards. Hence, physicians and pharmacists play an important role in reviewing patient profiles and optimising drug therapy to improve drug safety in elderly patients.

KEYWORDS: pharmacy practice, Selangor, polypharmacy, elderly, medical wards
OP1-23 (Oral)
EVALUATION OF COMPLETION RATES, MEDICATION COST AND ADVERSE DRUG REACTIONS RELATED TO TUBERCULOSIS TREATMENT IN MELAKA

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INTRODUCTION: Tuberculosis is ranked as the second leading cause of death worldwide. The annual incidence rate reported in Malaysia shows an increasing trend, but the treatment success rate has declined over the years despite implementation of Direct Observed Treatments (DOTS).

OBJECTIVES: To determine the completion rates, medication cost and types of adverse drug reactions related to anti-tuberculosis treatment among patients in Hospital Melaka.

METHOD: A case-control study was conducted by involving newly-diagnosed tuberculosis patients attending treatment in Chest Clinic, Hospital Melaka between years 2013 to 2014. Control was defined as those who completed tuberculosis treatment; whereas cases were defined as defaulters, those who died, failed or was resistant to treatment. Patients were selected using simple random sampling using list of patients' names from tuberculosis database registry.

RESULTS: A total of 100 patients were selected with ratio 1:1. Among those who completed treatment, 46% patients were confirmed to have fully recovered. About 88% death and 12% defaulted from treatment were observed in cases group. The mean duration for patients to complete anti-tuberculosis treatment was 226 days. Factors associated with incomplete treatment were mean body weight (AOR 0.95; 95% CI 0.91, 0.99), bloody sputum (AOR 4.94; 95% CI 1.16, 21.02) and having past medical history (AOR 2.86; 95% CI 1.07, 7.65). Treatment cost using combined Akurit-4 capsule (RM 419.77) during intensive phase was slightly lower compared to separate pills regimen (RM 502.60). Three patients developed adverse drug reactions including drug induced hepatitis and gout attack.

CONCLUSION: Half proportion of the patients who completed anti-tuberculosis treatment were confirmed to have fully recovered. Effective measures should be taken to ensure the completion of tuberculosis treatment with minimal adverse drug reactions towards patient. Combination pills regimen may serve as an alternative to minimize treatment cost.

KEYWORDS: clinical pharmacy, Melaka, tuberculosis

OP1-24 (Oral)
A STUDY OF FACTORS ASSOCIATED WITH WOUND HEALING IN DIABETIC FOOT ULCER PATIENTS IN TELUK INTAN HOSPITAL

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INTRODUCTION: Diabetic foot ulcer (DFU) may be a life threatening complication if adequate management is not received. There are mixed results from the literature on the effect of comorbidity, dressing used and glycaemic control on the wound healing in diabetic foot ulcer.

OBJECTIVES: To identify the factors contributing to wound healing in diabetic foot ulcer patients attending orthopaedic clinic.

METHOD: A retrospective case control study was conducted in Hospital Teluk Intan from December 2015 until March 2016. The data was collected through a data collection form. The patients’ medical records were retrieved from the medical record office to collect their socio-demographic data and diabetic foot ulcer management data for the past six months.

RESULTS: There were 120 patients with improvement in wound healing while 36 patients with no improvement in wound healing. Between the two groups, there was no significant difference in wound healing in terms of age, gender and ethnicity. In the group with improvement in wound healing (n=120), our study found that Povidone (n=71) was the most frequently used dressing in the first month of DFU management. For the second month, Dermasyn® and Dermasyn® combination (n=82) was the highest prescribed dressing as well as subsequent months. Both dressing compliance and glycaemic control showed significant improvement in wound healing at an odds ratio of 5.297 (p<0.001) and 3.448 (p<0.001) respectively.

CONCLUSION: Our study found that glycaemic control and dressing compliance are factors that significantly improve wound healing among DFU patients.

KEYWORDS: pharmacy practice, Perak, Diabetic Foot Ulcer (DFU), factors affecting wound healing
QUALITY OF LIFE OUTCOMES FOLLOWING SIX MONTHS OF METHADONE MAINTENANCE THERAPY IN HEALTH CLINICS

INTRODUCTION: Methadone Maintenance Therapy (MMT) is one of the drug substitution therapies. Aside from its role in harm reduction against HIV infection, MMT programme may potentially enhance clients’ quality of life (QOL).

OBJECTIVES: To identify the outcomes of MMT programme on clients’ QOL after 6 months of treatment and to explore factors that may be associated with changes in their QOL.

METHOD: In this retrospective report review, 58 subjects from 2 government MMT clinics were selected from the district of Kuala Krai, Kelantan, Malaysia. The score from the WHO Quality of Life questionnaire (WHOQOL-BREF), at baseline and 6 months after therapy were collected and involved five domains; general health, physical, psychological, social relationship and environment. Patient characteristics collected were age, race, education level, way of administration, duration of treatment, employment status, marital status, HIV status, Hepatitis B status, Hepatitis C status and drug urine test result. We used SPSS version 18 for statistical analysis.

RESULTS: There was significant improvement in all five domains of QOL, after 6 months of MMT (p<0.001). Highest education level had a significant effect on general health domain (p=0.008). Marital status and HIV status had a significant effect on psychological domain (p=0.019, p=0.009) and social domain (p=0.036, p=0.017) respectively. Hepatitis B showed a significant effect in all domains of QOL which were general health (p=0.018), physical (p=0.007), psychological (p=0.008), social (p=0.012) and environment (p=0.002). Duration of treatment, employment status, way of administration, drug urine test result and Hepatitis C did not show any significant effect in all domains of QOL.

CONCLUSION: There was a significant improvement in the QOL of MMT clients who stayed in the programme for at least 6 months in the district of Kuala Krai, Kelantan, Malaysia.

KEYWORDS: pharmacy practice, Kelantan, methadone, quality of life

REVISIT RATES WITH THE USE OF PRE-PACKED MEDICATIONS AT THE EMERGENCY DEPARTMENT OF A TERTIARY HOSPITAL

INTRODUCTION: Emergency departments in Malaysian government hospitals do not only handle major cases, but also minor ailments requiring prescribing of over-the-counter (OTC) medications. Such medications are packed in predetermined sizes in pharmacy for ease of filling and dispensing.

OBJECTIVES: To determine the revisit rate to the emergency department due to unresolved symptoms in those receiving pre-packed medications.

METHOD: Past electronic prescriptions from the emergency department were generated and reviewed individually. All prescriptions containing OTC medicines were followed up and examined for two weeks to identify all revisits to the emergency department.

RESULTS: Of the 401 patients analysed, only 8 patients revisited the emergency department with the same diagnosis on both visits. The revisit may be due to insufficient medication supply based on the time interval between visits (average 5.5 days). Hence, the revisit rate is estimated at 2%. The low revisit rate may be due to the diagnosis itself, as minor ailments only require OTC medications and not hospitalisation. The use of pre-packed medication also saved MYR2.62 on medication cost per prescription.

CONCLUSION: Patients prescribed with OTC medications from the emergency department have low revisit rate. Dispensing pre-packed medications saves on medication expenditure and may be suitable for pharmacies to handle prescriptions for OTC medications.

KEYWORDS: pharmacy practice, revisit, emergency department, medication
OP1-27 (Oral)
ANTIEPILEPTIC DRUG UTILISATION AND QUALITY OF LIFE OF EPILEPSY PATIENTS IN MELAKA HOSPITAL

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INTRODUCTION: Epilepsy is a common and chronic disorder of brain. Measuring the quality of life (QOL) of epilepsy patients is increasingly recognized as an important component of clinical management.

OBJECTIVES: The aim of this study was to get an insight into the utilization of antiepileptic drugs (AED) in Hospital Melaka (HM) and to investigate the relationship between patients’ QOL and treatment groups.

METHOD: Patients were interviewed in this cross-sectional study using English and Malay translated version of the QOL in Epilepsy Scale-31 (QOLIE 31) over nine-month period. Analysis of covariance was used for data analysis.

RESULTS: A total of 92 adults with epilepsy attending the outpatient clinic and neurology clinic of HM were interviewed. Generalized epilepsy were the most common (81.5%) classification of seizure, followed by partial seizure (16.3%) and unclassified seizure (2.2%). 60.9% of the patients were on monotherapy, 27.2% on dual AED while only 10.9% on polytherapy. Valproate (62%) was the most frequently prescribed AED, followed by Carbamazepine (30.4%), Phenytoin (27.2%), Lamotrigine (19.6%), Levetiracetam (5.4%) and Topiramate (1.1%). Older generation of AED (75%) was the most common used AED. The highest sub-scale score for QOLIE 31 was the overall QOL with a mean of 69.3±20.1 and the lowest was seizure worry with 53.2 ± 26.6. All the sub-scale of QOLIE-31 shown no correlation with types of therapy (p=0.876) and generation of AED (p=0.147).

CONCLUSION: Most epilepsy patients were maintained with monotherapy and the most prescribed AED is Valproate. This study confirms the types of therapy and the generation of AED used will not affect the QOL of the patients.

KEYWORDS: pharmacy practice, Melaka, QOLIE31, antiepileptic drug, quality of life

OP1-28 (Oral)
APPROPRIATENESS AND COST IMPACT OF INTRA VENOUS (IV) PROTON PUMP INHIBITORS (PPI) USE IN NON-INTENSIVE CARE UNIT (NON-ICU) SETTING IN PUTRAJAYA HOSPITAL

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INTRODUCTION: Proton Pump Inhibitor (PPI) is used for the treatment and prophylaxis of acid peptic conditions. The increased use of PPI over the past several years has raised concerns related to their inappropriate utilisation and associated cost. IV PPI use among patients in non-ICU wards is potentially associated with the inappropriate indication and length of therapy during hospital stay.

OBJECTIVES: This study aimed to assess clinical and cost impact of IV PPI use in non-ICU patients by assessing the appropriateness of initiation of IV PPI, conversion from IV to oral PPI and determining the cost impact associated with the use of IV PPI.

METHOD: A descriptive cross-sectional study was conducted in Hospital Putrajaya from January to May 2015. Hospitalised patients on IV PPI and aged more than 18 years old were recruited via convenience sampling.

RESULTS: A total of 110 patients were included. IV PPI was found to be appropriate initiated in 60% (n=66) of the patients. In the appropriate group, 56.1% (n=37) of the patients were prescribed with IV PPI due to UGIB, 30.3% (n=20) of the patients for stress ulcer prophylaxis, 10.6% (n=7) of the patients for treatment of Gastroesophageal Reflux Disease and 3.0% (n=2) of the patients for unjustified use. Majority of the patients (n=50) were candidates being switched to oral dosage form during their hospitalisation but only 60% (n=30) were actually switched. Inappropriate initiation of PPIs via the IV route was more likely to take place in surgical wards than in medical wards (39.2% vs 34.0%, p-value = 0.007).

CONCLUSION: One third of the patients were not appropriately initiated with IV PPI and 53.7% of the patients were not switched to oral form when indicated. The cost analysis associated with the appropriateness of IV PPI use as well as the route of administration of PPI revealed a possible saving up to RM7,409.32.

KEYWORDS: clinical pharmacy, Putrajaya, proton pump inhibitors, non-ICU
OP1-29 (Oral)
USE, BEHAVIOUR AND UNDERSTANDING OF CONSUMERS TOWARDS DIETARY SUPPLEMENTS

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INTRODUCTION: As people become more conscious of their health and the need to maintain health, there may be an increase in the consumption of dietary supplements. This is especially true of affluent societies. Dietary supplements cover a range of products and include vitamin and mineral supplements.

OBJECTIVES: This study aimed to determine the prevalence of use of dietary supplements, to profile the users of dietary supplements in terms of their demographic characteristics and to compare between users and non-users in terms of their perceptions towards dietary supplements.

METHOD: Convenience sampling was employed for this study and data was collected using a self-administered seven-page questionnaire. The survey was conducted at bus stations, LRT stations and shopping malls in Selangor and Penang over a 6-week period. The data was analysed using chi-square, principal component analysis, t-test and ANOVA.

RESULTS: A total of 402 respondents completed the questionnaire. About 64% (n=259) of the respondents used dietary supplements and the main reason was for maintaining overall health (28.6%). The most commonly used supplements were vitamin C, omega fish oil and multivitamin. Blackmores was the most common brand used. The results showed that there were no statistically significant relationship between demographic variables and use of dietary supplements except for a decreased use of dietary supplements with those who drank alcohol (p=0.007). By using principal component analysis, belief and concern of consumers towards dietary supplements were identified. Users of dietary supplements had a stronger and belief in dietary supplements as compared to non-users (p<0.001).

CONCLUSION: As compared to other studies, this study did not show an association between the usage of dietary supplements with gender, age and self-perceived health status. Future research could probably look at the use of dietary supplements and its impact, if any, on health status.

KEYWORDS: pharmacy education, Selangor, Penang, dietary supplements, behaviour

OP1-30 (Oral)
PUBLICATION AND BELIEF OF GENERIC VERSUS BRANDED MEDICATION: A CROSS-SECTIONAL STUDY IN SLIM RIVER HOSPITAL, MALAYSIA

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INTRODUCTION: Medications can be categorised into branded or generic. According to United State Food and Drug Administration (US FDA), generic medication is identical or bioequivalent to a branded medication, in dosage form, safety, strength, route of administration, quality, performance characteristics and intended usage. However, it is important for patients to have sufficient knowledge about the medications that they consume.

OBJECTIVES: This study aimed to identify patients’ knowledge and perception towards generic and branded medications and its associations with demographics factors.

METHOD: A cross-sectional study was conducted from April 2015 to August 2015 in Hospital Slim River. Patients who visited outpatients pharmacy were conveniently selected for this study. A self-administered questionnaire was given to the patients after having obtained their consent. The questionnaire contained patient’s demographic data, patient’s knowledge, perception and preference of the medication.

RESULTS: A total of 230 patients participated in this study. 134 (58.3%) patients knew the term ‘generic medicine’ and majority perceived that the availability of generic medication is to help reduce the medicine cost. 75 (32.6%) patients answered that generic medicine is as effective as branded medicine and 94 (40.9 %) believed that generic medicine is as safe as branded medication. 128 (55.7 %) patients perceived that generic is cheaper than branded medication. 109 (47.4%) preferred to be prescribed with generic medication.

CONCLUSION: Based on this study, generic medications are well accepted among patients. However, knowledge of generic medication is lacking among Malaysian patients. Education and awareness of the use of generic medications are required to support the implementation of generic medication policies in Malaysia.

KEYWORDS: pharmacy education, Perak, generic, branded, medication
Illness Perception and Metabolic Control (HbA1c) in Patient with Type 2 Diabetes Mellitus

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Introduction: Despite the availability of a wide selection of antidiabetic treatments, many Type 2 DM patients still do not have controlled glucose level. Besides pharmacological intervention, patients’ implicit beliefs about their illness can be the best target for health intervention. Thus, we conducted a quantitative study to explore how patients’ illness perception (IP) affects their metabolic control.

Objectives: To evaluate the associations between IP dimensions and metabolic control (HbA1c) of Type 2 DM patients in Hospital Selama and to identify patients’ perception on the DM causal factors.

Method: A cross-sectional study was conducted in outpatient department Hospital Selama from October to December 2015. A total of 200 Type 2 DM patients were recruited by using simple random sampling. Self-administered validated questionnaire consisted of three sections was used. Data were analysed by using SPSS version 18. The associations between eight IP dimensions and HbA1c were evaluated by multiple linear regressions. P value less than 0.05 was considered statistically significant.

Results: Data from 200 respondents were analysed with mean age of 57.7 years old (SE, 9.8). Majority were females (64.5%), Malays (86%), with education level of primary school (43.5%), and with family diabetes history (53.5%). Median duration of illness is 5 years (IQR=7) and HbA1c level is 8.15% (IQR=3.1). The mean score of eight IP dimensions is 33.7 (SE, 8.43) out of total score of 80. Using multiple linear regression, HbA1c was found to be significantly associated with IP dimension of identity symptom 0.221 (95% CI: 0.083, 0.358). 79% of the patients rank diet and eating behavior as the main factor for DM.

Conclusion: IP dimension of identity symptom significantly correlates with DM metabolic control. By understanding patients’ IP, healthcare providers can focus on behavioural approach in managing DM patients. Steps need to be taken to educate the patients about the importance of diet control in managing or preventing DM.

Keywords: clinical pharmacy, Perak, diabetes mellitus, illness perception, metabolic control

Parents’ and Prescribers’ Attitude and Knowledge Towards Paediatric Cough and Cold Products in Keningau Hospital, Sabah

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Introduction: Despite widespread use, there has been insufficient evidence supporting safety and efficacy of cough and cold products (CACP) for use in children. This was further consolidated by the Food and Drug Administration (FDA) who issued a warning on the usage. However several studies showed that such practices are still prevalent due to insufficient knowledge and awareness.

Objectives: To assess the attitude and knowledge of parents and prescribers in terms of safety and efficacy of CACP.

Method: This was a cross-sectional study carried out among parents and prescribers in Hospital Keningau. All outpatient prescriptions with a diagnosis of upper respiratory tract infection, cold or cough were collected and analysed for a period of one week to identify the most prescribed products. This was followed by administering an adapted CACP Status Survey to parents collecting medications and all the prescribers in our setting.

Results: A total of 120 completed survey forms were collected from the respondents (90 parents and 30 prescribers). Based on 300 prescriptions analysed, syrup diphenhydramine was the most commonly used for children below two years old (12.5%) while for children from two to five years old, syrup chlorpheniramine (54.9%) had the highest usage. Only 62.2% of parents were aware of the side effects. However 90.5% of prescribers claimed that parents were informed of the side effects. 57.4% of prescribers claimed that they were pressured to prescribe CACP by the parents, but only 16.7% of parents agreed they pressured them. There was a clear association between the respondents with awareness on FDA regulation (X²=34.21, p<0.001), CACP effectiveness (X²=23.02, p<0.001) and safety (X²=12.27, p<0.001). Prescribers were more likely to agree that CACP are not effective (80.0%) and not safe (83.3%) as compared to parents.

Conclusion: Usage of CACP is still prevalent in our setting. This is most likely to be contributed by a lack of knowledge and attitude among parents, and presumed pressure on prescribers.

Keywords: pharmacy practice, Sabah, cough and cold products, knowledge, attitude
OP1-33 (Oral)
THE IMPACT OF PHARMACIST-LED PATIENT EDUCATION PROGRAMME ON THE QUALITY OF BOWEL PREPARATION FOR COLONOSCOPY: A PRELIMINARY FINDING

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INTRODUCTION: Inadequate bowel preparation prior to colonoscopy leads to poor quality of visualization.

OBJECTIVES: The main objective of this study is to evaluate the impact of pharmacist-led patient education programme on the quality of bowel preparation.

METHOD: An interim analysis of observer-blinded, prospective, randomised, controlled trial was conducted in an outpatient surgical clinic of a tertiary referral centre. Forty one out of 312 subjects were successfully enrolled and randomly assigned to one of two groups. The control group received the standard written and verbal instructions for colonoscopy. The intervention group were assigned to an intensive and structured pharmacist-led education including provision of a validated booklet. Subjects were required to complete a questionnaire before colonoscopy. An attending blinded, endoscopist will determine the quality of bowel preparation using the validated Boston Bowel Preparation Scale.

RESULTS: Demographic data were comparable between the two groups. The education intervention group revealed higher proportion (100%) of good quality bowel preparation (BBPS score >5) as compared to control group (38.9%). A difference of 61.1% between these two groups was statistically significant (p< 0.001). The median total score of the colonoscopy evaluation for interventional group (7) is significantly higher than the control group (5) with p=0.001.

CONCLUSION: Our preliminary analysis showed positive effect of pharmacist-led educational intervention on the quality of bowel preparation.

KEYWORDS: pharmacy practice, bowel preparation, patient education, colonoscopy

OP1-34 (Oral)
THE EMERGENCE OF MULTI-DRUG RESISTANT (MDR) ACINETOBACTER BAUMANNII INFECTION: RISK FACTORS AND OUTCOMES AMONG PATIENTS IN INTENSIVE CARE UNIT KULIM HOSPITAL

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INTRODUCTION: Acinetobacter baumannii (AB) poses a significant health threat to hospitalised patients, especially those in intensive care units (ICU).

OBJECTIVES: This study aimed to determine the risk factors and outcomes associated with the emergence of multi-drug resistant (MDR) Acinetobacter baumanii infections.

METHOD: A retrospective matched case-control study was conducted in ICU Hospital Kulim from January 2013 to December 2013. Case patient (with AB infection) and control patient (without AB infection) were matched for age, sex, severity of illness (SAPS II score), location during ICU stay and admission date in ratio 1:1.

RESULTS: Among 31 episodes of MDR AB infection isolated during the study period, only 20 cases were able being matched with controls. Simple logistic regression analysis identified four independent risk factors associated with MDR Acinetobacter baumanii infection: length of stay in intensive care unit prior the infection (odds ratio OR=0.81, 95% confidence interval CI(0.66-0.99; p=0.04), duration of ventilator support(OR=0.76, 95%CI=0.65-0.90; p=0.0009), prior carbapenem utilization (OR=0.21, 95%CI=0.05-0.83; p=0.027), and recent invasive procedure such as dialysis (OR=5.67,95%CI=1.25-25.61; p=0.02), tracheostomy (OR=8.5,95%CI=1.86-38.81; p=0.006) and in-dwelling femoral catheter (OR=7.34,95%CI=1.34-40.55;p=0.02). The mortality (OR=0.08, 95% CI=0.02-0.37; p=0.01) and length of ICU stay after infection (OR=0.72, 95% CI=0.58-0.91; p=0.005) were identified as outcome of MDR AB infection.

CONCLUSION: MDR AB infections increase mortality rate and prolong ICU stay. By identifying the risk factors associated with the emergence of MDR AB infections, development of control measure can be taken in order to reduce the emergence of multidrug resistant organism.

KEYWORDS: clinical pharmacy, Kedah, multi-drug resistant, risk factor
OP1-35 (Oral)
DEFERASIROX COMPLIANCE AND COST SAVING AMONG CHILDREN WITH THALASSAEMIA: A ONE YEAR RETROSPECTIVE ANALYSIS

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INTRODUCTION: Compliance assessment is an essential component of monitoring deferasirox therapy in children due to the disease complication and high cost of the medication. Pharmacists play a vital role in assessing deferasirox compliance and providing education. Pill count is a well-established method for assessing compliance in antiretroviral therapy, but not commonly practiced for deferasirox therapy.

OBJECTIVES: To evaluate deferasirox compliance among thalassaemia children with pill count method and to identify the reasons contributing to non-compliance. We also intend to determine total saving of deferasirox through refill method by pharmacists.

METHOD: A retrospective study was performed on thalassaemia children prescribed with deferasirox that had at least 10 follow-ups with pharmacy counselling unit, Hospital Seberang Jaya in 2013. Patients’ monthly deferasirox refill records were obtained and patients’ compliance was assessed with pill count method. Reasons for their non-compliance were explored. Cost-saving analysis was performed on the cost of deferasirox saved through refill method. Descriptive analysis was used to determine patients’ compliance rate and reasons for their non-compliance.

RESULTS: A total of 22 thalassaemia children with mean age of 9.1± 3.2 years were enrolled in the study. Majority (81.9%, n= 18) were on deferoxamine before deferasirox therapy. All patients were prescribed deferasirox with recommended dose ranged 20-30mg/kg daily. Majority (86.4%, n=19) were in good compliance category (compliance rate > 80%). Reasons for non-compliance were mainly (63.6%, n=14) attributed to non-drug related illnesses such as fever, cough and nausea. Only 27.3% (n=6) were caused by drug related side effects. Total saving of deferasirox through refill method by pharmacists was RM 48,282.20/year.

CONCLUSION: Majority of thalassaemia children in Hospital Seberang Jaya are compliant with deferasirox therapy. The intervention performed through refill method has a positive financial impact on cost-saving of deferasirox.

KEYWORDS: pharmacy practice, Penang, deferasirox, compliance, cost saving

OP1-36 (Oral)
EVALUATING THE FREQUENCY OF ERRORS IN PREPARATION AND ADMINISTRATION OF INTRAVENOUS MEDICATIONS IN PEDIATRIC WARDS OF SULTANAH NUR ZAHIRAH HOSPITAL, KUALA TERENGGANU

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INTRODUCTION: Medication error is a preventable event that can occur at any stage of drug delivery process: prescribing, dispensing and administration. Intravenous (IV) medication therapy is associated with higher rates of error compared to orally administered medication, commonly during preparation and administration.

OBJECTIVES: We aimed to determine the types and frequency of medication preparation and administration errors and to identify those risk factors.

METHOD: This is a prospective study. The data was collected by observing nurses during preparation and administration of medications in four paediatric wards from February to August 2015. The main criteria observed were compatible diluent, dose, final concentrations and infusion rates. The relationship between the occurrence of errors and potential risk factors were analysed using logistic regression model.

RESULTS: A total of 330 events of IV preparations and administrations by 68 staff nurses were observed and evaluated. 108 errors were encountered in 21.2% (n=70) of the total observations. The most common types of error were administration of IV doses at a higher final concentration and administration rate higher than the recommended rate (38%) respectively, followed by wrong choice of diluent (20.3%) and dose deviation (3.7%). Cefotaxime (44.4%) was the most common medication associated with error. There was a statistically significant difference in the occurrence of error with the number of IV medications prepared by staff nurses; increase in the number of medication preparations impose 1.5 times higher in risk for errors to happen (95% CI; 1.177, 1.916, p=0.001).

CONCLUSION: High percentage of error observed in this study emphasises the need to improve nurses’ knowledge and adherence to the standard protocols for IV medication preparation and administration.

KEYWORDS: pharmacy practice, Terengganu, intravenous administration, medication errors
EVALUATING PERCEIVED EFFECTIVENESS AND SAFETY TOWARDS ELECTRONIC CIGARETTE AMONG MALAYSIAN VAPERS

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INTRODUCTION: Electronic cigarette (e-cig) is a newly emergent substitute for smoking. The interest and usage of e-cigarettes among consumers increase globally and Malaysia is no exception. The paucity of local data on e-cigarette use, suggests the need to do a quantitative survey.

OBJECTIVES: This study aimed to evaluate the experiences perceived by Malaysian vapers towards e-cig.

METHOD: 220 vapers using e-cig for last month with or without tobacco use were enrolled for the study and grouped into single user (e-cig user who has completely substituted smoking with e-cig) and dual user (e-cig user who partially has substituted smoking with e-cig and is still using tobacco cigarette) based on self-reported quitting along with measurement of Exhaled Carbon monoxide (eCO). Both users’ perceived benefits and undesirable responses towards vaping were evaluated by using a quantitative research questionnaire that consisted of demographic characteristic of participants, reasons to initiate e-cigarette and questions related to evaluating effectiveness and safety of e-cig.

RESULTS: 31.8% vapers quit smoking with the support of e-cig as compared to 67.35% dual users. Moreover dual users showed significant reduction in tobacco cigarette use before and after e-cig use from a median of 20 to 5 cigarettes per day (P<0.001). Adverse and withdrawal symptoms that were observed more in dual users included coughing, breathing problems and craving, whereas significant vomiting, fever and increase in appetite cases were detected among single users.

CONCLUSION: With the help of e-cig, a positive smoking cessation rate is shown among Malaysian vapers whereas reduction in tobacco cigarette consumption is observed in e-cig dual users. Significant undesirable cases of vomiting, fever and increase in appetite cases are noticed in single users. Nevertheless further conventional studies over extended period are warranted to confirm its long term safety and effectiveness among Malaysian population.

KEYWORDS: pharmacy practice, Pahang, electronic cigarette, smoking, carbon monoxide

COMPARISON OF EFFICACY AND SAFETY OF STREPTOKINASE AND TENECTEPLASE IN PATIENTS WITH ST-SEGMENT ELEVATED ACUTE MYOCARDIAL INFARCTION (STEMI) IN MELAKA HOSPITAL

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INTRODUCTION: The treatment of ST-segment elevated acute myocardial infarction (STEMI) has improved vastly due to reperfusion strategies using thrombolytic agents. Despite wide use of streptokinase (SK) and tenecteplase (TNK) for STEMI treatment in local setting, direct comparison studies between both agents were scarce.

OBJECTIVES: This study aimed to compare the efficacy and safety of SK and TNK among STEMI patients in Hospital Melaka.

METHOD: A retrospective study was conducted among STEMI patients treated with SK and TNK in Hospital Melaka from January 2014 to Jun 2015. SK patients were matched to TNK patients using ‘Propensity Score Matching’ to balance the covariates between both groups. Primary endpoints were ST-segment resolution, prevalence of side effects and all-cause mortality. Results were analysed via SPSS Version 23 and R Statistical Package 3.10 by using Independent t-test, Chi-Square Test and Fisher’s Exact Test.

RESULTS: Among 265 STEMI patients treated with thrombolytic agents, 35 SK patients (mean age 56 ± 10.8 years) were matched to 35 TNK patients (mean age 57 ± 11.5 years). Resolutions of ST-segment elevation were same in both groups (80% SK vs 80% TNK). Common side effects identified were bleeding (20% SK vs 14.3% TNK) and hypotension (17.1% SK vs 5.6% TNK). The prevalence of both side effects in the two groups did not differ significantly (Bleeding, p=0.526; hypotension, p=0.259). Heart failure (2.9% TNK) and bradycardia (5.7% TNK) were observed in TNK patients only. The mortality rate of both groups (17.1% SK vs 25.7% TNK) did not differ significantly (p=0.382).

CONCLUSION: Streptokinase is as effective and safe as tenecteplase in STEMI treatment based on our small study size.

KEYWORDS: clinical pharmacy, Melaka, STEMI, thrombolytic, thrombolytic agents
OUTCOME EVALUATION OF DIPEPTIDYL PEPTIDASE 4 (DPP4) INHIBITOR AND ITS COMBINATION ON GLYCEMIC CONTROL OF TYPE 2 DIABETES MELLITUS PATIENTS AT PUTRAJAYA HOSPITAL

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INTRODUCTION: Dipeptidyl Peptidase 4 Inhibitor (DPP4-I) is a relatively new antidiabetic agent, hence studies on glycemic outcome among Malaysian population is still lacking. Up to date, there is no study conducted in Putrajaya Hospital to examine the outcome of DPP4-I and its combination on glycemic control among Type 2 Diabetes Mellitus (T2DM) patients, response towards DPP4-I and predictors for HbA1c reduction.

OBJECTIVES: To evaluate the glycemic outcome at week 16, 32 and 52; to determine adverse drug reactions (ADR) arising from DPP4-I; and to evaluate predictors for HbA1c reduction at week 52.

METHOD: A retrospective observational study was conducted on 184 T2DM patients that were prescribed with DPP4-I. Paired t-test, ANOVA and linear regression analysis were conducted accordingly.

RESULTS: 39.1% of study subjects managed to attain a HbA1c value ≤7.0% after 52 weeks of therapy with DPP4-I and its combinations. The mean HbA1c reduction was 0.7% compared to baseline. 70.7% were responsive to the DPP4-I treatment. Unresponsive group attained only a 0.2% HbA1c reduction at around week 16 compared to significant HbA1c reduction (0.8-0.9%) attained by responsive group. 2.7% adverse drug reactions related to DPP4-I were reported. Baseline HbA1c values, HbA1c changes at around week 16 and age were found to be the predictors for HbA1c reduction at week 52.

CONCLUSION: The addition of DPP4-I demonstrated moderate glycemic reduction in T2DM patients. Outcome towards DPP4-I treatment at week 52 may be predicted by observing HbA1c changes at around week 16 of the therapy.

KEYWORDS: clinical pharmacy, Putrajaya, DPP4 inhibitor, diabetes mellitus

GREEN BAG MEDICATION REVIEW: IMPROVING ADHERENCE THROUGH PATIENT EMPOWERMENT

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INTRODUCTION: Non-adherence to long-term medication reflects a major flaw in healthcare delivery system worldwide which results in poor clinical outcome and soaring healthcare cost. Several efforts including providing medication bag and conducting Medicines Use Review (MUR) have individually shown improvement in patients’ self-empowerment and medicine-taking behaviour.

OBJECTIVES: This study integrated both ideas to determine if Green Bag Medication Review improves adherence to medication.

METHOD: A prospective, non-comparative community trial involving patients with chronic diseases was conducted from September 2013 till June 2014 across 6 clinics under Gombak District Health Office. Patients with prescriptions containing more than 4 items and validity more than a month were selected via computer generated random sampling. Patients who provided consent for enrolment were given a green bag to store medications and underwent 3 sessions of medication review with a pharmacist on monthly basis to identify and resolve any non-adherence or medication-related issue. Medication reconciliation was carried out with medication review which was conducted as semi-structured interview and counseling based on an adapted MUR form. Adherence level was assessed with 8-items Modified Morisky Adherence Scale (MMAS) during baseline and all interventions, which was later analysed using paired-t test.

RESULTS: Mean MMAS of 301 patients was improved by 12.5%. It was increased from baseline mean±s.d. of 5.9±1.4 (low adherence) to 6.4±1.4 (medium adherence), 6.8±1.3 (medium adherence), and 6.9±1.2 (medium adherence) after 3 continuous interventions. Mean difference between baseline and 3 interventions were 0.5 (95% CI: 0.3 to 0.6, p<0.001), 0.9 (95% CI: 0.7 to 1.0, p<0.001) and 1.0 (95% CI: 0.9 to 1.1, p<0.001). The final intervention yielded an increment in the number of highly adherent patient by 3.8 fold and a reduction in the number of poorly adherent patient by 2.2 fold.

CONCLUSION: Green Bag Medication Review significantly improved adherence among patients with chronic diseases.

KEYWORDS: pharmacy education, Selangor, adherence, green medication bag
OP1-41 (Oral)
PERCEPTION TOWARDS THE ACCEPTABILITY OF HPV VACCINATION AMONG WOMEN AGED 18-45 YEARS OLD IN TELUK INTAN HOSPITAL, PERAK

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INTRODUCTION: Cervical cancer is the second most common female cancer in Malaysia. HPV vaccination has been introduced worldwide to women as preventive measure for cervical cancer. Nevertheless little in public does know its existence and importance.

OBJECTIVES: To determine the factors associated with the acceptability among woman aged 18-45 years old towards HPV vaccination.

METHOD: A cross-sectional study was conducted in Hospital Teluk Intan by using validated questionnaire. Questionnaire was distributed randomly to female aged 18-45 at O&G ward in Hospital Teluk Intan. Respondent’s demographic data, level of knowledge and acceptability of HPV vaccination were assessed. Demographic data, level of knowledge and acceptability towards HPV vaccination was analysed by using descriptive statistics. The association between demographic data and acceptability were analysed using Pearson chi-square test.

RESULTS: A total of 140 female respondents had filled in the questionnaire. There were 83.6% of respondents who had never received HPV vaccine. Among the respondents, 79.3% of the respondents wanted to take HPV vaccination and half of them were willing to pay for it. Majority of the respondents were highly educated; 64.3% studied at college or University level. Out of 140 respondents, 30.7% were healthcare professionals, 27.9% unemployed, 27.1% non-healthcare professionals and 14.3% students. Majority of the respondents (30%) did not accept HPV vaccination due to affordability and side effects of the vaccine. Unawareness of the present of HPV vaccine and belief of not being at risk of infection were significantly associated with acceptability.

CONCLUSION: The respondents’ acceptability is high but level of knowledge on HPV vaccination is moderate. Healthcare teams are encouraged to raise the awareness of HPV vaccination among the public.

KEYWORDS: pharmacy education, Perak, HPV vaccination, acceptability, perception

OP1-42 (Oral)
AN INVESTIGATIONAL STUDY ON SYNTHESIS YIELD OF FDG PUTRA INJECTION IN GMP RADIOPHARMACEUTICAL PREPARATION-CYCLOTRON FACILITY, NATIONAL CANCER INSTITUTE

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INTRODUCTION: Synthesis of FDG Putra Injection involve production of F-18 fluoride from cyclotron where impurities in this solution could not be ignored. Consequently, it will lead to a low synthesis yield (End of Synthesis Yield <40%) of our registered radiopharmaceutical product; FDG Putra Injection or F-18 Fluorodeoxyglucose.

OBJECTIVES: This study aimed to investigate the parameters that may influence synthesis yield of FDG Putra Injection from 2008 to 2015 in GMP Radiopharmaceutical Preparation-Cyclotron Facility, Institut Kanser Negara.

METHOD: Investigated parameters including target pressure, current applied, bombardment time and radioactivity delivered were obtained from each production batch report data and analysed using Statistical Package of Social Science (SPSS).

RESULTS: Based on the standardized Beta Coefficients, the effect of beam width had the highest impact on the synthesis yield (n= 700) over other parameters. Low synthesis yield was due to impurities present in F-18 fluoride ion as a result of cyclotron bombardment process.

CONCLUSION: Amongst parameters that have been investigated, adherence to recommended specification beam width (10-20%) has to be main factor to be looked into when operating a cyclotron system to produce a desired synthesis yield.

KEYWORDS: pharmacy research, Putrajaya, FDG, cyclotron, impurities
THE USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN PAEDIATRIC PATIENTS

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INTRODUCTION: There is no published data on the use of CAM among paediatric patients in Malaysia.

OBJECTIVES: The aim of this study was to investigate the use of CAM among paediatric patients.

METHOD: This was a descriptive, cross-sectional survey involving 400 paediatric patients receiving treatment at inpatient and outpatient clinics in Hospital Sultanah Nora Ismail.

RESULTS: During the study period, 92 patients (23%) used at least one type of CAM with an average 1.4 types of CAM per patient. Patients aged above 4 years old (n=40, 39.2%) had the highest usage of CAM (p<0.05) and parents aged more than 30 years old were more likely to introduce their child to CAM (p<0.05). Dietary and herbal approaches (75.2%) were the most highly used CAM used among the paediatric patients as compared to other CAM modalities. The main reason patients were given CAM by their parents was to enhance overall health or immune system. Most of the parents (n=69, 80.2%) procured their CAM from community pharmacy. Despite this, 87.0% of the parents did not consult physicians or pharmacists before introducing CAM to their children. Furthermore, 62% of the CAM users administered CAM concurrently with their conventional medications and 87.0% of their attending physician were not aware that the patients were using CAM concurrently with their conventional medications.

CONCLUSION: The use of CAM is common in paediatric patients. Physicians and pharmacists attending to paediatric patients should actively review the history of CAM use. Some of the conventional drugs prescribed may have strong drug interaction with the CAM if administered concurrently.

KEYWORDS: pharmacy practice, Johor, complementary therapies, paediatric

CO-MORBID HYPERTENSION, DIABETES MELLITUS OR DYSLIPIDEMIA AMONG PATIENTS PRESCRIBED WITH SECOND GENERATION ANTIPSYCHOTIC: A COMPARISON STUDY BETWEEN ARIPIPRAZOLE, QUETIAPINE AND CLOZAPINE BASED ON PHARMACY PRESCRIPTION DATABASE

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INTRODUCTION: Second generation antipsychotic (SGA) was linked to increased risk of metabolic syndrome. The risk varies between different SGA.

OBJECTIVES: We aimed to study the risk of metabolic syndrome by examining the co-prescription of antihypertensive, antidiabetic and lipid lowering drugs in patients prescribed with either aripiprazole, quetiapine or clozapine.

METHOD: This is a retrospective cohort study based on the prescription records of a teaching hospital. Prescription records between January 1, 2013 and December 31, 2014 for psychiatric unit were extracted. Patients with at least one prescription of any antipsychotic were included. The odds of antihypertensive, antidiabetic and lipid lowering drugs co-prescription in patients with either aripiprazole, quetiapine or clozapine were calculated.

RESULTS: Of the 1742 study subjects, 88 patients were prescribed with aripiprazole, 175 patients with clozapine and 124 patients with quetiapine. Patients prescribed with quetiapine had highest odds co-prescribed with antihypertensive (OR=1.71, 95% CI=1.11, 2.63), antidiabetic drugs (OR=1.81, 95% CI=1.11, 2.95) and lipid lowering drugs (OR=1.94, 95% CI=1.19,3.16). There were higher odds of co-prescription of antihypertensive (OR=1.54, 95% CI=1.05, 2.25), antidiabetic drugs (OR=1.69, 95% CI=1.10,2.59) and lipid lowering drugs (OR=1.90, 95% CI=1.24,2.91) in patients with clozapine. However, there were no increase of odds of co-prescription of the three agents in patients with aripiprazole.

CONCLUSION: We need to monitor the risk of metabolic syndrome in patients treated with SGA. Aripiprazole has lower risk of metabolic syndrome.

KEYWORDS: pharmacy practice, Kuala Lumpur, aripiprazole, antipsychotic, metabolic syndrome
**OP2-3 (Oral)**

**PRE-POST STUDY ON KNOWLEDGE OF TOPICAL CORTICOSTEROIDS AMONG PSORIASIS PATIENTS: EXPERIENCE FROM MELAKA HOSPITAL**

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**INTRODUCTION:** Topical corticosteroids are commonly used in psoriasis patients. The aim of this study was to identify factors affecting the adherence and the impact of educational material on patients’ level of knowledge on topical steroid application.

**OBJECTIVES:** To assess the knowledge and adherence pre- and post-intervention and to identify the common factors which are associated with adherence.

**METHOD:** A pre-and-post study was conducted among psoriasis patients in Hospital Melaka. Patients with at least one topical corticosteroid agent with mild to moderate psoriasis were included. Questionnaires administered by interviewers were used to obtain demographic data and to assess patients’ knowledge and adherence of topical steroids. An educational material was used in parallel to the questionnaire during the first visit. After a month, patients were reassessed with the same questionnaires. Study was conducted starting from November 2015 to January 2016. Data was analysed using SPSS paired t-test.

**RESULTS:** A total of 31 patients participated in this study. Patients’ knowledge improved significantly after the intervention with education material with the mean knowledge score increased from 45.16 to 85.48 (p<0.001). Patients’ knowledge on the method of application had improved tremendously with an increment of 60.6%. Patients’ adherence was found to have improved significantly with the mean MMAS score from 4.26 to 5.65 (p<0.001). Unclear instructions of application, forgetfulness and inadequate supply were found to be major factors affecting adherence.

**CONCLUSION:** The present study indicated that patients’ knowledge is enhanced with guided education material. Clear instructions of topical steroid applications are crucial in improving patients’ adherence.

**KEYWORDS:** pharmacy practice, Melaka, topical steroids, psoriasis, adherence

**OP2-4 (Oral)**

**THE OUTCOMES AND COST-EFFECTIVENESS ANALYSIS OF TYPE II DIABETES MANAGEMENT OF PUBLIC HEALTHCARE FACILITIES IN THE STATE OF KEDAH**

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**INTRODUCTION:** Diabetes mellitus cases continue to rise in Malaysia. With prevalence of 15.2% in 2011, the complexity of treating diabetes with its complication has huge economic impact on government as Malaysia’s healthcare is heavily subsidized. Despite this, data on cost, outcomes and complications of Diabetes Mellitus (DM) care management particularly Kedah are still scarce.

**OBJECTIVES:** We aimed to compare the treatment outcomes and cost of DM management between primary, secondary and tertiary care in MOH healthcare facilities.

**METHOD:** This is a retrospective cohort study involving 390 diabetic patients randomly selected from nine hospitals and fourteen health clinics in Kedah. Consented patients were interviewed for their socio-demographic, compliance level and HRQOL status. Patients’ records were reviewed to collect data on hospital admission, physical examination, laboratory results, diagnostic tests, complications and co-morbidities. The cost data was analysed from provider perspective using activity-based costing. Primary outcome was the achievement of HbA1c control.

**RESULTS:** Secondary care had the highest percentage of HbA1c control (19.6%) followed by primary care (18.7%). Only 7.8% of the patients in tertiary care achieved targeted HbA1c, which was significantly lower (p<0.05), compared to secondary care. Only two factors significantly affected HbA1c level; insulin therapy (p=0.001) and patients’ living status (p=0.016). 45% of patient were on insulin with 24% regularly performed SMBG. 31% of patients highly adhered to their medications. Highest prevalence of comorbidities were hypertension (84%) and dyslipidemia (74%) whereas the most common complication was peripheral neuropathy (30%). Annual DM related management cost per patient for tertiary care was MYR1,638 which was significantly higher (p<0.001) compared to secondary care (MYR744) and primary care (MYR863).

**CONCLUSION:** Secondary care has the highest percentage of HbA1c target achieved with the lowest cost compared to tertiary care (ICER MYR74).

**KEYWORDS:** pharmacy health policies, Kedah, diabetes mellitus, cost analysis
OP2-5 (Oral)
PREVALENCE OF FOOD PRODUCTS ADULTERATED WITH APPETITE SUPPRESSANTS OR MALE SEXUAL PERFORMANCE ENHANCERS AND ITS ASSOCIATION WITH PRICE IN CENTRAL INDUSTRIAL ZONE, MALAYSIA

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INTRODUCTION: There is a growing nationwide trend of food adulterated with phosphodiesterase-5 inhibitors (PDE-5 Inhibitors) or appetite suppressants. In Kuala Lumpur, items confiscated from 2011 to 2013 worth approximately MYR1.5 million were food products containing scheduled poison.

OBJECTIVES: The objectives were to determine the prevalence of selected scheduled poison in food products and to establish an association between price and these products.

METHOD: A cross-sectional study was conducted utilising purposive sampling of which food products with high index of suspicion according to set criteria were sampled. Food products included both food and drinks as defined in Food Act 1983. All samples were obtained from 1 January 2012 to 30 June 2013 at retail outlets in Central Industrial Zone (i.e. Kuala Lumpur, Selangor, Penang, Malacca and Negeri Sembilan). The samples included food products distributed or manufactured in Malaysia. Data was collected using specific forms and samples were categorised according to indication and type. Analysis was done via Microsoft Excel (version 2010) while Chi-square (x²) and Pearson Correlation were performed using SPSS (version 17).

RESULTS: Of 85 food product samples, 31 (36.5%) contained scheduled poison. Four out of 35 samples in the appetite suppressants arm (11.4%) and 27 out of 50 samples in the PDE-5 inhibitors arm (54.0%) were found to contain scheduled poison. It was found that there was a significant positive association (r = 0.336) between price and the presence of scheduled poison (p = 0.002).

CONCLUSION: One third of the sampled food products were found to contain scheduled poison. This study shows that the chance of food products being adulterated with scheduled poison increases with selling price.

KEYWORDS: pharmacy health policies, scheduled poison, adulteration

OP2-6 (Oral)
PHARMACISTS’ BARRIERS AND ATTITUDES TOWARDS RESEARCH IN KOTA KINABALU: A QUALITATIVE STUDY

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INTRODUCTION: Pharmacists play important roles in improving the healthcare system through clinical research. Despite having a large number of pharmacists working in public services in Sabah, it is reported during the National Research and Development Committee Meeting that only 54% of the facilities in Sabah were involved in research in the year 2014.

OBJECTIVES: The objective of this study was to explore the attitudes, perceptions and barriers faced by pharmacists in Kota Kinabalu towards conducting research and to identify potential ways to increase the involvement of pharmacists in research.

METHOD: This was an in-depth face-to-face interview qualitative study. A total of 9 pharmacists from public services in Kota Kinabalu were selected using purposive sampling and were interviewed until saturation of themes was reached. The pharmacists were asked about their attitudes, barriers in conducting research and ideas to overcome these barriers using an interview guide. Interview sessions were audiotaped and notes were taken by the researchers. Thematic analysis of the notes and audiotaped transcripts were conducted by the researchers.

RESULTS: Two themes were identified in pharmacists’ attitudes towards research: perspective and perception of the purpose of research. Some of the interviewees expressed that they were not interested in doing research as they underestimated or undervalued the importance of doing research. Perception, communication, resources and skill and knowledge were found to be the barriers to pharmacists’ participation in research. Ideas were suggested by the interviewees to overcome the barriers to participation.

CONCLUSION: The interviewees were not aware of the importance of participation in research towards improving health care system. Time needed to be involved in research was noted as one of the barriers for all interviewees. Practical strategies were suggested to overcome the barriers and these strategies should be considered when promoting research participation.

KEYWORDS: pharmacy practice, Sabah, research, attitudes, barriers
OP2-7 (Oral)
AN ANTIBIOTIC POINT PREVALENCE EVALUATION IN PERAK SPECIALIST HOSPITALS

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INTRODUCTION: Evidences showed that overall rate of antimicrobial resistance correlates with the use of antimicrobials. In response to the increment of antibiotic utilisation at Perak Specialist Hospitals, an antibiotic point prevalence study was done in order to investigate the antimicrobial prescribing pattern in the state.

OBJECTIVES: The aim of this study was to evaluate antibiotic prescribing pattern in hospitalised patients at five specialist hospitals in Perak.

METHOD: A single-day point prevalence survey was conducted in July 2015. The survey enrolled all hospitalised patients at five specialist hospitals (Raja Permaisuri Bainun Hospital, Taiping Hospital, Seri Manjung Hospital, Teluk Intan Hospital and Slim River Hospital) in Perak and data on patients on antibiotics were collected using a pre-designed form. Difference in proportion was compared using chi-square test. A multivariate logistic regression was used to determine the association between appropriate antibiotic use and demographics variables.

RESULTS: Out of 1758 patients surveyed, 755 (42.9%) patients were on antibiotics. Majority of the patients receiving antibiotics were male (52.7%) and from medical wards (41.7%). Hospital Slim River had the highest number of patients on antibiotic (55.3%). Patients received a total of 1017 antibiotics with most of them receiving single antibiotics (67.1%). Antibiotics were mostly started empirically (84.5%). The most prescribed antibiotic class was cephalosporin (31.4%). A total of 337 (44.6%) patients were identified to be given antibiotic inappropriately. The most common cause of inappropriate antibiotic prescribing among these patients was improper choice of antibiotics.

CONCLUSION: Around half of the patients admitted to specialist hospitals in Perak are on antibiotics. The appropriateness of antibiotic utilisation was significantly different between the wards.

KEYWORDS: pharmacy practice, Perak, antibiotic, point prevalence

OP2-8 (Oral)
A PILOT STUDY: EXPERIENCE, KNOWLEDGE AND PERCEPTION OF PATIENTS TOWARDS FREQUENT BRAND SWITCHING OF GENERIC MEDICINES

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INTRODUCTION: There has been frequent brand switching of generic medicines in Hospital Pulau Pinang. This may cause some confusion among patients.

OBJECTIVES: To study the experience, knowledge and perception of patients towards frequent brand switching of generic medicines.

METHOD: A cross-sectional pilot study using convenience sampling was conducted at the main outpatient pharmacy in Hospital Pulau Pinang in October 2014. One hundred forty patients were recruited in this study. All p value <0.05 was considered statistically significant.

RESULTS: Out of 140 patients, 93 patients experienced receiving medicines with different brands. 64.5% patients identified medicines by shape, size and colour. After brand switching, 14.9% patients experienced missed dose, 11.3% stopped their medicines and 5.7% doubled their doses. In terms of patients’ knowledge, 3.6% patients knew that same medicine might be available in different brands but 73.4% patients were unaware that different brands might have different inactive substances. In terms of perception, 54.4% of patients felt that it was easier to remember brand name whereas 34.8% thought that there were differences in effectiveness between brands. Majority (63.6%) of patients preferred not to have switch of brands for their medicines. Patients with lower education level significantly identified their medicines by shape, size or color, compared to those with higher education level.

CONCLUSION: This pilot study revealed that frequent brand switching of generic medicines led to missed dose, omission and double dosing of medicines.

KEYWORDS: pharmacy practice, Penang, generic drugs, brand switching
OP2-9 (Oral)
AN EVALUATION OF EFFECTIVENESS AND SAFETY OF CURRENT INSULIN INFUSION PROTOCOL IN INTENSIVE CARE UNIT: A PROSPECTIVE COHORT STUDY

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INTRODUCTION: Poor glycaemic control is associated with poor outcomes in critically ill patients. Various insulin protocols have been suggested, however implementation can be challenging and clinical outcomes have been inconsistent.

OBJECTIVES: To evaluate effectiveness and safety of current insulin infusion protocol in critically ill patients targeting blood glucose levels of 6.2-10 mmol/L and to identify factors associated with degree of glucose control.

METHOD: A prospective cohort study was conducted in an adult general intensive care unit. All adult patients who received insulin infusion managed at physicians’ discretion were recruited over a 24-month period (April 2013-2015) and followed up throughout ICU stays. Effectiveness was assessed by percentage of time spent within predefined glycaemic range and safety was measured by episode of hypoglycaemia. Linear regression was used to determine factors affecting degree of glucose control.

RESULTS: 110 critically ill adult patients with 7841 glucose measurements were recruited. The mean blood glucose measurement was 83 per patient. The mean percentage of time spent in the 0-2.2, 2.3-4.3, 4.4-6.1, 6.2-10.0 and >10.0 mmol/L range was 0.04% (95% CI: 0.03-0.11), 0.81% (95% CI: 0.46-1.16), 7.25% (95% CI: 5.66-8.83), 55.83% (95%CI: 52.15-59.52) and 36.9% (95% CI: 32.24-41.66), respectively. Hypoglycaemia (<4.0 mmol/L) was detected 136 times (1.7%) in 48 patients (43%) with a maximum of 15 hypoglycaemic events in one patient. The lowest hypoglycaemia value detected was 1.5 mmol/L. In the final regression model, high HbA1C value and concurrent steroid therapy are associated with lower mean percentage of time within desired range (6.2-10.0 mmol/L).

CONCLUSION: The effectiveness of current insulin infusion protocol in maintaining blood glucose within 6.2-10.0 mmol/L provides an acceptable performance at 55.89% of the time. Though half (43%) of the patients experienced hypoglycaemia, number of hypoglycaemia events are low (136/7841, 1.7%). Patients with high HbA1C value and concurrent steroid therapy are associated with poor glucose control.

KEYWORDS: clinical pharmacy, Sabah, insulin infusion protocol, Intensive Care Unit

OP2-10 (Oral)
HYPERPHOSPHATEMIA AMONG HEMODIALYSIS PATIENTS ON CALCIUM CARBONATE IN SIBU, SARAWAK: PATIENTS’ CHARACTERISTICS, KNOWLEDGE AND ADHERENCE TO PHOSPHATE BINDER

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INTRODUCTION: Hyperphosphatemia is common among hemodialysis patients. Prolonged hyperphosphatemia is associated with higher risk of mineral bone disorder, cardiovascular disease and mortality. Other than dialysis and phosphate diet restriction, phosphate binder such as calcium carbonate is used to control serum phosphate level. However, high non-adherence rate is reported among phosphate binders users.

OBJECTIVES: The study aimed to determine the correlation between patients’ knowledge, adherence to calcium carbonate and phosphate level.

METHOD: This cross-sectional study, which involved face-to-face interview with a total of 146 regular hemodialysis patients from government, non-government organization and private hemodialysis centers in Sibu was conducted by using two validated questionnaires from 24/11 to 5/12/2014. Phosphate level, knowledge score and adherence to phosphate binder and phosphate level were examined in this study.

RESULTS: The prevalence of hyperphosphatemia among hemodialysis patients on calcium carbonate in Sibu, Sarawak was 43.9% with non-adherence rate of 67.1%. Only 2.7% of them had scored 100 points in calcium knowledge in terms of indication, proper ways of ingestion, interaction with hematinics and management of missed dose. Adherence to phosphate binder and phosphate level were not significantly affected by knowledge score (X² = 5.377, p = 0.251). However, phosphate level was significant higher among patients with low adherence (1.92 ± 0.58mmol/L) than those with high adherence (1.38±0.45mmol/L) (F = 16.34, p = 0.001). Negative correlation was found between Morisky scores and serum phosphate level among the studied hemodialysis patients (r = -0.443). Sociodemographic and disease background did not affect hyperphosphatemia significantly.

CONCLUSION: Hyperphosphatemia among hemodialysis patients may correlate with low adherence to calcium carbonate but knowledge of calcium carbonate does not affect adherence and phosphate level.

KEYWORDS: clinical pharmacy, Sarawak, hyperphosphatemia, calcium carbonate, haemodialysis patients
OP2-11 (Oral)
WILLINGNESS TO PAY FOR PHARMACIST-PROVIDED DISPENSING SERVICES IN SABAH, MALAYSIA

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INTRODUCTION: Pharmacists play an important role in healthcare delivery. Over the years, their role had shifted from product-oriented to patient-oriented. However, pharmacists in Malaysia do not charge customers dispensing fee due to the non-separated prescribing/dispensing practice and limited roles of community pharmacists in Malaysia.

OBJECTIVES: This study aimed to assess the willingness to pay (WTP) for pharmacist-provided dispensing services among the public in the state of Sabah, Malaysia.

METHOD: This was a questionnaire-based cross-sectional study conducted from September 2014 to June 2015 in three major cities in Sabah, Malaysia, namely Kota Kinabalu, Sandakan and Tawau. Respondents were conveniently selected from three strata, namely public facilities, community setting and general public. They were presented with a description of the difference in prescribing and dispensing activities, pharmacists’ roles in dispensing service, the risk of medication errors in prescriptions and its consequences, the involvement of pharmacists’ interventions to reduce the risk of medication errors, and a hypothetical scenario that dispensing separation had been implemented in community pharmacy setting in Malaysia. The contingent valuation interview was then conducted to assess their WTP.

RESULTS: A total of 647 respondents were interviewed. 358 of the respondents (55.3\%) were willing to pay for pharmacist-provided dispensing services. The minimum and maximum WTP amounts were RM1.00 and RM100.00, respectively, with a median (IQR) amount of RM5.00 (IQR RM5.00).

CONCLUSION: More than half of the respondents valued pharmacist-provided dispensing services and were willing to pay RM5.00 for the services. However, the impact of public understanding of pharmacist-provided dispensing services on WTP and its amount were not assessed in this study. Nevertheless, providing education to the public regarding the role of pharmacists in dispensing services is important in order to improve the public acceptance of such practice which will be implemented in the near future.

KEYWORDS: pharmacy health policies, Sabah, willingness to pay, pharmacist-provided dispensing services

OP2-12 (Oral)
EFFECTS OF PSYCHOSOCIAL INTERVENTION ON QUALITY OF LIFE AMONG PATIENTS RECEIVING METHADONE THERAPY IN HULU TERENGGANU HOSPITAL

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INTRODUCTION: Specifically, psychological intervention was defined as non-pharmacological intervention carried out in grouping emphasizing on four domains of quality of life; physical, psychological, social and environment. It is a continuation of previous study entitled “Quality Of Life in Patient Receiving Methadone Therapy in Hospital Hulu Terengganu” by Lyam et al. (2013).

OBJECTIVES: This study aimed to 1) assess the impact of implementation of psychosocial intervention on quality of life of patients and 2) evaluate the effect of psychosocial intervention on quality of life of four domains; physical, psychological, social and environment.

METHOD: Respondents from Hospital Hulu Terengganu must be involved in all psychosocial intervention; “Kursus Ibadah” and psychosocial counselling conducted. The respondents then answered WHOQOL-BREF after 1 month of intervention (include 4 domains; 26 items; Likert-type responses 1-5; higher score – better QoL outcome). Data was analysed via SPSS 19; employing non-parametric tests.

RESULTS: A total of 51 patients were included in this study. Each domain showed an increment in the mean subsequent to intervention. Social domain showed the highest increment of 12.26 (pre-intervention = 58.17 & post-intervention = 70.43) followed by psychological domain with an increment of 8.32 (pre-intervention = 62.27 & post-intervention = 70.59), environment with an increment of 7.42 (pre-intervention = 60.05 & post-intervention = 67.47) and physical with an increment of 5.5 (pre-intervention = 63.90 & post-intervention = 69.40). These increments were statistically significant with p= 0.000 for social domain, 0.004 for psychological domain, 0.001 for environment domain and 0.023 for physical domain.

CONCLUSION: The psychosocial intervention in addition to MMT programme implemented in the rural Terengganu population is considered successful and could generate long term positive impacts on QOL.

KEYWORDS: pharmacy practice, Terengganu, quality of life, methadone maintenance therapy, psychosocial intervention
OP2-13 (Oral)
BARRIERS TO MEDICATION ERROR REPORTING AMONG HEALTHCARE PROFESSIONALS IN SULTANAH FATIMAH HOSPITAL, MUAR

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INTRODUCTION: Medication error reporting is an important measure to prevent medication error incidents in a healthcare system and can serve as an important tool for improving patient safety.

OBJECTIVES: This study aimed to identify the barriers to medication error reporting among different healthcare professionals in HPSF, including doctors, pharmacists, nurses, medical assistants and pharmacist assistants.

METHOD: This research project was a cross-sectional study using questionnaires designed specifically to assess the subject’s barriers to medication error reporting. The barriers were grouped into “fear of the consequences of medication error reporting”, “managerial factors” and “process of reporting”. A Likert scale ranging from 1 (unlikely) to 5 (likely) was used to describe the barriers to reporting a medication error. The survey was analysed by using Statistical Package for Social Science (SPSS) software. Kruskal-Wallis test was used to analyse the relationship between occupation and barriers, job experience and barriers, training attended and barriers, and also training attended and knowledge on medication error reporting form.

RESULTS: The overall response rate was 84% (100% for pharmacists, 94% for nurses, 90.9% for assistant pharmacists, 73.5% for doctors and 63.4% for medical assistants). Majority of the respondents felt that “managerial factors” were likely to be the barriers that restrict them from reporting a medication error. “Fear of the consequences of reporting” and “managerial factor” showed significant difference in different occupation and job experience. “Process of reporting” showed no significant difference with all factors. Test on “training attended” versus “knowledge on medication error reporting form” showed no significant difference.

CONCLUSION: The study results showed that managerial factors and fear of process of reporting had the major role in the refusal of reporting medication errors. Different approaches therefore should be considered in designing a strategic and effective system of medication error reporting which in turn improves patient safety.

KEYWORDS: pharmacy practice, Johor, medication error reporting, barriers

OP2-14 (Oral)
V ANCOMYCIN INITIAL DOSING AMONG ADULT DIALYSIS (VIDAD) PATIENTS IN A TERTIARY CARE HOSPITAL

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INTRODUCTION: Serum vancomycin concentrations (SVC) varied significantly among chronic dialysis patients who received a standard 1000mg regardless of body weight and non-standardised time-to-first-sampling (TTFS).

OBJECTIVES: To identify the weight-based initial dose of vancomycin prescribed. To study the TTFS following initial dose of vancomycin. To assess the SVC at the first sampling following the initial dose. To identify factors affecting SVC at first sampling.

METHOD: Retrospective observational study was conducted at nephrology and general medical wards in Hospital Kuala Lumpur. Data were collected using convenient sampling method from September 2015 to February 2016. Subjects were end-stage renal disease (ESRD) patients on dialysis, aged 18 years and above who received intravenous vancomycin as empirical or definitive treatment. Multiple linear regression was conducted to identify factors affecting SVC.

RESULTS: Forty nine subjects fulfilled the criteria and the mean initial dose of vancomycin prescribed was 20.2±5.8 mg/kg. The mean TTFS was 26.2±12.8 hours. The mean SVC attained from the first sampling irrespective of TTFS was 9.7±4.91µmol/L. Eighty percent of subjects with TTFS of 24-48 hours (n=25) and 45.8% of TTFS within 24 hours(n=24) failed to achieve SVC of 10.4µmol/L and above. There was a significant linear relationship between initial dose (mg/kg), TTFS (hours) and the resulting SVC (µmol/L) achieved. An increase in initial dose by 1mg/kg results in 0.418µmol/L (95% CI, 0.208, 0.629, p<0.001) increase of SVC. The SVC dropped by 0.135µmol/L (95% CI, -0.230, -0.040, p=0.006) when TTFS was delayed by an hour. The final model equation was obtained to be: SVC (µmol/L) = [0.418(initial dose in mg/kg) – 0.135(TTFS)] + 4.843

CONCLUSION: An initial dose of 1000mg is not suitable for all dialysis patients leading to variable SVCs. Weight-based initial dose and TTFS are important determinants of SVCs in dialysis patients.

KEYWORDS: clinical pharmacy, Kuala Lumpur, vancomycin, dosing, renal dialysis
OP2-15 (Oral)
PRESCRIPTION PATTERN AND PREVALENCE OF POTENTIALLY INAPPROPRIATE PRESCRIBING (PIP) FOR GERIATRIC PATIENTS IN SPECIALIST CLINICS, SULTAN HAJI AHMAD SHAH HOSPITAL

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INTRODUCTION: The life expectancy is becoming longer and the geriatric population in Malaysia is expected to increase to 9.5% in the year 2020. Geriatric population have more co-morbidities and are prescribed with more medications, making appropriate prescribing a challenging task to healthcare practitioners. Potentially inappropriate prescribing (PIP) and potential prescribing omissions (PPOs) can be detected through the use of screening tools.

OBJECTIVES: To determine the prescribing pattern for geriatric patients at specialist clinics, HoSHAS, and to describe the prevalence of PIP and PPOs based on the START (Screening Tool to Alert doctors to Right Treatment, 2007) and STOPP (Screening Tool of Older Persons’ potentially inappropriate Prescriptions, 2008) criteria.

METHOD: This was a cross-sectional study. Prescriptions for patients aged 65 and above who attended the Specialist Clinics in HoSHAS and received their last supply of medication in December 2013 were collected and screened through using the START/STOPP criteria.

RESULTS: Out of the 209 prescriptions screened, 27.1% has ophthalmic diagnosis, followed by cardiovascular (25.8%). Averages of 3.45±2.393 medications were prescribed per prescription, with 26.46% having five medications or more. Overall, 5.15% of the prescriptions had at least one PIP based on both STOPP/START criteria. The positive correlation between total number of medications per prescription and total number of PIP was statistically significant (rs(8) = .206, p = .000).

CONCLUSION: Prescriptions containing ophthalmic and cardiovascular medications were the most common prescriptions among geriatric patients in HoSHAS. PIP is more likely to occur when more medications are prescribed and START/STOPP criteria can be used as a tool of detection.

KEYWORDS: clinical pharmacy, Pahang, inappropriate prescribing, geriatrics

OP2-16 (Oral)
THE COMPLIANCE AND PROBLEMS ENCOUNTERED IN TAKING EYE MEDICATIONS AMONG GLAUCOMA PATIENTS IN REGIONAL-REFERRAL HOSPITAL

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INTRODUCTION: Estimated eye drops compliance in glaucoma patients ranges variably from 5% to 80%. Understanding and improvement of compliance can assist in delivering better outcome.

OBJECTIVES: The aim of the study was to explore the compliance and to identify the problems encountered during eye drops administration among glaucoma patients.

METHOD: This was a one year cross-sectional study conducted at an outpatient setting. Patients who received glaucoma eye drops were conveniently sampled and interviewed using a validated Brief Medication Questionnaire. Compliance scores ranged from 0 to 5, with scores of 1 and below indicated compliance. Problems in applying eye drops were graded as ‘hard’ and ‘not hard’. Data collected was analysed using SPSS version 20.

RESULTS: Of 100 subjects interviewed, 69 of them were Chinese and 56 were males; mean age was 67.6 (SD+10.4). A majority of the subjects (44%) were on two types of glaucoma medications. Overall compliance rate was 75%, mean score was 0.86 (SD+1.09). There was no significant association between compliance with socio-demographic characteristics. The most frequent problems reported were ‘eye drops fall on cheeks’ (45%), ‘too many drops coming out’ (42%), and ‘getting the eye medications refilled in time’ (25%). Patients prescribed with 4 types or more glaucoma eye drops were 7 times more likely being non-compliant (OR: 7.56; 95%CI: 1.316-43.370, p=0.023). Multivariate logistic regression analysis confirmed significant effects of ‘difficulty in remembering’ (OR: 31.02; 95% CI: 5.28-182.13, p=0.001) and ‘reading labels & identifying the bottles’ (OR: 3.59; 95%CI: 1.00-12.84, p=0.05) in affecting compliance.

CONCLUSION: Majority of the patients were found to be compliant. Compliance can be improved by having complete and effective labelling, provision of special aids for ease of drop applications and medication calendar.

KEYWORDS: pharmacy practice, compliance, eye drops, glaucoma
OP2-17 (Oral)
FACTORS AFFECTING THE OUTCOME OF METHADONE MAINTENANCE THERAPY IN ZONE KEPONG

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INTRODUCTION: In Malaysia, Methadone Maintenance Therapy (MMT) was started since 2005 as one of the “Harm Reduction” programme which aim to reduce blood-borne infection from needle sharing among opioid abusers. However, more than half of the MMT patients in Kepong were still having positive urine test in 2015.

OBJECTIVES: The objective was to identify the factors affecting the outcome of methadone maintenance therapy in Zone Kepong.

METHOD: A retrospective, observational study based on records of MMT patients from two methadone clinics in Kepong was conducted. Patients who fulfilled the study criteria were included. Demographic data, history of addiction, methadone treatment details and urine test results throughout a one-year period of 2014 were obtained. Statistical analysis was conducted to analyse the association between various factors and good treatment outcome which was defined as less than 20% of positive urine samples.

RESULTS: A total of 154 patients were reviewed, 48.7% of them had achieved good treatment outcome. Factors identified to affect treatment outcome consisted of methadone dosage, take-away privilege, duration of addiction and frequency of doctor’s appointment. No significant association was found between outcome and demographic data (age, gender, race), age at onset of addiction, types of illicit drugs and duration of treatment. Patients with methadone dosage of 40-80 mg/day had poorer outcome (odds ratio [OR]=3.86; CI=0.07,0.9, p=0.029) compared to those with doses less than 40 mg/day. Patient who were allowed take-away doses (unsupervised administration) had significantly better outcome (OR=14.02; CI=5.9, 33.3, p<0.001). While odds of better outcome was higher with longer duration of addiction (OR=1.04; CI=1.01, 1.08, p=0.029).

CONCLUSION: This study identified that take-away privilege, lower methadone doses and increase in duration of addiction were associated with better outcome of methadone maintenance therapy.

KEYWORDS: pharmacy practice, Kuala Lumpur, methadone maintenance therapy, treatment outcome

OP2-18 (Oral)
CLOSED-SYSTEM TRANSFER DEVICE FOR ANTINEOPLASTIC DRUG PREPARATION IN THE SULTANAH BAIHYAH HOSPITAL, ALOR SETAR: IS COST SAVING POSSIBLE?

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INTRODUCTION: Besides reducing the risk of occupational exposure to cytotoxic hazards, the PhaSeal® closed-system transfer device (CSTD) has been shown to save costs by extending beyond-use dates (BUDs) of opened vials of antineoplastic drugs for up to seven days.

OBJECTIVES: To evaluate the total material cost incurred by its use in a Malaysian government-funded hospital.

METHOD: A list of vial stability of 29 antineoplastic drugs commonly used in the Sultanah Bahiyah Hospital, Alor Setar, was compiled. The amount of materials used, including drugs, infusion bottles, the PhaSeal® CSTD and other consumables, was recorded on a daily basis from 1st of October to 31st of December 2015. Calculation of total cost was based on the actual acquisition costs, and it was then compared with that of a hypothetical scenario, in which conventional syringe-needle sets were used to compound the same amount of preparations.

RESULTS: The use of the PhaSeal® CSTD incurred a total drug preparation cost of MYR 383,634.52 (US$ 92,072.28) over the three-month study period, representing an average of MYR 170.50 (US$ 40.92) per preparation, and an estimated annual cost of MYR 1,534,538.08 (US$ 368,289.14). Compared with conventional syringe-needle approach, it is estimated to lead to an additional spending of MYR 148,627.68 (US$ 35,670.64) yearly. Preparation of three brand-name drugs (bortezomib, pemetrexed and liposomal doxorubicin) made up more than half of the total cost, indicating that cost saving by reducing drug wastage using the PhaSeal® CSTD is potentially realisable if these drugs are more frequently prescribed.

CONCLUSION: As opposed to previous studies, cost saving by using the PhaSeal® CSTD was not observed, although there was a noticeable reduction of drug wastage achieved by extending BUDs of unfinished vials. Future studies should further assess the possibility of cost saving, especially in healthcare settings where high-cost antineoplastic drugs are commonly used.

KEYWORDS: pharmacy health policies, Kedah, antineoplastic agents, closed-system transfer device, cost savings
OP2-19 (Oral)
IMPACT OF CYP2B6 POLYMORPHISM, CLINICAL FACTORS AND METHADONE ON NEVIRAPINE CONCENTRATIONS IN HIV PATIENTS

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INTRODUCTION: Comprehensive information on the effects of drug metabolizing enzyme cytochrome P450 2B6 (CYP2B6) polymorphisms, clinical factors, and methadone interaction on nevirapine concentrations in HIV patients is unavailable.

OBJECTIVES: This study was conducted to explore the possible association of CYP2B6 polymorphisms, clinical factors, and methadone with nevirapine plasma concentrations amongst Malaysian HIV patients.

METHOD: In total, 112 patients treated with 200 mg twice daily nevirapine-based antiretroviral therapy, 17 of whom received methadone were included in the study. Blood samples were drawn at pre-dose, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0 and 8.0 hours after nevirapine morning dose. Nevirapine plasma concentrations were determined by high performance liquid chromatography with UV detector. The pharmacokinetic parameters of nevirapine were modelled using non-parametric pharmacokinetics analysis with Pmetrics software. The minimum (Cmin) and the maximum (Cmax) plasma concentration of nevirapine were obtained from visual inspection of the concentration-time curves. Three single nucleotide polymorphisms (SNPs) within CYP2B6 were genotyped.

RESULTS: Allele frequency of CYP2B6 *2, *4, *6 and *9 in the study were 4.0%, 14.3%, 27.2% and 6.3% respectively. When compared to CYP2B6*1/*1, elevated Nevirapine Cmax was found to be associated with CYP2B6*1/*2 (p= 0.013), CYP2B6*6/*6 (p=0.033) and CYP2B6*6/*9 (p=0.016). Higher Cmin was also observed in the genotypes but significant difference observed only with CYP2B6*6/*9 (p=0.021). There was significant linear relationship between liver function (ALT, ALP and AST levels) and Nevirapine concentrations (p<0.05). Nevirapine clearance was increased in patients concomitantly administered with Methadone (p=0.046). As shown by multivariate analysis, variability in Nevirapine concentrations was significantly associated with CYP2B6 polymorphism, liver function and methadone intake.

CONCLUSION: The variability in the nevirapine exposure is associated with genetic and non-genetic factors. Results of this study suggest that knowledge of the CYP2B6 polymorphism is useful in identifying HIV-infected patients at risk for higher Nevirapine concentrations.

KEYWORDS: pharmacy research, HIV, nevirapine, CYP2B6

OP2-20 (Oral)
EVALUATION OF ADHERENCE AMONG ACUTE CORONARY SYNDROME (ACS) PATIENTS AND ASSESSMENT OF KNOWLEDGE AND USE OF SUBLINGUAL GLYCERYL TRINITRATE (GTN) IN MELAKA HOSPITAL

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INTRODUCTION: Adherence to recommended medications for the secondary prevention of ACS is crucial to reduce subsequent disease-related events. It is also essential to have a good knowledge of S/L GTN as it is the standard treatment for angina pain control.

OBJECTIVES: To determine medication adherence, knowledge and use of sublingual GTN therapy among ACS patients admitted to medical wards in Hospital Melaka.

METHOD: This was a cross-sectional survey, using validated 8 item, Morisky Medication Adherence Scale (MMAS-8) and knowledge and use of sublingual GTN questionnaire. The study involved old ACS patients receiving sublingual GTN warded in medical wards Hospital Melaka. Eight items were used to calculate each subject’s medication adherence, knowledge score of S/L GTN and six items were used to calculate score in the use of S/L GTN. PASW version 18 was used for data analysis.

RESULTS: Of the 30 patients, 53% reported high adherence to their medications, all of them knew the indication of sublingual GTN, however only 60% of them knew the mechanism of action of GTN. 93.3% knew the proper storage of the tablets. 5 patients (16.7%) did not know the maximum number of tablets that could be taken during each angina episode. 36.7% of patients were not aware of the need to replace S/L GTN every 8 weeks after opening. Majority (63.3%) of the patients demonstrated lack of knowledge with regards to the use of sublingual GTN as prevention of chest pain. 67% of patients showed poor score in the use of S/L GTN therapy. And most patients (56.6%) did not keep their S/L GTN away from body heat.

CONCLUSION: Majority of patients have high adherence to their medication. There were only 30% of patients with high knowledge scores, and only 33% of patients were reported to high score in the use of S/L GTN.

KEYWORDS: clinical pharmacy, Melaka, acute coronary syndrome, morisky medication adherence scale, sublingual glyceryl trinitrate (GTN)
OP2-21 (Oral) 
ASSESSMENT OF PATIENTS’ ADHERENCE TO MEDICATION REFILL THROUGH MEDICATION APPOINTMENT CARD

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INTRODUCTION: A customer satisfaction survey showed that not all patients were satisfied with the current waiting time. Therefore, a medication refill method called the ‘Appointment Card System’ was introduced in our setting since 2013. However, we found high percentage of defaulters in this system.

OBJECTIVES: To assess patients’ adherence to medication refill through Appointment Card System and factors affecting their non-adherence. We also intend to evaluate the association between patients’ medication refill adherence and their occupations and transportation methods to our healthcare settings.

METHOD: This multi-centered cross sectional study was conducted in 4 health clinics under Pejabat Kesihatan Daerah Seberang Perai Selatan. Eligible patients were registered from 1st October to 31st December 2013. The prescriptions with a minimum of 2 months duration and consisted of five or more items with a minimum of two recorded items were included in the study. The details of patient’s next visit were recorded along with factors contributing to non-adherence in the data collection form. Descriptive analysis was used to illustrate socio-demographic data and Fisher’s exact test used for association. p<0.05 was considered statistically significant.

RESULTS: Out of 63 respondents, 43% patients were non-adherent to their medication refill through Appointment Card System. Contributory factors identified were ‘patient still having medication balance at home (29.6%)’, ‘busy (22.2%)’, ‘forgetfulness (22.2%)’ and ‘transportation problem (26%)’. We found only transportation method had significant association with their medication refill adherence (p=0.0195), in which patients who came with own transport had higher adherence to medication refill (58.7%).

CONCLUSION: Patients’ transportation problem remains one of the most difficult issues to tackle. Adaptation of newer approach through “Ubat Melalui Pos” is the next step in our health clinics to improve patients’ refill medication adherence.

KEYWORDS: pharmacy practice, Seberang Perai, adherence, medication appointment card, medication refill

OP2-22 (Oral) 
SEIZURE CONTROL AMONG EPILEPSY PATIENTS THROUGH EPILEPSY REVIEW SERVICE IN PRIMARY CARE SETTING

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INTRODUCTION: Epilepsy is a debilitating disease affecting more than 200,000 people in Malaysia. A pilot study conducted in our setting revealed that only 9.6% of epilepsy patients had their seizure well-controlled. Epilepsy Review Service (ERS) is a pharmacist-initiated effort in collaboration with other healthcare professionals to improve health outcomes among epilepsy patients. ERS consists of restructured workflow of patient care, newly implemented Seizure Diary, Therapeutic Drug Monitoring (TDM) Guide and Epilepsy Counselling Guide.

OBJECTIVES: The primary objective of the study was to determine the percentage of patients that had improvement in seizure control after implementing ERS. Specific objective was to identify areas for improvement to ensure long term and community focused approach to manage epilepsy patients in primary care settings.

METHOD: A cross-sectional study of 156 patients from three clinics within Klang district was conducted from January 2014 to May 2015. The retrieved data was in the form of a self-constructed data collection form, medical records and patient self-recorded seizure frequency before and after the interventions.

RESULTS: Seizure control improvement among epilepsy patients increased from a baseline of 9.6% to 37.8% at 6 months and 52.6% at 12 months. The mean monthly seizure frequency dropped from 1.95 (SD, 2.04) or median of 1.0 (range, 0-10) at the baseline to 1.91 (SD, 2.02) or median 1.0 (range, 0-7) at 6 months and 0.94 (SD, 1.30) or median 1.0 (range 0-7) at 12 months. Before implementation of ERS, there were delayed completion of TDM cases (40.6%), lack of counselling related to epilepsy issues (21.8%), lack of medication side effects (5.1%) and drug interactions (20.5%) reviewed. Post-intervention showed increment in the completion of TDM cases within 72 hours (84.1%), counselling done (89.3%), medication side effects (77.9%) and drug interactions (82.1%) reviewed.

CONCLUSION: Implementation of ERS improved epilepsy patient care and monitoring practice provided by pharmacists in primary care setting.

KEYWORDS: clinical pharmacy, Klang, seizure, epilepsy review service
OP2-23 (Oral)
IMPACT OF SPECIALISED COUNSELLING BY PHARMACISTS IN PSORIASIS MANAGEMENT

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INTRODUCTION: Psoriasis treatment is complex, and the treatment success depends largely on the patients’ capacity to manage their disease and adherence to the prescribed drug regimen. Literatures showed that pharmacists’ involvement is minimal in this area largely due to lack of knowledge.

OBJECTIVES: This study aimed to investigate impact of psoriasis education on pharmacists and outcome of specialised pharmacist counselling on psoriasis patients.

METHOD: This is a quasi-experimental study involving psoriasis patients on topical treatment with follow-ups at skin clinic and pharmacists working at Pharmacy Department HSB. Knowledge was assessed among 50 pharmacists before and one month after attending a seminar on psoriasis therapy. Meanwhile, selected psoriasis patients were assessed for knowledge, medication compliance, and health-related quality of life (HQL) before and one month after specialised counselling by trained pharmacists.

RESULTS: Knowledge of pharmacist improved significantly after the seminar (p<0.0001). As for patients’ knowledge, compliance and HQL, there was a significant improvement post specialised counselling (p <0.0001).

CONCLUSION: The data proved that psoriasis education significantly improved pharmacist’s knowledge in this area, and there was a significant impact of pharmacist involvement in management of psoriasis disease. As such, pharmacists, who are responsible for dispensing topical as well as systemic medications to psoriasis patients, can be trained further, and should be actively involved in educating psoriasis patients alongside other health care providers.

KEYWORDS: pharmacy practice, psoriasis, counselling, quality of life

OP2-24 (Oral)
PERCEPTIONS OF TYPE 2 DIABETES MELLITUS PATIENTS TOWARDS INSULIN THERAPY IN DISTRICT SPECIALIST HOSPITAL

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INTRODUCTION: Diabetes mellitus is a complex, chronic illness that is growing predominantly worldwide. Insulin therapy is warranted in Type 2 Diabetes Mellitus (T2DM) patients to achieve good glycaemic control and prevent diabetes-related complications.

OBJECTIVES: This study aimed to determine the willingness of Hospital Seri Manjung patients to accept insulin therapy if prescribed, patients’ perceptions and significant predictors of patients’ willingness.

METHOD: This cross-sectional study (July-October 2014) was conducted among T2DM patients aged 18 years and above who were on at least 1 oral anti-diabetic agent and insulin naïve. Dementia, cognitive impairment and psychiatric patients were excluded. Patient demographic, patients’ willingness to accept insulin therapy and their perceptions were captured by adopting a validated self-administered/assisted questionnaire and presented as descriptive statistics. Significant predictors of patients’ willingness to accept insulin therapy were analysed by Multiple Logistic Regression.

RESULTS: A total of 182 out of 285 patients participated would resist if insulin was initiated. There were 6 major barriers to insulin usage identified in univariate analysis. After adjusting all factors, only 2 barriers were found to be significant. Patients who felt that injecting insulin would be painful were 2.14 times less willing to accept insulin if prescribed (95% CI: 1.29-3.56, p=0.003). Patients unconfident in managing insulin therapy were 1.97 times less willing to accept insulin (95% CI: 1.18-3.28, p= 0.009).

CONCLUSION: Refusal rate of insulin therapy if prescribed was 63.9%. Patients were unwilling to accept therapy due to several misconceptions. Patients who perceived that insulin injection was painful and were unconfident in managing insulin therapy were approximately twice less willing to accept insulin therapy.

KEYWORDS: Pharmacy Practice, perceptions, insulin, diabetes
OP2-25 (Oral)

EFFECT OF AN EDUCATION PROGRAMME ON ATTITUDE, KNOWLEDGE, AWARENESS AND COPING MECHANISM IN EPILEPSY (EPACE)

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INTRODUCTION: Epilepsy has not been adequately addressed as a public health concern. This is often attributed by its complex disease process, social stigma plus meagre knowledge level. Knowledge is essential because patients with limited knowledge often exhibit increased risks of complications of seizures. Attitude, knowledge and awareness (AKA) alone were shown in several studies to be inadequate to deal with epilepsy. In these scenarios, coping strategies were shown to go hand in hand with AKA programme to influence patients’ quality of life and psychosocial adjustment.

OBJECTIVES: To evaluate the effect of an education programme on AKA and coping mechanism in epilepsy.

METHOD: This was a prospective, pre/post experimental study conducted among adult patients with epilepsy in outpatient pharmacy setting using convenience sampling. All participants received an education programme lasting around 30 minutes using a validated counselling material and were asked to evaluate their satisfaction towards the education programme. Participants were required to complete a validated modified Malay AKA Epilepsy questionnaire in 0, 1, 3 and 6 months after the education programme and Malay Brief COPE-27 in 0 and 1 month after the programme.

RESULTS: 22 participants were recruited. Total AKA score of participants showed a significant increase (Mean score difference=16.3, p=0.021) at 6 months post-intervention. This was mainly contributed by knowledge (Mean score difference=8.9, p=0.009) and attitude (Mean score difference=5.6, p=0.040). Religion was the most preferred coping mechanism (82.5%), followed by instrumental support, emotional support, active coping and acceptance (75.0% respectively). Only three domains showed significant differences after the educational programme: (Planning: 62.5% vs 77.5%, p=0.026; Denial: 57.5% vs 37.5%, p=0.004; Venting: 62.5 vs 52.5, p=0.004)

CONCLUSION: The epilepsy education programme was beneficial in terms of improving knowledge and attitude. These improvements were also shown to be able to help patients with their coping strategies.

KEYWORDS: pharmacy practice, AKA, epilepsy, EPACE

OP2-26 (Oral)

AWARENESS OF ADVERSE DRUG REACTIONS (ADR) REPORTING AMONG PHYSICIANS IN PEJABAT KESEHATAN DAERAH TIMUR LAUT (PKTL), PENANG

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INTRODUCTION: Reporting adverse drug reactions (ADR) spontaneously is considered as a cornerstone of pharmacovigilance. However, under-reporting of ADR is a common problem in PKTL.

OBJECTIVES: This study aimed to assess the awareness of ADR reporting among physicians from all clinics in PKTL and to get an insight into the causes of under-reporting of ADR.

METHOD: A cross-sectional study was carried out via validated questionnaires adapted from Rakesh and Anil (2013). The questionnaires were distributed to 42 physicians from July to September 2014. Microsoft Excel worksheet (Microsoft Office 2007) was used for result analysis.

RESULTS: All 42 physicians responded to the questionnaires. 88% of the physicians were aware that ADR should be reported by them and 90.48% feel that ADR reporting and monitoring system would benefit the patients. 95% of the physicians were aware that pharmacist could be the right person to assist them in ADR reporting. However, 92.9% of physicians felt that they were inadequately trained in ADR reporting. ‘Busy schedule (69%)’, ‘difficult to pinpoint suspected drug (59.5%)’, ‘do not know the exact authority to report ADRs (33.3%)’ and ‘lack of incentives (28.6%)’ were some of the reasons for under-reporting of ADRs.

CONCLUSION: It was observed that physicians were aware of ADR reporting but there was an inadequacy in knowledge of how to report them. More awareness of ADR reporting system should be created.

KEYWORDS: pharmacy practice, adverse drug reaction, pharmacovigilance, ADR reporting system
INTRODUCTION: In Malaysia, the prevalence of traditional and complementary medicines ever used in the lifetime of community-dwelling residents was 69.4%. However, information regarding this therapy among epilepsy patients was scarce.

OBJECTIVES: This study was conducted to assess patient’s perception and practice of complementary and alternative medicine, as well as their beliefs about medicines for the management of epilepsy.

METHOD: This cross-sectional study was conducted in Neurology Clinic of Universiti Kebangsaan Malaysia Medical Centre from February to July 2015. Convenience sampling method was used to recruit epilepsy patients into the study.

RESULTS: A total of 61 patients completed the questionnaire distributed to them, yielding 89.7% response rate. Majority of the respondents were <30 years old, Malay, single, employed, had lower monthly income, and on monotherapy of anti-epileptic drugs. 52.5% respondents had negative general perception of complementary and alternative medicines, and 42.6% of total respondents used the therapy. The Necessity-Concerns Differential score was 0.37 +/- SD 0.768. Bivariable analysis showed employment status and general perception were significantly associated with the use of complementary and alternative medicines ($\chi^2 = 5.111$, $p = 0.024$; $\chi^2 = 8.548$, $p = 0.003$ respectively). There was also significant association between education levels and Necessity-Concerns Differential score [t (59) = 2.425, $p = 0.018$]. Multiple logistic regression suggested that respondents’ general perception and employment status significantly influenced the use of complementary and alternative medicines. Adjusted odds ratios for employed status and positive general perception were 3.792 (95% CI 1.167-12.317) and 5.389 (95% CI 1.675-17.340), respectively.

CONCLUSION: Majority of the epilepsy patients had negative general perception of complementary and alternative medicines, were non-user of the therapy, and were convinced of the necessity of anti-epileptic drugs. The use of complementary and alternative medicines was influenced by general perception and employment status of patients in this study.

KEYWORDS: pharmacy practice, complementary and alternative medicine, traditional medicine, epilepsy

OP2-28 (Oral)
AN EVALUATION ON PHARMACOKINETIC DATA OF AMINOGYLCOSIDES IN A TERTIARY HOSPITAL OF PERAK STATE

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INTRODUCTION: Therapeutic drug monitoring is frequently used to individualize dosing of aminoglycosides to avoid toxicity and drug resistance. However, whether the initiation of dosage recommendation based on the general population pharmacokinetic data is optimum for various populations remained debatable.

OBJECTIVES: This study aimed to determine the adult pharmacokinetic data for aminoglycosides in local population.

METHOD: A retrospective cross sectional study of aminoglycosides therapeutic drug monitoring cases for 2014 in Hospital Raja Permaisuri Bainun, Ipoh was conducted. Pharmacokinetic data was calculated in the Excel spreadsheet and the data was analysed by using SPSS.

RESULTS: A total of 380 cases were recruited. The Vd of aminoglycosides was 0.3761L/kg (n=380, IQR=0.22), which was significant higher than the general population data 0.25L/kg (p<0.05). Ke and CL of aminoglycosides did not show any significant difference from the general population. 15.5% of total 380 cases were within range of maximum and minimum concentration of aminoglycosides, but 74.5% of total 380 cases were subtherapeutic at the maximum concentration of aminoglycosides. Larger Vd was needed to predict a larger dose of aminoglycosides to achieve therapeutic level. Chinese had highest Vd (Vd=0.4018L/kg, IQR=0.23) (p<0.05) among the other ethnic. Male had higher Vd (Vd=0.4018 L/kg, IQR=0.23) and CL (CL=0.10 L/kg/hr, IQR=0.06) compared to female (p<0.05). In hematological malignancy patients, CL (CL=0.11L/kg/hr, IQR=0.07) was higher compared to the non-hematological malignancy patients (p<0.05) but there was no difference in the Vd. There was no difference in the Vd of aminoglycosides in different age groups. However, the CL of aminoglycosides was lower in the age group above 41 years old.

CONCLUSION: There were differences between pharmacokinetic data for aminoglycosides in this study population and that of general population. These findings are helpful in determining aminoglycosides initial dosing and avoid inappropriate antibiotic dosing and drug resistance.

KEYWORDS: clinical pharmacy, aminoglycosides, pharmacokinetic data, therapeutic drug monitoring
INTRODUCTION: Gelatine being a biopolymer has various applications in the pharmaceutical industry as a stabilizer, gelling agent, suspending agent, binding agent, viscosity-increasing agent and in vaginal drug delivery. Recent controversial advances regarding intravenous colloidal plasma expander, has shown that gelatin type plasma expander has better advantage due to its low molecular weight, cost effectiveness and comparatively wider safety (GRAS) compared to other similar categories of colloidal group such as hexaethylstarch (HES), albumin or fresh frozen plasma. The only disadvantage is when given in large amount, it interferes with the coagulation mechanism of blood whereas crystalloids would cause edema.

OBJECTIVES: The aim of this study was to evaluate and characterise shank and toes of Gallus gallus domesticus as an alternative gelatine source in the formulation of intravenous colloidal plasma expander.

METHOD: CST gelatin was made from halal CST by extraction method and was used in the formulation of colloidal CST gelatine plasma expander. The physical characterisations were conducted such as inspection of the appearance of the solution, gelatine determination, pH determination, osmolarity determination, sodium ion determination and chloride ion determination.

RESULTS: Ten formulations of CST plasma expanders were developed based on the commercially available bovine-based (BS) colloidal formulations out of which 5 formulations showed similar physical appearance to the market product. The other formulations showed cloudy white to yellow appearance which might be due to the high presence of glycine and glutamine.

CONCLUSION: CST gelatine obtained for plasma expander formulations complies with the standard pharmacopoeia requirements. These formulations have characteristics and properties which are similar to BS gelatin and commercially available colloidal plasma expanders. This is beneficial for the poultry industry whereby unconsumed by-products such as CST can be processed into valuable commercial gelatine thus maximising the utilisation of waste products. The CST gelatine can also be used in pharmaceutical applications and cosmetics.

KEYWORDS: pharmacy research, gelatine, plasma expander, colloidal, biomaterial

INTRODUCTION: Self-monitoring of blood glucose (SMBG) and glycosylated haemoglobin (HbA1c) is important for diabetic patients to manage their blood glucose. This is important as a well-controlled glycaemic level will decrease the risks of long-term complications. SMBG is found to be crucial to patients as it provides real-time information on patients’ glucose level and thus allows the patients to self-adjust their daily diet, physical activities and medications.

OBJECTIVES: The objective of this study was to evaluate the awareness and perceived barriers to SMBG among diabetic patients in Hospital Bukit Mertajam.

METHOD: Face-to-face interview was conducted with structured bi-lingual (Bahasa Malaysia and English) questionnaire among diabetes patients admitted to medical wards in Hospital Bukit Mertajam, Pulau Pinang from the period of August to October 2012. Respondents aged more than 18 years old treated with insulin alone or in combination with Oral Hypoglycaemic Agents (OHA) were included. Descriptive statistics were used to analyse the data.

RESULTS: A total of 48 eligible patients were interviewed. 40 (83.3%) of them were aware of SMBG and 38 (83.3%) of them thought that SMBG was useful in diabetes management. From the 40 patients who were aware of SMBG, only 24 patients (60%) practised it and 16 patients (40%) did SMBG at least once a week. However, only 37.5% recorded their SMBG results in a book to be reviewed by healthcare professionals. Perceived barriers identified to SMBG were ‘fear of needle prick’, ‘inconvenience’, ‘cost of the strips’ and ‘patients felt unnecessary.’

CONCLUSION: In conclusion, the majority of patients were aware of SMBG, but various perceived barriers prevent them from adopting the practice of SMBG.

KEYWORDS: pharmacy practice, Pulau Pinang, self-monitoring blood glucose, oral hypoglycaemic agents (OHA), diabetes
INTRODUCTION: Indiscriminate use of antibiotics is one of the major factors leading to antimicrobial resistance which has posed a threat to public health worldwide. Hence, clinical audits are necessary to assess the extent of judicious antibiotic use, especially in primary healthcare settings.

OBJECTIVES: This research aimed to assess the appropriateness of antibiotic prescribing for URTI (based on clinical indications) in health clinics with resident Family Medicine Specialists in Kedah. The audit also evaluated the choices of antibiotics prescribed and their regime, as compared to a specially-designed reference which combined recommendations from local antibiotic guideline and expert reviews.

METHOD: All prescriptions with a diagnosis of URTI (specifically acute pharyngitis, acute rhinosinusitis, and acute otitis media) were screened retrospectively from 23rd until 27th August 2015. Case notes for each prescription were then retrieved and reviewed by Medical Officers for the clinical indications and the necessity of prescribing antibiotics, while pharmacist reviewed the antibiotic regime for those who were prescribed antibiotics.

RESULTS: 2,749 cases were being studied from 24 participating Health Clinics in Kedah. Out of the total, 944 cases were prescribed antibiotics, while among them 591 cases were indicated for antibiotics. Out of the 591 cases, only 302 cases adhered to the antibiotic regime recommended by local antibiotic guideline. Another 1,735 prescriptions were not indicated for antibiotics and had no antibiotics prescribed as well. Amoxicillin were found to be the most common antibiotic prescribed for acute pharyngitis/tonsillitis and acute otitis media, while Erythromycin stood as the common choice in acute rhinosinusitis. Overall, 2,039 prescriptions (74.17%) adhered to the treatment guideline for URTI.

CONCLUSION: This study suggested that more aggressive approach to increase the awareness to curb antimicrobial resistance via judicious use of antibiotics should be in place. Prompt information dissemination about the updates of local antibiotic guideline is essential as most of the prescribers are not aware of the exclusion of Erythromycin from the choice of antibiotics for URTI cases.

KEYWORDS: clinical pharmacy, Kedah, antibiotics, audit, upper respiratory tract infection

INTRODUCTION: Acute Respiratory infections (ARI) are common infection diseases in childhood. Despite predominantly viral in origin and self-limiting, antibiotics were frequently prescribed to treat the infections. This may contribute to the emergence and spread of antibiotic-resistant bacteria in communities.

OBJECTIVES: To study the antibiotics prescribed in primary care settings for paediatric patients with ARI.

METHOD: A cross-sectional study was conducted for a duration of 2 months involving 131 patients who visited general practitioners (GPs) for ARI prior to hospital admission. Information regarding GP visit was collected from patients. The GPs were further contacted through telephone. Information on the diagnosis and drugs prescribed to patient were collected. The appropriateness of the drugs prescribed were further evaluated by a pharmacist and a paediatrician based on the choice, dose, duration and frequency.

RESULTS: Of 131 patients, 96 patients were prescribed at least one antibiotic. The overall prescribing was 73.3% (95% CI; 65.9-80.7). However 39 patients was excluded for further evaluation due to insufficient information from the GPs. Only 57 patients with complete information on antibiotic were tabulated and analysed. Majority of the patients (40.3%) were diagnosed with pharyngotonsillitis, 35.1% with pneumonia, 15.8% with unspecified ARI and 8.8% with bronchiolitis. The most commonly prescribed antibiotics were Cephalexin (31.1%), Amoxycilin/Clavulanate (18%), Amoxycilin (13.1%), Azithromycin (11.5%), and Cefaclor 11.5%. More than three quarters (80.3%) of the antibiotics were found to be inappropriate due to inappropriate dose (52.6%), inappropriate duration (49.1%), inappropriate frequency (22.8%) or inappropriate choice (10.5%).

CONCLUSION: There is a widespread use of broad spectrum antibiotics in pediatric patients with ARI in primary care settings. The frequency of inappropriate antibiotic prescribing is alarmingly high. There should be more continuous education for the prescribers and the public in the future to raise the awareness of the disease and the treatment of ARI.

KEYWORDS: clinical pharmacy, respiratory tract infection, antibiotics, pneumonia, acute respiratory infection
OP2-33 (Oral)
IMPACT OF PHARMACISTS’ INVOLVEMENT IN HOME MEDICATION REVIEW AMONG STROKE PATIENTS

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INTRODUCTION: Home medication review (HMR) is a continuity of patient care from ward and MTAC to patients’ home. HMR helps to promote optimal and quality use of medication at patients’ home. It is very important to help improve patients ‘and caregiver’ knowledge and understanding about medicines.

OBJECTIVES: The objectives were to determine the effectiveness of pharmacists’ intervention on patients’ blood pressure and glucose level pre- and post-HMR and also to determine the effectiveness of HMR by reviewing compliance pre- and post-HMR

METHOD: This pre-post study was conducted from January to June 2015 which involved post stroke patients who underwent HMR services in HSNZ. Patients were referred by Home Care Staff Nurses or physicians. Only those who underwent at least 2 sessions of HMR were chosen for this study as the effects of pharmacists’ intervention needed to be observed and recorded. Patients’ blood pressure and glucose reading pre and post-HMR were recorded together with pharmacists’ intervention. Modified Morisky Adherence Scale (MMMAS) was used to assess patients’ compliance. Data was analysed by using SPSS v. 21 with p<0.05 considered as statistical significant

RESULTS: A total of 50 patients with mean age 63.4 ± 11.9 years old were included in this study. 86.0% of patient had hypertension as risk factor and 56.0% of them had diabetes mellitus. There was a significant reduction of SBP during HMR from 149.5 mmHg to 144.6 mmHg (p = 0.007). A reduction was also seen in mean blood glucose from 9.01mmol/L to 8.59mmol/L (p=0.031). MMOAS in patients was also found to be improved significantly (p=0.011)

CONCLUSION: Pharmacists’ involvement and intervention during HMR visits helps in the reduction of blood pressure in patients treated with antihypertensive agents and also helps in reducing blood glucose level. Medication compliance is also improved with the involvement of pharmacists.

KEYWORDS: pharmacy practice, home care, home medication review, stroke

OP2-34 (Oral)
PATIENT SATISFACTION TOWARDS PHARMACY SERVICES IN GOVERNMENT HEALTH CLINICS IN KLANG VALLEY

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INTRODUCTION: With the expansion of pharmacy services in public healthcare, continual evaluation of patient satisfaction must be carried out as it is an important indicator of service quality. There is currently no published research on this matter in Malaysia.

OBJECTIVES: To determine the level of patient satisfaction towards pharmacy services and its influencing factors in government health clinics in Klang Valley, Malaysia.

METHOD: A cross-sectional study was conducted among 400 patients visiting the pharmacy in 3 randomly selected government health clinics who were recruited using systematic random sampling. Data was collected using a validated self-administered questionnaire in Bahasa Melayu of which patient satisfaction was assessed in 3 dimensions (administrative competency, technical competency and convenient location). Descriptive statistics, simple linear regression and multiple linear regression were used for data analysis.

RESULTS: The response rate was 83.3% (400/480). Total mean score for patient satisfaction was found to be 7.56 (1.32) (range = 1 to 10). 5 factors were found to have significant association with patient satisfaction: age, level of education, frequency of visit to pharmacy, self-perceived health status, and patients’ general knowledge of pharmacists. Older patients and those with higher education were found to have lower mean score for patient satisfaction. Patients who visited the pharmacy more than once in the past 3 months; those who perceived themselves in better health status; and those who had more correct general knowledge of pharmacists expressed higher mean score for patient satisfaction.

CONCLUSION: This study provides an insight into the profile of patients visiting the pharmacy in government health clinics and these patients expressed relatively high level of patient satisfaction towards pharmacy services. Efforts should be focused on improving public’s understanding of pharmacists’ expertise and services provided in order to maximise professional capacity of pharmacists and increase public’s recognition for pharmacy services.

KEYWORDS: pharmacy practice, patient satisfaction, pharmacy services, government health clinics
OP2-35 (Oral)
CLINICAL AND COST OUTCOME AFTER TWO YEARS IMPLEMENTATION OF ANTIMICROBIAL STEWARDSHIP PROGRAMME AT MAJOR SPECIALIST HOSPITAL IN MALAYSIA (CCOAS)

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INTRODUCTION: Antimicrobial stewardship programme (ASP) in Malaysia has been implemented in most major specialist hospital in all states with the development of the ASP Protocol.

OBJECTIVES: To demonstrate the recommendations done, cost saving impacts and acceptance of the intervention done by the ASP team.

METHOD: This study was conducted in a major specialist hospital by a retrospective review of ASP Documentation Sheet from 2014 until 2015. The ASP team comprised infectious disease (ID) physicians, pharmacists and microbiologists. Medication charts sent to pharmacy were reviewed weekly by ASP pharmacists. Cases reviewed were those on controlled antibiotics, inappropriate dosage regimen, and inappropriate combination of antibiotics and prolonged duration of antibiotics. A recommendation acceptance rate was estimated retrospectively using an in-depth chart audit of recommendation based on ASP documentations as well as pharmacy records and doctors’ notes. Patient outcome after 30 days and cost saving following recommendations were also recorded in the APS Documentation Sheet.

RESULTS: A total of 226 cases were referred to ASP team. 182 (80.5%) of ASP recommendations were accepted. A total of 248 recommendations were made, of which discontinuation of antibiotic was the most common recommendation (n=96, 38.7%), followed by change of antibiotic based on culture (n=65, 26.2%) and change of antibiotic based on guideline (n=45, 18.1%). Average cost saving per patient in the recommendation acceptance group was RM133.83. Average extra cost incurred per patient due to non-recommendation acceptance was RM106.74.

CONCLUSION: Acceptance to the ASP recommendations is high and overall, results in cost saving.

KEYWORDS: clinical pharmacy, antibiotic, antimicrobial stewardship programme

OP2-36 (Oral)
VALIDATION OF QUESTIONNAIRE TO STUDY PUBLIC KNOWLEDGE AND PERCEPTIONS TOWARDS CHILDHOOD VACCINATION

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INTRODUCTION: Ministry of Health Malaysia had reported a relatively high percentage in childhood immunisation coverage in 2012. However, poor knowledge of vaccinations might cause caregivers to be easily influenced by others, resulting in negative perceptions towards vaccinations.

OBJECTIVES: This study was done to develop and validate a questionnaire to assess knowledge and perceptions towards childhood vaccination among the public.

METHOD: Forty-seven questions were constructed based on literature review and Malaysian Clinical Practice Guideline for Childhood Immunisation. The questionnaire consisted of 4 parts; A) Demography, B) Knowledge, C) Perceptions, and D) Knowledge Seeking Behaviour. The Knowledge and Perceptions sections were in the form of Likert scale. The questionnaire was revised after the content was reviewed by seven experts in related fields. A group of randomly selected subjects reviewed the questionnaire to ensure that the questions were comprehensible by the general public, changes were made and the improved questionnaire was re-distributed to the same group. The questionnaire was then distributed to 190 respondents which consisted of the general public and staffs of Hospital Tuanku Fauziah, to test its construct validity and reliability. Using statistical tests, a few questions were omitted.

RESULTS: Construct validity was tested for Knowledge (17 questions) and Perceptions (17 questions) using factor analysis. Then, questions with communalities value < 0.5 were deleted from both sections, three and four respectively. Keiser-Meyer-Olkin test and Bartlett’s test results for knowledge were 0.771 and <0.001 respectively, and for Perception were 0.752 and <0.001 respectively. Reliability of the questionnaire was assessed using Cronbach’s Alpha and it was found to be 0.760 and 0.715, for Knowledge and Perceptions respectively.

CONCLUSION: The questions for Knowledge and Perceptions were validated for content validity, face validity and construct validity. Whereas, questions for Knowledge Seeking Behaviour were validated using content validity only as they are open ended questions.

KEYWORDS: pharmacy practice, vaccination, paediatric, validation, perception
OP2-37 (Oral)
AN AUDIT OF SURGICAL ANTIBIOTIC PROPHYLAXIS IN TAIPING HOSPITAL

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INTRODUCTION: Inappropriate use of antibiotics in surgical prophylaxis might reduce treatment efficacy, increase healthcare cost and result in antibiotic resistance. From the national antibiotic usage among Malaysian government hospitals in 2014, Hospital Taiping was one of heavy users of cefoperazone. From our observation, this antibiotic was commonly used in surgical antibiotic prophylaxis.

OBJECTIVES: This study was conducted to evaluate the use of antibiotics in current surgical antibiotic prophylaxis practice in Hospital Taiping in terms of choice, timing and duration of prophylactic antibiotic.

METHOD: An observational audit on all patients undergoing surgery from all disciplines except dental and ophthalmology was conducted in March 2015 over a 4-week (every Monday-Friday) duration. Patients undergoing dirty and contaminated procedures, with positive culture or having active infection at time of operation were excluded. All relevant data on surgical antibiotic prophylaxis was collected from patients’ case notes, anaesthetic notes and medication charts in the wards. The data was analysed descriptively.

RESULTS: 197 cases with clean and clean-contaminated surgery were reviewed. 60% (n=118) of cases were given prophylactic antibiotics; with most having received single prophylactic agent (77%, n=91). From 145 antibiotics prescribed, cefoperazone was the most frequently used pre-operative antibiotic, involving 77 (53.1%) cases 82% (n=119) of prophylactic antibiotics were administered within an hour prior to incision. 87 cases continued antibiotic post-operatively whereas 22 cases had no antibiotic prophylaxis but antibiotics were only started post operation. Out of the 87 patients administered with antibiotics post-operatively, 43 (49%) of the patients were given prophylactic antibiotics more than 24 hours post operation. The reasons of antibiotic continuation were usually not stated in the doctors’ notes.

CONCLUSION: This audit revealed a shortcoming in the choice of antimicrobial agent, timing of administration and total duration of surgical antibiotic prophylaxis in Hospital Taiping. This necessitates further improvement in terms of documentation for continuation, and protocols underlining antibiotic administration.

KEYWORDS: clinical pharmacy, antibiotic, surgical prophylaxis, cefoperazone

OP2-38 (Oral)
RETROSPECTIVE REVIEW ON GLYCAEMIC CONTROL AFTER SWITCHING FROM ORIGINAL GLICLAZIDE MODIFIED-RELEASE (MR) TO GENERIC GLICLAZIDE MODIFIED-RELEASE (MR) 30MG

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INTRODUCTION: Generic drugs are assumed to have similar efficacy as original drugs through bioequivalent studies. In public health institutions, a change from original to generic drug is common especially after patency ends for its lower cost. However healthcare professionals and patients still query the efficacy of generic drugs.

OBJECTIVES: The aim of this study was to evaluate the glycaemic control, dose and cost when switching from original to generic Gliclazide MR.

METHOD: A retrospective study was conducted in Hospital Pulau Pinang by retrieving patient records of those on Gliclazide MR from Endocrine Unit. From February 2012 onwards the supply of Gliclazide MR was switched to generic. Hence data from December 2011 to August 2012 were reviewed. Data of patients taking Gliclazide MR at baseline before the switch, and at 3 months and 6 months after the switch were included.

RESULTS: A total of 63 patient data with a mean age of 57 were reviewed. Glycaemic control of patients on Gliclazide MR deteriorated after switching to generic with HbA1c increasing over time. [Baseline HbA1c: 7.1 (IQR6.6-8.4); post 3 months HbA1c: 7.35 (IQR 6.6-8.0); post 6 months HbA1c: 7.2 (IQR 6.7-8.6)]. A significantly higher dose increment of 7.8% of generic Gliclazide MR was noted at post 6 months in comparison to baseline (p=0.033). However, the cost of generic Gliclazide MR was found to be significantly lower after brand switching (p<0.01) with 48% cost reduction.

CONCLUSION: Despite a significantly higher dose of generic Gliclazide MR, the HbA1c continued to significantly increase with time (p=0.029). Efficacy profile of generic medicines should be reviewed to ensure equal glycaemic control even though it may be available at a lower cost.

KEYWORDS: clinical pharmacy, Pulau Pinang, gliclazide, diabetes mellitus, generic medicine
OP2-39 (Oral)
KNOWLEDGE, ATTITUDE AND PERCEPTIONS REGARDING ISLAMIC MEDICINE AMONG MUSLIM PATIENTS WITH CHRONIC DISEASE

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INTRODUCTION: Practice of Islamic medicine is not widely acknowledged in Malaysia even by Muslim patients compared to other complementary and alternatives medicines and there are also no statistical data on Islamic medicine in Malaysia.

OBJECTIVES: This study was conducted to evaluate the knowledge, attitude and perceptions of Islamic medicine among Muslim patients for the treatment of chronic diseases.

METHOD: A cross sectional study was conducted among patients with chronic diseases aged 20 to 60 years old in outpatient pharmacy at Hospital Teluk Intan using a validated, self-administered questionnaire. A systematic random sampling was used in the selection of sample. Spearman correlation was used to analyse the relationship between knowledge-attitude, knowledge-perceptions and attitude-perceptions of respondents.

RESULTS: From 334 questionnaires distributed, only 318 were returned; 51.6% were male and 48.4% were female. Mean knowledge score was 7.42±1.50 (out of 9); mean attitude and perception scores were 27.06±3.79 (out of 35) and 32.26±4.41 (out of 40) respectively. Mean for overall knowledge, attitude and perception (KAP) was 66.75±8.02 out of maximum possible score of 84. Positive significant correlation was reported between knowledge and attitude (r=0.223, p<0.001) and between knowledge and perception (r=0.128, p=0.022). There was a positive and strong correlation between attitude and perception (r=0.62) and p<0.001. Majority of respondents (66.8%) chose lack of exposure to Islamic medicine as the main barrier for them to get the treatment.

CONCLUSION: In conclusion, majority of the respondents possess good knowledge, have positive attitude and positive perception towards Islamic medicine. More programmes should be developed in the future to enhance exposure of Islamic medicine to the public.

KEYWORDS: pharmacy practice, knowledge, attitude, perception, Islamic medicine

OP2-40 (Oral)
TUBERCULOSIS INCIDENCE AFTER COMPLETION OF ISONIAZID PROPHYLAXIS THERAPY IN RETROVIRAL DISEASE PATIENTS

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INTRODUCTION: Isoniazid prophylaxis therapy (IPT) is a proven intervention to prevent tuberculosis (TB) among retroviral disease (RVD) patients. The implementation of IPT is recommended by the Ministry of Health Malaysia since 2012. However, there are few data in local setting regarding this implementation and its effectiveness.

OBJECTIVES: To measure the level of uptake of IPT and TB incidence after the completion of IPT.

METHOD: A retrospective observational study was conducted in Infectious Disease Clinic, Hospital Tuanku Ja’afar, Seremban, Negeri Sembilan. All 289 patients were screened through medical documents throughout November 2011 until May 2015. 123 patients who received oral isoniazid 5mg/kg daily as isoniazid prophylaxis therapy (IPT) were selected. TB incidence was calculated in person-years using Cox regression analysis.

RESULTS: A total of 123 (42.6%) patients received IPT out of 289 RVD patients between November 2011 and May 2015. 78% completed 6-month IPT. The overall TB incidence was 2.2 per 100 person-years (95%CI, 2.05 to 2.35). Patients who initiated IPT before antiretroviral therapy had TB incidence of 14 per 100 person-years while those who initiated IPT after antiretroviral therapy was 1.6 per 100 person-years (p=0.0251).

CONCLUSION: IPT may be beneficial among RVD patients in preventing incidence of TB especially after antiretroviral therapy has been started.

KEYWORDS: clinical pharmacy, Negeri Sembilan, tuberculosis, isoniazid, retroviral disease
OP2-41 (Oral)
ADVERSE DRUG REACTIONS OF ANTI-TUBERCULOSIS DRUGS AMONG TUBERCULOSIS PATIENTS TREATED IN SG. BULOH HOSPITAL
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INTRODUCTION: The data obtained from this study will help to uncover the statistical characteristics of Malaysian patients treated for Tuberculosis. It will also estimate the burden in dealing with ADRs of anti-TB drugs in Hospital Sg. Buloh and identify the risk factors or other variables that leads to ADRs of anti-TB drugs.

OBJECTIVES: To analyse and assess ADRs induced by anti-TB drugs, systems involvement, causality and severity. To identify the risk factors and predictors associated with ADRs induced by anti-TB drugs in the study population. To observe the management of the ADRs in the study population.

METHOD: A retrospective observational record review study was conducted among 160 patients who were in-patients and/or out-patients clinically diagnosed with TB on the follow-up at Infectious Disease Unit in Hospital Sg. Buloh and received anti-tuberculosis regimen according to the protocol of TB treatment. Descriptive statistics, simple and multiple logistic regression were used for analysis.

RESULTS: One third of the patients experienced ADR and half of the subjects experienced ADRs within short period of time (within the first 14 days). Half of the subjects had “possible” causal reactions whereas two thirds of those suffering from an ADR experienced a severe reaction. Seven factors were identified as possible predictors including age between 41 to 50 years (p = 0.041), age between 51 to 60 years (p=0.101), female gender (p=0.234), Malay ethnicity (p =.242), drug allergy (p=0.225), pulmonary-TB (p = 0.160), intensive phase regime with HREZ (p=0.027) and maintenance phase regime with HR (p=0.020). Final analysis with multiple logistic regression however showed that factors included were not significantly associated with ADRs.

CONCLUSION: The findings would facilitate physicians to screen and make prompt detection of these ADRs, provide early management and counselling which will improve the outcomes of TB treatment.

KEYWORDS: clinical pharmacy, adverse drug reactions, anti-tuberculosis drugs, tuberculosis, anti-retroviral

OP2-42 (Oral)
PUBLIC PERCEPTION TOWARDS THE ROLE OF PHARMACISTS: A CROSS-SECTIONAL PILOT STUDY IN THE STATE OF SABAH, MALAYSIA
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INTRODUCTION: Pharmacists play an important role in healthcare delivery. Over the years, their role has shifted from product-oriented to patient-oriented. However, studies conducted in Malaysia to evaluate public perception towards the roles of pharmacists are still scarce.

OBJECTIVES: This study aimed to assess the perceptions of the public towards the role of pharmacists in the state of Sabah, Malaysia.

METHOD: This was a questionnaire-based cross-sectional study conducted from September 2014 to June 2015 in three major cities in Sabah, Malaysia, namely Kota Kinabalu, Sandakan and Tawau. Respondents were conveniently selected from three strata, namely public facilities, community setting and general public. They were interviewed based on a questionnaire to assess their perceptions towards the role of pharmacists.

RESULTS: A total of 647 respondents were interviewed. 61.4 % of the respondents agreed that pharmacists knew more about their medications, side effects and how to use the medications than their doctors. However, more than half of the respondents (54.4%) perceived that pharmacists’ role was just to supply medications and 66.6% of the respondents perceived that pharmacists’ job was to follow doctors’ directions. 89.0% of the respondents appreciated and complied with the counselling points given by their pharmacists. 85.0% of the respondents hoped that pharmacists could play more roles in healthcare in the future. 40.0% of the respondents agreed that community pharmacists were just business people who sold products in their pharmacies. The most influential factor influencing respondents’ perception towards pharmacists was the friendliness of the pharmacists (89.4%) while the least influential was the waiting time of less than 30 minutes (76.1%).

CONCLUSION: Respondents in this study showed variations in their views of the pharmacy profession. Hence, to improve the pharmacy practice, efforts should be taken to address the identified shortcomings and to promote the roles of pharmacists to the general public.

KEYWORDS: pharmacy practice, Sabah, public perception, pharmacist’s role
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PP1 (Poster)

ANTIBIOTICS USE IN IN-WARD MANAGEMENT OF PAEDIATRIC ACUTE GASTROENTERITIS

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INTRODUCTION: The use of antibiotics in pediatric acute gastroenteritis (AGE) is mostly based on patients’ clinical presentations prior to definite laboratory results. The empirical use of antibiotics in these patients remains an area of interest.

OBJECTIVES: This study aimed to describe the pre-admission management of AGE patients and to determine the associations between the use of empirical antibiotics with clinical presentations upon admission, pathogens isolated, and patients’ outcomes.

METHOD: All AGE patients admitted to Paediatric General Wards, Hospital Tengku Ampuan Afzan were recruited over 4 months (November 2015-February 2016). Data were extracted from patients’ case notes. The data were analysed using IBM Statistical package for the social sciences (SPSS).

RESULTS: A total of 79 patients were included with mean (SD) age of 3.3 (2.8) years. There were 17 patients (21.5%) who received antibiotics. For patients who seek pre-admission consultations, oral rehydration salt (ORS) (n=21, 46%) and antibiotics (n= 10, 22%) were prescribed. The empirical antibiotics given in the ward were based on the common pathogens. The common reasons to prescribe antibiotics were temperature spikes (n=10, 52.9%), positive cultures (n=5, 29.4%) followed by increased white cell counts (n=3, 17.7 %). Positive cultures reported among patients with antibiotics was 6.3% from the total AGE admissions. The median (IQR) days of hospitalization of patients who received antibiotics was longer compared to those patients who did not receive antibiotics, (3 (6) vs 3 (1) days) (Z=-3.3, p=0.001). There was significant association between antibiotics given and complication of secondary bacteraemia (p= 0.04).

CONCLUSION: The pre-admission management of AGE patients was not ideal with the under use of ORS where rehydration is important in AGE management. Empirical antibiotics were mostly started due to fever. The use of antibiotics significantly lengthens the hospitalization with low percentage of positive cultures.

KEYWORDS: clinical pharmacy, paediatric, acute gastroenteritis, antibiotics

PP2 (Poster)

A STUDY ON THE COST OF MEDICINES PER PRESCRIPTION AT OUT-PATIENT PHARMACY OF PUBLIC HOSPITALS IN MALAYSIA

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INTRODUCTION: Continuous escalation of medicines expenditure has become a burden to the government as a payer for social health welfare in many countries including Malaysia. Hospitals are the main distributor of medicines to people, therefore, the major expenditures of medicines occur largely through hospitals.

OBJECTIVES: This study aimed to determine the trend of medicines cost and number of items per prescription at out-patient pharmacy of public hospitals in Malaysia.

METHOD: A cross-sectional study was conducted at the out-patient pharmacy of 89 public hospitals. The prescription was sampled within five working days on the third week of July in 2012 and 2014 respectively using systematic random sampling. A total of 18,301 prescriptions (acute=8,381; chronic=9,920) were collected in 2012 and 18,611 prescriptions (acute=8,276; chronic=10,335) in 2014. Data were analysed using descriptive statistics. Results were expressed in median (IQR). All cost was reported as cost of prescription per visit.

RESULTS: The median medicines cost for acute treatment was RM6.57 (12.96) in 2012 and RM6.79 (13.50) in 2014. The median medicines cost for chronic treatment was RM51.08 (121.40) in 2012 and RM57.52 (136.50) 2014. The median medicines cost per prescription by different types of hospital showed some inclination from 2012 to 2014 except for acute prescriptions in major specialist hospitals (-2.44%) and chronic prescriptions in minor specialist hospitals (-15.06%). Non-specialist hospitals reported the highest median number of medicines for chronic prescriptions in both years (4 items) while other types of hospital resulted with 3 medicines per prescription except for major specialist hospital in 2012 (2 items).

CONCLUSION: The median medicines cost for acute treatment in 2012 and 2014 did not show any significant changes whereas for chronic treatment there was 12.61% of increment in 2012 to 2014. The number of medicines per prescription ranges from 2 to 4 from 2012 to 2014.

KEYWORDS: pharmacy health policies, medicines cost, out-patient, public hospitals
PP3 (Poster)

PATIENT SATISFACTION AND MEDICATION ADHERENCE ASSESSMENT IN DIABETES MEDICATION THERAPY ADHERENCE CLINIC (DMTAC)

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INTRODUCTION: The measurement of patient satisfaction and adherence are indeed important in disease management services especially in chronic disease as a mean of service benefit and quality assurance.

OBJECTIVES: This study aims to determine the satisfaction and adherence of diabetes mellitus patients at the DMTAC and to determine the relationship between patient satisfaction and adherence.

METHOD: The questionnaires were guided administered by the researcher and consists of three sections. 1) Socio-demographic, medical and medication history and clinical parameters, 2) Patient Satisfaction with Pharmaceutical Care Questionnaire (PSPCQ) and 3) The eight-item Morisky Medication Adherence Scale (MMAS). 165 patients from Hospital Sultanah Aminah, Hospital Sultanah Nora Ismail and Hospital Pakar Sultanah Fatimah who had received counselling at DMTAC were recruited. Data were analysed with SPSS 18.0, using the descriptive statistics and non-parametric tests.

RESULTS: The majority were female (50.9%), aged ≥ 60 years (40.0%), Malay (72.7%), had secondary education level (55.2%) and were unemployed (56.4%). Most of the patients had at least 4 visits (60.6%), had diabetes for more than 5 years (80.0%), on both oral and insulin (55.2%) and had 2 comorbidities (43.0%). 87% of patients were satisfied with DMTAC service (score 60-100) with mean scores of 76.8 and 26.1% had high adherence (score=8). There was a significant (p<0.01), positive fair correlation (rs=0.377) between satisfaction and adherence.

CONCLUSION: This study leads to better understanding on which area of satisfaction and adherence needs to be emphasised on patients at DMTAC. Such information was important in designing interventions to enhance patient satisfaction and adherence.

KEYWORDS: pharmacy practice, morisky medication adherence scale, adherence, pharmaceutical care

PP4 (Poster)

A SURVEY ON SERVICE DELIVERY OF UBAT MELALUI POS 1MALAYSIA (UMP1M) IN PUBLIC HEALTH FACILITIES

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INTRODUCTION: The Ubat Melalui Pos 1Malaysia (UMP1M) service was introduced to reduce waiting time at the pharmacy, ensure continuity of medication supply and increase compliance. However, patients who utilize UMP1M may face problems such as delayed deliveries, inability to understand medications and delivery of insufficient medications.

OBJECTIVES: The main objective was to evaluate the service delivery of UMP1M. Specific objectives were to determine patients’ satisfaction level with UMP1M, to identify factors impacting satisfaction towards UMP1M and to identify factors of improvement.

METHOD: A multi-centred, cross-sectional study was conducted using a self-administered questionnaire from May to September 2014. Data was analysed using SPSS version 20.

RESULTS: A total of 332 questionnaires were distributed and 222 were answered. The median rating of UMP1M was 9. Majority of the patients (97.3%) were satisfied with UMP1M. It was found that 98.6% of patients would use UMP 1M in future and 97.7% would recommend it to others. This study found that 9.9% had experienced delayed deliveries while 12.6% had received insufficient medications. Only 2.3 % had responded that their medications had been delivered to the wrong address. Punctuality in delivery (p=0.001) and delivery to the correct address (p=0.016) were found to statistically impact satisfaction towards UMP1M (p<0.05).

CONCLUSION: Participants were satisfied with UMP1M. Factors affecting satisfaction were punctuality in delivery and delivery to the correct address. Careful planning of delivery dates can help prevent delays in delivery. Counterchecking of parcels should be compulsory and caution should be exercised when noting down patients’ addresses.

KEYWORDS: pharmacy practice, pharmacy value added service, UMP 1Malaysia, satisfaction level, medication refill
PP5 (Poster)
ADHERENCE AND DRUG ATTITUDE OF PEOPLE WITH SCHIZOPHRENIA TOWARDS ANTIPSYCHOTICS AND RELATED MEDICINES IN OUTPATIENT CLINIC OF PERMAI HOSPITAL JOHOR BAHRU

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INTRODUCTION: Studies have shown non-adherence is a common behavior with about 20% to 56% schizophrenic patients are not adherent to their medicines resulting in higher rate of involuntary detention, longer hospital admissions and slower recovery from psychotic symptoms. MMAS-8 is a self-reported questionnaire related to medicine-taking behavior. Scores less than 6 were considered low adherence, between 6 to 7 were moderately adherent and score of 8 was considered high adherence. DAI-30 is a 30 item self report instrument and sum of the scores will result in either positive or negative total score.

OBJECTIVES: To understand the adherence and drug attitude of schizophrenic patients in Johor Bahru towards antipsychotics and related medicines as well as their association with sociodemographic factors.

METHOD: A questionnaire-based cross-sectional study was carried out using MMAS-8 and DAI-30 to measure adherence and drug attitude respectively. Participants that fit the inclusion and exclusion criteria were approached to answer the questionnaire. Association between demographic data and both adherence and drug attitude were analysed. Statistical analyses were performed using SPSS 22.0.

RESULTS: 95 patients participated in the study and median (IQR) age was 37 (19). Participants were predominantly male (n=65, 68.4%); of Chinese ethnic group (n= 49, 51.6%); and had educational level of up to secondary school (n= 64, 67.4%). Median (IQR) for MMAS-8 was 5.75 (3.75) and for DAI-30 was 12.00 (16.0). Participants in the study mostly have low adherence but positive attitude towards their medicines. There was no statistically significant correlation between sociodemography with adherence and drug attitude.

CONCLUSION: No association was found between sociodemographic factors and medicine adherence and drug attitude. Subsequent larger scale research should be carried out to understand the sociodemographic factors that affect adherence and drug attitude to improve the treatment outcome of schizophrenic patients.

KEYWORDS: pharmacy practice, Johor, adherence, schizophrenia, antipsychotics

PP6 (Poster)
PREVALENCE OF SIDE EFFECTS PROFILE OF CLOZAPINE AND ITS CONTRIBUTING FACTORS AMONG PATIENTS ATTENDING OUTPATIENT CLINIC PERMAI HOSPITAL

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INTRODUCTION: Superiority of clozapine renders it to remain as the mainstay treatment of resistant schizophrenia (TRS) but its use is limited by the wide range of adverse effects, with a potential negative impact on compliance. However, their prevalence in the local setting has received little attention in the literature and not being well-studied.

OBJECTIVES: The study was designed to investigate the prevalence of various side effects in patients with TRS taking clozapine as well as its relationship with various contributing factors particularly total daily dose, patients’ age and concomitant medication.

METHOD: This was a 6-month cross-sectional study which recruited all TRS patients attending clozapine clinic in HPJB. Patients was interviewed and assessed for side effects when attending clozapine clinic by pharmacists. Data obtained was then used to examine the occurrence of clinically important categories of side effects, explicitly gastrointestinal, cardiovascular, central nervous system, metabolic, haematological, nocturnal enuresis and others. On top of that, statistical analysis was conducted to determine the factors influencing the prevalence.

RESULTS: Of 86 patients, 93% experienced side effects with 86% of them suffered from more than one. Most frequent adverse effects were hyper salivation (67.4%), sedation (65.1%), dry mouth (47.7%), postural hypotension (41.9%) and weight gain (41.9%). No patient suffered from extrapyramidal side effects, agranulocytosis and myocarditis in this study. A significant relationship was found between sedation and polypharmacy with a p-value <0.05. Patient who was on multiple CNS drugs were more prone to experience sedation as a side effect.

CONCLUSION: Clozapine adverse effects are common and potentially life-threatening. Along with the availability of general side effects profile, existence and co-operation of a multidisciplinary team similar to clozapine clinic in the study allows early detection, monitoring and intervention to maximize patients’ care.

KEYWORDS: clinical pharmacy, Johor, clozapine, antipsychotics
PP8 (Poster)
MULTIPLE PRESCRIPTIONS AMONG CHRONIC ILLNESS PATIENTS IN THREE MAJOR PUBLIC HEALTHCARE FACILITIES IN MELAKA: AN OVERVIEW

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INTRODUCTION: Frequent hospital admissions, changing of regimen and receiving treatment from multidisciplinary team are common among chronic patients. This may lead to receiving multiple prescriptions with duplicating medicine.

OBJECTIVES: To determine the percentage of multiple prescriptions and to compare behaviours among patients with duplicating medicine and non-duplicating medicine.

METHOD: A cross sectional study was conducted among adult patients with chronic illnesses attending government healthcare facilities in Klinik Pakar Perubatan Hospital Melaka (HM), Klinik Kesihatan Peringgit (KKP) and Hospital Alor Gajah (HAG). Systematic random sampling was applied. Patient with even waiting number at the pharmacy in either of the three facilities were selected. Self-administered questionnaire were given to the consented subjects with ample time to answer each of the questions. SPSS version was used to analyse the data.

RESULTS: A total of 920 patients answered the questionnaire, where 410 (44.6%) patients from HM, 158 (17.2%) from HAG and 352 (38.3%) patients from KKP. The overall prevalence of multiple prescriptions was 130 (14%) patients, with 17.5% in HM, 16.1% in KKP and 2.5% in HAG. Patients with duplicating medicine are more likely to lost their prescriptions, multiple admissions, do not have individual patient care book and feel necessary to keep excessive medicines at home compared to those with non-duplicating medicine (p<0.001).

CONCLUSION: Multiple prescriptions with duplicating medicines are an alarming issue that may need to be addressed by all healthcare team members. Treatment plan should be reviewed by emphasizing on the importance of past medication clerking.

KEYWORDS: pharmacy practice; Melaka, duplicate medications

PP9 (Poster)
FACTORS AFFECTING DEFAULTER RATE AMONG METHADONE PATIENT IN METHADONE MAINTENANCE THERAPY CLINIC IN MELAKA: A MULTICENTRE STUDY

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INTRODUCTION: Patient retention is crucial in methadone maintenance programme. Patient factors, programme factors and community factors may influence continuity of patient in this programme.

OBJECTIVES: To identify factors associated with defaulter among methadone patient in Methadone Maintenance Therapy Clinic in Melaka and to determine time duration they get defaulted.

METHOD: A case control study was conducted among patients who undergone Methadone Maintenance Programme in Ministry of Health facilities in Negeri Melaka from 31st July 2013 to 31st July 2014. Sample included only patients who had been enrolled in treatment for at least 90 days. Patients who are temporarily referred, transfer out patients, those with incomplete 20% of interest data were excluded. Using list of eligible methadone’s patients name for each facilities, simple random sampling was applied using PASW Version 20. Medical records for selected patients were retrospectively reviewed using specified data collection form.

RESULTS: Of the sample of 290 patients, 63 participants were defaulted and 227 are still active during study duration. Almost half of the patients had abuse more than one drug, a smoker and take alcohol. Factors associated with defaulter were amphetamine use (Adjusted OR: 6.97, 95% CI; 2.00,24.26, p=0.002) those without take away dose privilege (Adjusted OR: 2.58, 95% CI; 1.08, 6.14, p=0.032) and percentages day of missed dose during follow-up period (Adjusted OR: 1.06, 95% CI; 1.03, 1.09, p= 0.06). After almost 9 weeks, defaulter patients tend to missed their first methadone dose. Mean duration for patient to get defaulted after joined this programme were 71 weeks.

CONCLUSION: Drop out were more likely after 1.37 years of treatment. Take away dose privilege, previous amphetamine use and higher number of missed dose during treatment serve as significant associated factors for defaulter in methadone maintenance programme. Retention rates would be significantly improved by a change in the treatment strategies.

KEYWORDS: pharmacy practice; Melaka; methadone maintenance
**PP10 (Poster)**

**LIPID TOLERABILITY IN VERY LOW BIRTH WEIGHT (VLBW) INFANTS RECEIVING INTRAVENOUS LIPID**

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**INTRODUCTION:** Lipid is one of the crucial components in parenteral nutrition as it contains high energy density in a relatively low volume as compared to protein and carbohydrate. Lipid infusion decreases carbon dioxide production compared with carbohydrate and helps to improve net-nitrogen balance. In contrast, lipid might increase the risk of hyperbilirubinemia, cholestasis and thrombocytopenia.

**OBJECTIVES:** To determine the tolerability of lipids and possible complications following lipid infusion among VLBW infants in Neonatal Intensive Care Unit (NICU), Serdang Hospital.

**METHOD:** This is a prospective observational study done from July 2014-December 2015. Subjects on intravenous lipid were divided into 2 groups based on birth weight (Group ≥1000g and Group <1000g). Serum triglyceride level was measured after lipid infusion reached 3g/kg/day. Complications were collected from clinical notes through hospital eHIS system. Analysis was done using Mann-Whitney U-Test and Spearman’s rho correlation by SPSS version 19.

**RESULTS:** 35 eligible subjects were recruited into each arm. The median gestation age and birth weight were (30weeks, 1140g) in group ≥1000g and (27weeks, 800g) in group <1000g respectively. On average, subjects took 6 days to reach lipid infusion of 3g/kg/day. The mean triglyceride level for group ≥1000g was 1.88mmol/L, compared with 2.36mmol/L for group <1000g. There is a significant difference between birth weight and the triglyceride level (p=0.007) with an inverse correlation (r = -0.418). Bilirubin trends and platelet counts were not significantly correlated between the groups. None of the subjects developed cholestasis during the study.

**CONCLUSION:** Infants weighed ≥1000g show better tolerance to lipid infusion. Triglyceride level should be monitored earlier in infants weighed <1000g. Lipid is generally well tolerated without causing significant complications.

**KEYWORDS:** clinical pharmacy; Selangor; lipid; TPN; VLBW

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**PP11 (Poster)**

**INVESTIGATING DROPOUTS AND DISCONTINUATION MEDICINES BY POST 1MALAYSIA (UMP1M) AND DELIVERY**

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**INTRODUCTION:** Value added services offered by outpatient pharmacy department in MOH facilities which assists patients to obtain their medication efficiently. Nevertheless there are patients who had deregistered or terminated the services. Presence of dropouts while using these services may reflect weaknesses in the current system.

**OBJECTIVES:** To investigate the factors contributing to dropouts or discontinuation of Ubat Melalui Pos 1Malaysia (UMP1M) and Speed – Collect services provided by Outpatient Pharmacy Hospital Kajang.

**METHOD:** 72 subjects who are inactive for more than 6 months were involved in this study. Subjects were interviewed via phone call and feedbacks were sampled using interviewer administered questionnaire. Content and face validity were applied to examine the appropriateness of questions.

**RESULTS:** Out of 43 inactive patients in the Speed – Collect service, 12 patients (27.9%) has changed their follow – up to other places while three of the inactive patients (4.7%) had passed away. Reasons for discontinuation of the service were medication was not prepared despite earlier notification (28.6%), SMS were not replied (21.4%), unanswered phone calls and the medication could not be collected on the designated date (17.8%), limited time to collect the medications (14.2%) and transport problems (3.6%). On the other hand 56.3% of respondents indicated that reasons for discontinuation in UMP1M services were due to unreasonable fees and 37.5% claimed that they do not understand or does not have clear instructions when medications were delivered via postage, 25% indicated that the medication supply arrived later than the pharmacy appointment date and 6.3% indicated that medication received is defective, expired and medication is not collected at the post office/collection centre.

**CONCLUSION:** The current Speed – Collect and UMP1M requires further improsvement to increase patients’ satisfaction.

**KEYWORDS:** pharmacy practice; Selangor; UMP1M; value added services
PP12 (Poster)
A RETROSPECTIVE ANALYSIS OF THE ADDITION OF FENOFIBRATE TO STATIN THERAPY IN PATIENTS WITH COMBINED HYPERLIPIDAEMIA

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INTRODUCTION: Statins are the current drug of choice for the treatment of hyperlipidaemia while fibrates are for hypertriglyceridaemia. In patients with combined hyperlipidaemia, the addition of fenofibrate to statin therapy has been reported to be very effective in lowering both triglycerides (TG) and low-density lipoprotein cholesterol (LDL-c). However, safety of co-administration of statin with fenofibrate has been a great concern.

OBJECTIVES: This study aimed to analyse the efficacy and safety of the addition of fenofibrate to statin therapy in combined hyperlipidaemia treatment.

METHOD: This is a retrospective study involving 70 patients from cardiology clinic at Hospital Serdang with a diagnosis of combined hyperlipidaemia. These patients were assigned accordingly to their statin group. The effect of treatment on Total Cholesterol (TC), LDL cholesterol, high-density lipoprotein cholesterol (HDL-c), and TG was recorded after 6 months of addition of fenofibrate. Moreover, Alanine Aminotransferase (ALT), Alkaline Phosphatase (ALP) & SerumCreatinine (SCr) were recorded to access the safety of combination therapy. Any side effect occurred during combination therapy were also recorded.

RESULTS: The addition of fenofibrate to simvastatin and atorvastatin was associated with significantly greater reduction in TG (23.32± 33.5%, p<0.001) as well as significantly greater increase in HDL-c (19.67± 25.04%, p<0.001). None of the patients experienced a clinically significant increase in hepatic liver transaminase and serum creatinine. No patient experienced clinical myopathy or rhabdomyolysis.

CONCLUSION: Combination of statin and fenofibrate is effective and safe for the treatment of patients with combined hyperlipidemia.

KEYWORDS: clinical pharmacy; Selangor; hyperlipidemia; statin-fenofibrate combination

PP13 (Poster)
ANTIBIOTIC USE IN THE OUTPATIENT DEPARTMENT AT DISTRICT HOSPITAL IN KEDAH

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INTRODUCTION: Antimicrobial resistance is currently a major global threat. Indiscriminate outpatient antibiotic use is known to facilitate the resistance development.

OBJECTIVES: To assess the antibiotics prescribing practices in the outpatient department of a district government-funded hospital.

METHOD: A cross-sectional, descriptive study was conducted at Hospital Sik, Kedah, Malaysia between May 2015 and July 2015. Prescriptions involving patients aged more than 12 years old were screened for percentage of antibiotic prescribed. Of these, prescriptions containing at least one oral antibiotic were analysed for antibiotic prescribing rate by diagnosis, proportion of selected antibiotics prescribed for specific diagnoses; and adherence to Malaysia National Antibiotic Guideline 2008 (NAG) using the World Health Organisation (WHO) Daily Defined Dose (DDD) methodology.

RESULTS: A total of 8,312 prescriptions which met the inclusion criteria were screened. Of these, 662 (7.96%) prescriptions contained at least one oral antibiotic. Forty-nine (7.4%) and seven (1.06%) of the antibiotic prescriptions were found to have no diagnosis recorded and illegible diagnoses respectively. Antibiotic prescribing rates for upper respiratory tract infections (URTI), skin or soft tissue infections (STI) and urinary tract infection (UTI) were n=289 (37.77%), n=143 (66.51%), and n=82 (83.67%) respectively. The most commonly prescribed antibiotic was erythromycin ethylsuccinate (31.72%), in which n=189 (87.9%) of the usage was for URTI. This was followed by cloxacillin (14.83%) and amoxicillin/clavulanate (11.75%). Good adherence to the dosage recommended by NAG based on the calculated DDD was observed for URTI, STI and UTI indications. However, for leptospirosis, doxycycline was prescribed longer than the NAG recommended duration. Moreover, some antibiotics were used for indications not stated in NAG, such as doxycycline for URTI.

CONCLUSION: This study did not detect any systematic non-adherence to dosage recommendations for URTI, STI and UTI. However, inappropriate antibiotic use was observed. Hence, there is an urgent need for antimicrobial stewardship programs in outpatient department of district hospital.

KEYWORDS: pharmacy practice; Kedah; antibiotic use; outpatient; district hospital
**PP14 (Poster)**

**DRUG PRESCRIBING PATTERN AND GLUCOSE CONTROL IN TYPE 2 DIABETES MELLITUS PATIENTS IN THREE CLINICS**

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**INTRODUCTION:** Prevalence of diabetes in Malaysia has increased almost twofold from 11.6% in 2006 to 22.6% in 2013.

**OBJECTIVES:** This study mainly aimed to assess the significance of drug prescribing pattern towards glycemic control in diabetes patients and to compare the glycemic control between patients who receive OHA alone, insulin alone, and combination of insulin and OHA therapy.

**METHOD:** This cross-sectional study was held in three Health Clinics which were Klinik Kesihatan Bachok, Klinik Kesihatan Balai and Klinik Kesihatan Mahligai. The data was collected from medical record of diabetic patients and filled into the data collection form. Chi-square test was performed to determine the relationship between groups of OHA alone, insulin alone, and combination of insulin and OHA therapy and the glycemic control.

**RESULTS:** The data comprised of 390 patients; 173 of male patients and 217 of female patients. The patients had a median age of 59 years old. Biguanides were the most commonly prescribed class of OHA (38.46%) followed by biguanides plus sulphonylureas (33.59%). Patients were mostly on OHA alone with 53.33%, followed by OHA plus insulin (40.26%) and insulin only (6.41%). Most of the patients had poor glycemic control (82.31%) whereas those with good glycemic control were only 17.69%. The median HbA1c level was 8.6%. Data analysis showed there was a significant difference between groups of OHA alone, insulin alone, and combination of insulin and OHA therapy and the glycemic control.

**CONCLUSION:** Our study showed that OHA is still the preferred choice over OHA and insulin or insulin only. In achieving optimal glycemic control, the efficacy of anti-diabetic drugs was only 17.69%; therefore intensification of current drug treatment as well as planning multiple drug intervention with lifestyle modification is necessary to prevent diabetic complications.

**KEYWORDS:** pharmacy practice; Kelantan; diabetes mellitus; prescribing pattern

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**PP15 (Poster)**

**TOBACCO-USE SURVEY AMONG HOSPITAL STAFF AND THEIR PERCEPTIONS TOWARD SMOKING CESSATION SERVICES**

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**INTRODUCTION:** In Malaysia, more than 10,000 Malaysians die from smoking-related illness every year. Most ironical and unfortunate fact is that healthcare providers also have a tendency to smoke.

**OBJECTIVES:** The aim of this study is to identify the prevalence of tobacco smoking among hospital staffs and their perceptions towards smoking cessation services.

**METHOD:** This study was conducted among male staffs working in Hospital Putrajaya by using self-administered questionnaire.

**RESULTS:** A total of 200 male staffs with the mean age of 29 years old were participated in this study. Majority of the respondents was Malay (80.5%) followed by Indian (9.5%) and Chinese (8%). Smoking prevalence was the highest among the least educated. 98% of respondents are aware of the dangerous of smoking, 92% recognizes the dangerous of second hand smoking while 68.5% agreed that the religion forbids smoking. As for attitude assessment towards smoking cessation programmes, 77% of them agreed that banning of smoking in public area while 70% imposing penalty will helps reducing smoking prevalence among Malaysians. Moreover, 65% of the respondents disagreed that smoking will makes them popular. Addiction to ciggerate is identified as the most challenging barrier towards smoking cessation (63%).

**CONCLUSION:** This study shows that 73% of the respondents are non-smokers meanwhile 13.5% of total respondents are smokers and ex-smokers respectively. There were no statistically significant difference (p > 0.05) of knowledge, attitude and perception among smoker, ex-smoker and non-smoker.

**KEYWORDS:** pharmacy practice; Putrajaya; cigarettes; healthcare providers
PP16 (Poster)
IMPORTANCE OF MEDICATION HISTORY ASSESSMENT BY PHARMACISTS IN REDUCING MEDICATION ERROR

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INTRODUCTION: Medication history assessment is an integral part of the medication reconciliation process which serves to screen for drug allergies, adverse drug reactions and to prevent prescribing errors, such as duplication or omission of medications. An accurate medication history during hospital admission will ensure continuity of care throughout the admission, especially in patients with comorbidities.

OBJECTIVES: This study aimed to evaluate the importance of pharmacist-acquired medication history assessment in reducing medication errors.

METHOD: A prospective cohort study was conducted in the medical wards over a four-month period which targeted newly admitted patients with at least one prescribed medication. Medication history was assessed using the Medication History Assessment Form within 24 hours or as soon after admission as possible. Comparisons were made between pharmacist-acquired medication history and in-patient prescription charts to detect discrepancies, which were then verified with physicians whether they were “intentional” or “unintentional”. Unintentional discrepancies were categorised as omission, commission, substitution, and dose- or frequency-related, after which the pharmacists would intervene appropriately. The potential severities of patient harm which could have been caused by unintentional discrepancies were classified to either “non-significant”, “significant”, “serious” or “life-threatening”.

RESULTS: A total of 390 patients were included in this study. Out of 990 discrepancies detected, 135 (13.6%) were unintentional. Over three quarters, n=107 (79.3%) of unintentional discrepancies were medication omission, followed by dosing errors, n=13 (9.6%). Among these discrepancies, n=119 (88.2%) were considered “significant” or “serious” but none were “life-threatening”. Of all pharmaceutical interventions done on unintentional discrepancies, n=112 (83%) were accepted and rectified accordingly.

CONCLUSION: Pharmacists play a vital role in medication history assessment which potentially reduces medication errors.

KEYWORDS: clinical pharmacy; Sarawak; medication history; medication reconciliation; medication error

PP17 (Poster)
CONVERSION OF BIOSIMILAR INSULINS: PATIENT PREFERENCE AND CLINICAL OUTCOMES

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INTRODUCTION: Biosimilar insulins were manufactured in different delivery pens with different features and designs. Therefore, patient’s preference and acceptability towards different insulin pens plays important factor in adherence to insulin injections and thus affecting glycemic control and treatment outcome.

OBJECTIVES: The study is aimed to evaluate patient’s preference for Novopen versus Insuman Allstar pen and their clinical outcomes when converting between biosimilar insulin in patients with type 2 diabetes mellitus (T2DM).

METHOD: This was a cross-sectional observational survey using validated questionnaires from published journals. All T2DM patients converted from Novopen to Insuman Allstar pen were conveniently sampled. Diabetes outcomes indicators were taken from patient’s medical record 4-6 months post conversion.

RESULTS: Majority of the patients preferred Insuman Allstar pen compared to Novopen in term of basic design (p<0.05). 75% claimed that Insuman pen is lighter and easier to carry compared to Novopen. In-depth technical survey revealed that 85.2% preferred Novopen due to ease of pushing down the injecting button (p<0.01) and 99.5% of patients were more confident with Novopen in the ability to set and administer the correct dose compared to Insuman Allstar pen (p<0.01). There was no statistically difference in patient’s HbA1C before (mean 8.98%; SD 1.73) and after (mean 9.08%; SD 1.94) conversion. The study reported no significant changes at pre and post conversion in terms of fasting blood glucose (mean 8.54mmol/L; SD 3.73 versus mean 8.48mmol/L; SD 3.53) and total daily dose of insulin (mean 80.18IU; SD 45.67 versus mean 80.95IU; SD 43.70).

CONCLUSION: Most patients preferred Insuman Allstar pen to Novopen in terms of basic design while in-depth technical usability survey revealed statistically significant preference towards Novopen. The study showed that there was no difference in glycemic outcomes when switching between biosimilar insulins.

KEYWORDS: clinical pharmacy; Putrajaya; insulin pens
PP18 (Poster)
A PROSPECTIVE STUDY ON FACTORS LEADING TO UNCONTROLLED DIABETES MELLITUS AMONG PATIENTS ADMITTED TO SEGAMAT HOSPITAL, JOHOR

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INTRODUCTION: Uncontrolled Diabetes Mellitus (DM) is related to various complications in terms of nephropathy, neuropathy, cardiovascular event, retinopathy and death. By identifying the commonalities among uncontrolled type II DM patients, the leading factors contributing to loss of glycemic control are able to be modified to reduce hospitalization incidence, morbidity, mortality rate and improve patients’ quality of life.

OBJECTIVES: This study is to identify the common factors of uncontrolled diabetes mellitus contribute to patient’s admission to hospital.

METHOD: This prospective study was done at Hospital Segamat for 6 months from Dec 2013 till May 2014. Any diabetic patients admitted to adult medical ward and ICU with uncontrolled DM were given questionnaires to find out the main common reasons leading to uncontrolled diabetes mellitus. Data was then analysed using chi-squared test.

RESULTS: A total of 74 patients were recruited and questionnaires collected shown that 73% of subjects are non-compliance to their anti-diabetic regimen with the main reason of forgetfulness (53%), afraid of pain (31%) and uncertain on administration methods (9%). In addition, it was found that patients who were previously counselled on insulin injection technique in their own mother tongue performed good demonstration technique, p<0.05. From lifestyle aspect, 76% patients did not comply with diabetic diet and only 8 patients exercise. Regarding patients’ awareness, 81% had poor awareness on diabetic complications and importance of glycemic control which related proportionally to their appointment with doctor in addition to blood glucose monitoring frequency, p<0.05.

CONCLUSION: There are several factors leading to uncontrolled diabetes mellitus including poor awareness on disease condition as well as SMBG, compliance, comorbidities and lifestyle modification. Further work involving implementation of education and modified specialized counselling session can be done to reduce the incidence of DM admission in Segamat Hospital.

KEYWORDS: pharmacy practice; Johor; diabetes mellitus

PP19 (Poster)
KNOWLEDGE IN THE PREPARATION AND ADMINISTRATION OF INTRAVENOUS MEDICATION AMONG NURSES IN SURGICAL WARDS AT RAJA PEREMPUAN ZAINAB II HOSPITAL, KELANTAN

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INTRODUCTION: Life threatening errors have been associated with intravenous (IV) medications.

OBJECTIVES: To assess the knowledge on the preparation and administration of IV medications among nurses in surgical wards at Hospital Raja Perempuan Zainab II.

METHOD: A cross sectional study was conducted by using self-administered validated questionnaire. The questionnaires consist of 2 parts namely, the knowledge in the preparation of IV medications and the knowledge in the administration of IV medications.

RESULTS: Regarding the knowledge in preparation of IV medications, it was found that more than 50% of the respondents answered correctly for general statement (statement 1 to statement 7). Similar findings were obtained regarding the knowledge in the administration of IV medications where respondent answered well in the general statement (statement 10, 11, 12 and 15) except for statement 14 in which 62.7% of nurses answered wrongly. Less than 50% of respondents obtained correct answer for calculation and dosing of IV medications.

CONCLUSION: It can be concluded that staff nurses in surgical wards who were involved in this study had an average level of knowledge in the preparation and administration of IV medication. Training programmes for staff nurses should emphasise on the skills in the calculation and dosing of IV medications.

KEYWORDS: pharmacy practice; Kelantan; intravenous administration
PP20 (Poster)
IMPACT OF HEALTH LITERACY TOWARDS THE UNDERSTANDING AND PREFERENCES OF PRESCRIPTION DRUG LABELS AMONG ADULTS AT OUTPATIENT PHARMACY SULTANAH BAHIYAH HOSPITAL

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INTRODUCTION: Literature on association between health literacy and understanding of prescription drug label is still scarce in Malaysia.

OBJECTIVES: This study aimed to examine the associations between patients’ health literacy level and socio demographic factors with understanding of prescription drug labels and label format preferences, respectively.

METHOD: Adult subjects were recruited from Outpatient Pharmacy HSB from June to August 2015. Their health literacy levels were assessed using Rapid Estimate of Adult Literacy in Medicine-Revised (REALM-R), Malay language version. Respondents were scored if they can correctly state the dose, frequency, and timing for five drug labels, with mean score calculated to represent understanding level. Their attentiveness to extra information on the labels and ability to correctly show the number of Tablet Amlodipine to take daily were also assessed. Finally they were asked on preference between two drug label formats – label A showed the dose and frequency, while label B showed how much drug to take at a specific time.

RESULTS: There were 208 respondents involved, who were mostly male, aged between 18-29 years old, of Malay ethnicity, secondary school educated, working in private sector, earning monthly household income between RM 1000-2000 and not on any medication. For each drug label, more than 85% respondents scored full marks of three, with mean score of 2.85 (SD 0.252), but most did not notice the extra information. Meanwhile, 97.6% were able to demonstrate the correct number of tablet Amlodipine to take daily. Majority respondents (56.2%) prefer label B because easier to comprehend. There were significant associations between each respondents’ health literacy level and socio demographic factors with understanding of prescription drug labels and label format preferences, respectively.

CONCLUSION: There is a need to improvise prescription drug label format so to highlight the extra essential information and to suit patients from different health literacy levels and socio-demographic backgrounds.

KEYWORDS: pharmacy practice; Kedah; health literacy; drug labels

PP21 (Poster)
EXPANDING ROLE OF OUTPATIENT PHARMACY: A PHARMACY CARE PROGRAMME

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INTRODUCTION: Medication wastage has a huge impact in terms of financial cost or environmental. Poor patient understanding of own medications was considered as the factor causing noncompliance which leads to medicine wastage.

OBJECTIVES: This study aimed to evaluate the effectiveness of medication card to improve patient’s knowledge on medications and the amount of cost saving achieved through drug reconciliation.

METHOD: An interventional study was conducted at the Outpatient Pharmacy Department, Hospital Sultanah Nur Zahirah from January 2014 to June 2014. Patients who fulfilled the following criteria were selected by convenient sampling: chronic diseases, on at least three medicines and with at least two months duration of prescription. A pocket-sized medication card containing patient’s demographic details, list of current medications and indications for each medication was prepared and given to patients during dispensing. Patient’s knowledge on own medications was determined by Dose, Frequency, Indication and Method of Administration (DFIT) score before and after the Pharmacy Care Programme. Cost saving was calculated by deducting cost of full supplied medications with cost of medications through this programme.

RESULTS: A total of 92 patients were included (male: 54.3%; mean age= 59 years old). Baseline means DFIT score was 75.14% and found to be significantly improved after the Pharmacy Care Programme (p< 0.001). A total of RM 2488.93 was saved through this programme. A total of 453 expired medications were identified which included anti-diabetics, anti-hypertensives and cardiovascular medication.

CONCLUSION: The introduction of Pharmacy Care Programme has significantly improved patient’s understanding on medications and has reduced the cost of medication supply. Hence, this programme can be implemented.

KEYWORDS: pharmacy practice; Terengganu; pharmacy care program, DFIT score, cost reduction
**PP22 (Poster)**

**ASSESSMENT OF CLINICAL OUTCOMES OF WARFARIN THERAPY IN TWO MODELS OF ANTICOAGULATION SERVICES**

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**INTRODUCTION:** Quality of anticoagulation control is commonly expressed by time spent in the therapeutic international normalized ratio range (TTR). It is important to ensure optimal outcome during therapy because the high variability of INR is associated with adverse outcomes.

**OBJECTIVES:** To assess the clinical outcomes of warfarin therapy in Warfarin MTAC and usual care clinic in Hospital Kajang.

**METHOD:** A cross-sectional study with 78 randomly sampled patients from physician (MOPD)- and pharmacist (MTAC)-managed anticoagulation clinics was carried out from May 2013 to May 2014. The primary outcome was the percentage of time patients’ INR was in the therapeutic range (TTR). Secondary outcomes were the percentage of time in therapeutic range within ± 0.2 units of the recommended range (expanded TTR), episodes of haemorrhagic and thromboembolic complications, patients’ compliance and defaulter rate.

**RESULTS:** The majority of warfarin patients were male patients (45.5% in MTAC vs. 64.4% in MOPD) with Malays patients as the main population. The TTR was 66.6% for MTAC and 45.5% for MOPD patients (p<0.001). The expanded TTR for MTAC was 79% and 55.8% for MOPD (p<0.001). There was no significant difference between MTAC and MOPD patients in terms of complications of warfarin therapy. The compliance score showed significant difference with MTAC patients scored 1.45 and MOPD patients scored 2.29 (p=0.002). The defaulter rate was significantly lower in MTAC (3%) vs. MOPD (22%) (p=0.038).

**CONCLUSION:** The pharmacist-managed anticoagulation programme achieved significantly better INR control as measured by the percentage of time patients’ INR values kept in both the therapeutic and expanded range, compliance score, and defaulter rate. It also offers a safe and effective programme that is important in a multidisciplinary setting with respect to growing service needs of patients.

**KEYWORDS:** clinical pharmacy; Selangor; MTAC WARFARIN; TTR; INR

**PP23 (Poster)**

**AWARENESS OF BREAST CANCER AMONG SURGICAL FEMALE PATIENTS IN SULTAN ABDUL HALIM HOSPITAL**

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**INTRODUCTION:** Breast cancer is the commonest cancer among women worldwide. About one in nineteen women in Malaysia are at risk, compared to one in eight in Europe and the United States.

**OBJECTIVES:** To assess patients’ knowledge of risk factors, symptoms and methods of screening of breast cancer. To determine their perception towards the disease treatment outcomes.

**METHOD:** A cross-sectional survey using validated self-administered questionnaire was conducted among 119 consecutive surgical female patients admitted from 1st of September 2015 to 8th of October 2015 in Hospital Sultan Abdul Halim, Kedah. Patients were required to answer 8 questions on demographic characteristics, 22 questions on knowledge of breast cancer and 5 questions related to their perception towards breast cancer treatment outcomes. Data was analysed using General linear regression and Spearman’s correlation with Statistical Package for Social Science (SPSS) version 20.

**RESULTS:** Mean (SD) age was 40.6 (15.1) years and majority of the patients were Malay, 106 (89.1%). Mean score for general knowledge, risk factors and symptoms of breast cancer were 50.2(24.0%), 43.0(22.9%) and 64.4(28.4%) respectively. Mean total knowledge score was 52.1(19.7%). 80(67.2%) and 55(46.2%) of patients were aware of self breast examination and clinical breast examination recommendations respectively. Generally, patients had positive perceptions towards breast cancer treatment outcomes. However, majority (59.7%) think that it is a long and painful process. Knowledge was significantly better among married patients with spouse (p=0.046), those with personal history of breast cancer (p=0.022) and with personal monthly income (p=0.001) with the coefficient of determination, R2=0.16. Spearman’s correlation test showed a significant positive relationship between monthly personal income and breast cancer awareness (r = 0.343, p <0.001).

**CONCLUSION:** Overall, awareness of breast cancer among patients is poor. Thus, there is a need for awareness programmes to educate women about breast cancer and to promote early detection of breast cancer.

**KEYWORDS:** pharmacy education; Kedah; breast cancer; risk factors; symptoms
PP24 (Poster)
QUANTITY AND QUALITY OF PATIENTS’ OWN MEDICATIONS BROUGHT DURING ADMISSION: A STUDY FROM DISTRICT HOSPITAL PERSPECTIVE

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INTRODUCTION: Patients’ Own Medications (POMs) is defined as the medications that patient brings into the hospital during admission to the wards. Local guidelines encourage the use of POMs if deemed suitable as it minimizes medication wastage, promotes budget saving and assists in the generation of more precise medication history that may improve prescribing accuracy. However, POMs are not necessarily to be re-usable and safe. To date, Malaysian data pertinent to the prevalence of patients who bring POMs during their admission and the inspection on the usability of POMs is scarce.

OBJECTIVES: This study was conducted to assess the quantity and quality of POMs brought to the hospital during admission. The association between patients’ sociodemographic data and the quality of POMs was also explored.

METHOD: A cross-sectional study was conducted among medical inpatients in Kluang Hospital. The quantity of POMs (number of patients who brought POMs upon admission and the number of POMs brought) and quality of POMs (intact packaging, storage, expiration date, physical or chemical deterioration and labelling) were evaluated by adapting structured data collection sheets. POMs that meet all the criteria on quality were regarded to be safe for in-hospital use.

RESULTS: From November 2015 to January 2016, 106 patients were recruited in the study and 327 POMs were assessed. In total, 60.4% (n=64) of patients brought POMs to the hospital. Of which, only 59.3% (n=194) of POMs were considered safe for in-hospital use. A significant association was observed between gender and the quality of POMs ($c^2 = 6.69; p=0.01$).

CONCLUSION: A moderate prevalence of patients brought their POMs upon admission and only half of the POMs were deemed safe for use. Incorporating proactive strategies to encourage patients to bring their POMs and establishing institutional policies to address the safe and efficient use of POMs is strongly indicated.

KEYWORDS: pharmacy practice; Johor; patients’ own medication; admission

PP25 (Poster)
ASSOCIATION BETWEEN KNOWLEDGE AND MEDICATION ADHERENCE AMONG HYPERTENSIVE PATIENTS IN RAJA PEREMPUAN ZAINAB II HOSPITAL, KELANTAN

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INTRODUCTION: There is an increasing trend on the prevalence of hypertension among the adult population aged 30 years and above in Malaysia from 32.9% in National Health and Morbidity Survey (NHMS) II to 42.6% in NHMS III survey. However, limited information is available with regards to patients’ knowledge on their hypertension treatment and attitude to treatment.

OBJECTIVES: The specific objective for this research is to identify the degree of hypertension-related knowledge and anti-hypertensive medication adherence among patients. Besides, it is to determine the association between patients’ knowledge on hypertension and anti-hypertensive medication adherence.

METHOD: A cross-sectional study was carried out with 117 hypertensive patients admitted in three medical wards in Hospital Raja Perempuan Zainab II, Kota Bharu. Besides demographic and disease related questions, two validated questionnaires (Hypertension Fact Questionnaire and 8-Items Morisky Medication Adherence Scale) were used for data collection.

RESULTS: Out of 117 patients, 78 patients (66.7%) had average knowledge of hypertension. However, 63 patients (53.8%) achieved poor adherence to anti-hypertensive regime. 19 patients out of the study showed good adherence to anti-hypertensive regimen. Correlation coefficient between total score of knowledge and total score of adherence was 28.3% ($p=0.001$), indicating a proportional association between knowledge and level of medication adherence.

CONCLUSION: Our study concluded that patients’ level of knowledge about hypertension was average and had poor adherence to antihypertensive regimen. Thus, educating patient about the benefits of antihypertensive medication and clarifying doubts regarding treatment regime should results in better adherence to antihypertensive medications.

KEYWORDS: pharmacy practice; Kelantan; knowledge; adherence; hypertension
INTRODUCTION: Malnutrition is an acute or chronic state of nutrition in varying degrees of malnutrition with or without inflammatory activity led to a change in body composition and diminished function. Nutritional support plays an integral part in the treatment and has a number of clinical benefits. Insufficient education and knowledge about nutrition was identified as the second major barrier for proper nutritional care.

OBJECTIVES: To evaluate the knowledge, attitudes and practices (KAP) toward nutrition support in Hospital Raja Perempuan Zainab II (HRPZ II) between healthcare providers.

METHOD: A cross-sectional study of doctors and pharmacists working at HRPZ II that were involved in nutritional support from October 2015 – January 2016 were conducted. A validated self-administered questionnaire was distributed to doctors and pharmacists through convenience sampling method.

RESULTS: Total of 117 respondents (57 doctors; 60 pharmacists) from various grades completed the questionnaire with response rate of 72%. 83 respondents were local graduates and 70.9% of respondents were less than 5 years in service. More pharmacists (93.3%) have a better knowledge than the doctors (80.7%) but statistically not significant. Local graduates have higher (85.5%) average knowledge compared to overseas graduate (67.6%). In addition, both pharmacists and doctors have ambivalent attitude toward nutrition support (46.7% vs. 52.6%). Significantly more doctors (91.2%) than pharmacists (70.0%) did screening patient’s nutrition status on admission.

CONCLUSION: Overall, both doctors and pharmacist showed average knowledge and ambivalence attitude toward nutrition support with good nutrition practice.

KEYWORDS: pharmacy practice; Kelantan; nutrition support; malnutrition

INTRODUCTION: Polymyxins are reserved for salvage therapy of infections caused by multidrug resistant Acinetobacter baumannii. Numerous studies have investigated on the efficacy and safety profile of polymyxins for multidrug resistant Acinetobacter Baumannii.

OBJECTIVES: This study describes outcomes including mortality and nephrotoxicity for patients with MDR Acinetobacter baumannii infections who were treated with colistin monotherapy with its associated risk factors.

METHOD: We retrospectively reviewed the medical records of patients with MDR resistant Acinetobacter infections who received colistin monotherapy from 2012 to 2016. The clinical, microbiology and history of antimicrobials data were collected. The risk factors for treatment failure were identified by logistic regression.

RESULTS: A total of 40 patients were included in the analysis. There were only 35% (n=14) of patients achieved clinical cure as defined by clinician-documented improvement in signs and symptoms of infections whereas 37.1% (n=13) of patients developed nephrotoxicity. APACHE II score was found to be an independent risk factor for mortality (OR=1.272; p=0.003) among all other risk factors such as age, impaired renal function, days of ventilation, diabetes, hypertension and sepsis were not found to increase the risk of mortality. Patients with comorbidity such as hypertension (OR=4.815; p=0.046) or diabetes (OR=1.272; p=0.034) have significantly higher risk of developing nephrotoxicity. Other risk factors such as age, impaired renal function, days of ventilation, and sepsis were not found to increase the risk of nephrotoxicity.

CONCLUSION: From this study it could not be concluded that mortality in patients treated with colistin was ineffective partly because a higher APACHE II score prior to treatment might affect patients’ prognosis. More samples may be needed to predict mortality and nephrotoxicity associated with colistin therapy.

KEYWORDS: clinical pharmacy; Selangor; polymixin; colistin; nephrotoxicity
PP28 (Poster)
ANTIBIOTIC SENSITIVITY PATTERN OF BACTERIA ISOLATED FROM ORTHOPAEDIC SURGICAL WARD IN KUALA KRAI HOSPITAL
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INTRODUCTION: Orthopedic and surgical infection are common in hospitals and emergence of high antibiotic resistance among bacterial pathogens has made the management of the infections difficult. It is known that specific therapeutic options mainly depends on data from antibiotic susceptibility tests.

OBJECTIVES: To determine the antibiotic sensitivity pattern of bacteria isolated from patients in orthopedic/surgical ward of Hospital Kuala Krai (HKK).

METHOD: A cross-sectional study was carried out based on reports of bacteria isolates from the ortho/surgical wards of HKK from January 2012 till December 2014. All samples were collected aseptically and plated right after the collection. The data was generated using “Whonet” software and analysed by SPSS Version 18.

RESULTS: Bacterial growth was seen in 707 of the patients and involved 778 of bacterial isolates. The most frequently isolated bacteria were Staphylococcus aureus (24.4%), Escherichia coli (16.8%), Pseudomonas aeruginosa (15.1%) and Klebsiella pneumonia (14.1%). Drug resistance of Staphylococcus aureus showed the highest rate towards Penicillin G while Escherichia coli and Klebsiella pneumonia had the highest rate to Co-Ttrimoxazole. Vancomycin remained as the most sensitive antibiotic towards MRSA while Meropenem had highest sensitivity towards Escherichia coli and Klebsiella pneumonia. Amikacin remain its absolute sensitivity towards Pseudomonas aeruginosa. Increasing resistant rate of gram negative bacteria was seen towards Cephalosporin but at a rate of <30%.

CONCLUSION: Staphylococcus aureus, Escherichia coli and Pseudomonas aeruginosa were then common isolated bacteria. Cephalosporin remains as the drug of choice in orthopedic and surgical infections due to its moderate resistance rate.

KEYWORDS: clinical pharmacy; Kelantan; antibiotic sensitivity pattern; orthopaedic ward; surgical ward

PP29 (Poster)
MEDICATION RECONCILIATION IN THE AMBULATORY PHARMACY SETTING IN HPSF MUAR
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INTRODUCTION: Medications are vital for patient care; however, they may result in fatal mortality and morbidity when taken incorrectly. Medication reconciliation is a format process of creating the most complete and latest list of patients’ current medications and comparing the list to the patients’ prescriptions, records or medication orders.

OBJECTIVES: The goal of this study is to describe medication error incidence and the prevalence of prescribed medication discrepancies and patient regimen differences.

METHOD: This cross-sectional study involves a descriptive study of prescribing practises. A systemic sampling method was adopted where every 10th of the prescriptions form Medical Outpatient Clinic was collected. A total of 300 prescriptions were studied. All the patients’ details and relevant information including the demographic data, visit history, past medication history, medication adherence and other relevant data were recorded in the Data Collection Form.

RESULTS: Among 300 prescriptions, 146 were identified with medication discrepancies. From the discrepancies, 38 were confirmed with medication errors. 10 errors were identified in patient’s new prescriptions, 3 errors were identified in Patient’s record book and 5 other errors were found in the computerized dispensing system. Meanwhile, the remaining 20 errors consist of patient’s own mistakes. There were no statistically significant differences between medication discrepancies with prescribers experience (p=0.156), patients’ adherence level (p=0.694), motivation level (p=0.670) or even knowledge scale (p=0.565).

CONCLUSION: The prevalence of medication discrepancies in an ambulatory pharmacy setting in HPSF Muar is 48.7%. Despite the insignificance of the results, this study reflects the presence of medication errors in ambulatory care setting and due to the vulnerabilities for medication errors in the hospital, medication reconciliation rises to be a major component of safe patient-care. Pharmacists, often being the last healthcare professionals seen by patients have a major responsibility in preventing medication errors.

KEYWORDS: pharmacy practice; Johor; medication reconciliation; ambulatory pharmacy; medication discrepancies
REVISITING MEDICATION ADMINISTRATION ERRORS IN MEDICAL WARD AT MELAKA HOSPITAL

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INTRODUCTION: Medication errors commonly detected and stopped in the early stages of medication processing (prescribing and preparing the medication). However, medication administration itself has less safeguard mechanisms against errors.

OBJECTIVES: The study aimed to examine the frequency, type and factors contributing to medication administration errors.

METHOD: Prospective, non-intervention study using the disguised direct observation technique was used for detecting medication administration errors in six medical wards in a public hospital. All drugs supplied from ward pharmacy were screened and corrected before reached the ward. The observation was made by clinical pharmacist in the designated wards during administration of drug on three drug rounds per day for the duration of 14 working days from September to December 2014. Multiple logistic regressions were applied to determine the associated factors in error rate.

RESULTS: The current administration rate is 11.5% (76/659), was lower compared to the previous study in 2009 (48%). However if time error is excluded, then the rate is higher (9.3%) as compared to 2009 (4.9%). The most frequent drug administration errors by category were technique error, 53.9% (41/76) followed by wrong time errors, 19.7% (15/76), and omission errors, 18.4% (14/76). In multivariate analysis, ward, Anatomical Therapeutic Chemical (ATC) class, and number of patient under nurse’s care were associated factors to MAE rate.

CONCLUSION: Higher administration error rate (nearly 1 in every 9 doses) in the current study indicates the need to review the current drug administration procedures by the nurses. The higher percentage of identified errors must be viewed seriously and the collaboration among all healthcare professionals is essential to ensure consistent quality of care and safety of patients.

KEYWORDS: pharmacy practice; Melaka; medication administration errors; medication errors

ASSESSMENT OF ADHERENCE AND BELIEF AMONG HIV PATIENTS TO HIGHLY ACTIVE ANTIRETROVIRAL THERAPY (HAART) IN RVD MTAC TUANKU FAUZIAH HOSPITAL

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INTRODUCTION: Beliefs about medications and perception on their benefits have a high influence on the patients’ medication taking behaviour.

OBJECTIVES: This study was to determine the relationship between the patients’ belief to HAART and the level of control of their disease and their adherence.

METHOD: A cross sectional study was carried out over 17 week’s period (13 May 2015 till 2 September 2015) at the Retroviral Medication Therapy Adherence Clinic. Morisky Medication Adherence Scale (MMAS-8) and Beliefs about medicines questionnaire (BMQ) were used to measure patients’ adherence and belief towards their medications.

RESULTS: A total of 80 patients met the criteria with the response rate of 74%. There was a statistical significant moderate negative correlation between BMQ specific necessity scores and BMQ specific concern scores. Only 16% of patients had low adherence to their HAART which was in conjunction with the 17% of the patients who did not have their HIV viral counts under controlled. A statistical significant difference was found between the patients’ BMQ specific necessity scores and the level of control of their disease (HIV viral load).

CONCLUSION: The patient’s beliefs about the necessity of their HAART would lead to good adherence and satisfactory disease control. They would become less concerned about the potential adverse effects if they had positive beliefs in their medications.

KEYWORDS: pharmacy practice; Perlis; RVD MTAC; BMQ; MMAS-8

PP32 (Poster)
DEVELOPMENT OF IN-HOUSE RADIOLABELLING PROCESS OF LUTETIUM-177-LABELLED SOMATOSTATIN ANALOGUES USING HEPES BUFFER SYSTEM

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INTRODUCTION: Peptide Receptor Radionuclide Therapy (PRRT) with Lutetium-177 (¹⁷⁷Lu)-labelled somatostatin analogues are now the therapy option for patients who have failed to respond to conventional medical therapy. The somatostatin analogues being used for this therapy are DOTATATE and DOTATOC, all of which are labelled via the DOTA chelator to ¹⁷⁷Lu.

OBJECTIVES: Radiolabelling and purification of these radiopharmaceuticals can successfully be carried out manually in the laboratory. Recent reports have claimed a superior performance of HEPES buffer in comparison to alternative buffer systems for ¹⁷⁷Lu labelling in aqueous media. In this paper we report radiolabelling study on Lu³⁺/HEPES system (HEPES=N-2-hydroxyethylpiperazine-N'-2-ethanesulfonic acid) performed with the aim of elucidating a potential contribution of HEPES in the ¹⁷⁷Lu radiolabelling process.

METHOD: Small-scale radiolabelling (5.32 – 8.99 mCi) of ¹⁷⁷Lu-DOTATATE (n=2) and ¹⁷⁷Lu-DOTATOC (n=2) were performed by adding approximately 125 mcg of peptide to a ¹⁷⁷Lu chloride solution. The solution was buffered by HEPES buffer to pH 4.0 and was heated at 100°C for 20 minutes. As comparison, a duplicate radiolabelling solution (3.33 – 3.71mCi) of ¹⁷⁷Lu-DOTATATE (n=2) and ¹⁷⁷Lu-DOTATOC (n=2) were prepared using sodium acetate (NaOAc) buffer system (buffered to pH 5.0). Radiochemical purity was assessed by radio-thin-layer chromatography systems.

RESULTS: Radiochemical purity of ¹⁷⁷Lu radiolabelled complexes using HEPES and NaOAc buffer system was 98.25% (n=4) and 98.93% (n=4), respectively.

CONCLUSION: Radiolabelling process of ¹⁷⁷Lu with somatostatin analogues by using HEPES buffer system was comparable with NaOAc buffer system. HEPES buffer system appears suitable for use in clinical preparations of ¹⁷⁷Lu radiolabelled complexes in our institution.

KEYWORDS: pharmacy education; Putrajaya; lutetium; radiolabelling

PP33 (Poster)
ADHERENCE TO DISEASE MODIFYING ANTI-RHEUMATIC DRUGS IN RHEUMATIC ARTHRITIS PATIENTS AND ASSOCIATED FACTORS FOR NON-ADHERENCE

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INTRODUCTION: The adherence rate of Rheumatoid Arthritis (RA) patients to Disease Modifying Anti-Rheumatic Drugs (DMARDs) in Malaysia is unknown. Previous studies in Caucasian populations showed adherence rates ranging from 20% to 50%.

OBJECTIVES: To assess adherence rate and factors associated with non-adherence to DMARDs in RA patients in Hospital Tuanku Ja’afar Seremban (HTJS).

METHOD: A cross-sectional study was conducted with RA patients who presented to Rheumatology Clinic, HTJS between October to December 2014. Assessment tools were Compliance Questionnaires of Rheumatology (CQR), Health Assessment Questionnaire Disability Index (HAQ-DI) and Beliefs in Medicine Questionnaires (BMQ). Disease activities were assessed via DAS28-ESR.

RESULTS: A total of 123 completed questionnaires were analysed. Based on DAS28-ESR, n=65 (52.8%) of the respondents had moderate disease activity with mean (SD) of 4.40 (±1.40). The HAQ-DI score median (IQR) was 0.75 (1.25) and the median (IQR) for duration of disease was 8 (7). Adherence rates to DMARDs in our study were n=6 (149.6%). The correlations between adherence, HAQ-DI (r = -0.20) and BMQ specific (r = -0.19) are weak but both are statistically significant (p<0.05). Age, gender, ethnicity, education level, marital status, employment status, household income, number of DMARDs, disease duration and disease activity showed no significant correlation to adherence.

CONCLUSION: The adherence rate in our patients was comparable to Caucasian populations and non-adherence was associated with poor functional status and negative belief in necessity of medication.

KEYWORDS: pharmacy practice; Negeri Sembilan; adherence; rheumatoid arthritis; DMARDs
PP35 (Poster)
LEVEL OF PATIENT’S KNOWLEDGE ON WARFARIN THERAPY AND ANTICOAGULATION CONTROL IN ALOR GAJAH HOSPITAL

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INTRODUCTION: Warfarin is an anticoagulant agent used in the prevention and treatment of atrial fibrillation, prosthetic heart valves and transient ischemic attacks. This study was done to investigate patient’s understanding on their warfarin therapy and impact of knowledge on treatment efficacy.

OBJECTIVES: To determine patients’ knowledge on warfarin therapy as well as to determine the correlation between patients’ level of warfarin therapy knowledge and their INR control.

METHOD: A cross-sectional study was done at Pharmacy Hospital Alor Gajah, Melaka from April 2015 to September 2015. Study involved 55 patients who were on warfarin therapy and recruited to do a self-administered questionnaire (Oral Anticoagulation Knowledge test, OAK) in English or Malay version. Patients’ warfarin knowledge was categorised as high (>75%), moderate (50-75%) and poor (<50%). Meanwhile INR stability control was calculated by percentage of number visit where INR within range divided by the total number visits to clinic and was represented by poor control (<60%), moderate control (60-75%) and good control (>75%). The correlation between patient’s warfarin knowledge and INR control was determined by Spearman correlation analysis.

RESULTS: The mean (SD) of OAK score was 11.80 (2.5). Overall, 43 patients had moderate warfarin knowledge while 9 patients had poor knowledge and only 3 patients had high knowledge. On the other hand, 37 patients had poor INR control, while 15 patients had good INR control. Analysis showed no significant correlation between patient’s warfarin knowledge and INR control.

CONCLUSION: Most of the patients in Hospital Alor Gajah who were on warfarin therapy had moderate knowledge on warfarin as well as having poor INR control. No significant correlation was observed between patient’s warfarin knowledge and their INR control. There are still many improvements that need to be done and important points to be emphasised when counselling patients on warfarin therapy.

KEYWORDS: pharmacy practice; Melaka; warfarin; knowledge; anticoagulation control

PP34 (Poster)
EVALUATION ON KNOWLEDGE AND PERCEPTION REGARDING FOOD-DRUG INTERACTION AMONG PATIENT AT ROMPIN HEALTHCARE CLINICS

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INTRODUCTION: Food and drug interactions may increase or reduce the drug effect. The interaction affects the drug bioavailability and varies according to the dosage, age, sex and overall health conditions.

OBJECTIVES: To assess the knowledge and perception regarding food-drug interaction among patient as well as to determine the source of information and identify appropriate medium for public health promotion regarding food-drug interaction.

METHOD: A cross-sectional multi-centered study was conducted at the Pharmacy of Pejabat Kesihatan Daerah Rompin. A validated, self-administered questionnaires were given to the respondent while they wait for their medications to be prepared. Sample was selected using convenience sampling. The minimum and maximum score for knowledge and perception are 0-14 and 0-50. The association was checked by Chi-square and Fisher’s exact test. The Spearman’s correlation was applied and Cohen’s Criteria was used to interpreted correlation. P value of 0.05 or less was taken as statistically significant.

RESULTS: A total of 400 respondents, 166 male (41.5%) and 234 (58.5%) female responded to the questionnaire. Out of the maximum possible score of 14, the mean knowledge was 6.985 (SD±0.385) and respondents scored 50% on knowledge score. Out of the maximum possible score of 50, the mean perception score was 37.59 (SD±2.42) and respondent scored 75% on perception. There was a significant, positive and fair correlation for knowledge and perception (r=0.339, p<0.001). The most common source of information among the respondent are pharmacy advertisement (33%) and newspaper (24.3%). An appropriate medium for promotion; healthcare campaign (33.5%) and educational campaign (31.8%) were suggested by the respondent to promote food-drug interaction among public.

CONCLUSION: Respondents have good knowledge and positive perception regarding food-drug interaction. A good source of information and promotion helps to create understanding and awareness regarding food-drug interaction among society.

KEYWORDS: pharmacy practice; Pahang; food-drug interaction; knowledge; perception
QUALITY OF CARE IN PATIENTS DISCHARGED FROM WARFARIN CLINIC TO PRIMARY CARE UPON STABILIZATION OF WARFARIN THERAPY

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INTRODUCTION: High patient volume has led to many patients being discharged from hospital-based warfarin clinics to primary care. This study was conducted to compare the quality of anticoagulation care when patients were transitioned from an integrated pharmacist-physician care to primary care upon stabilization of warfarin therapy.

OBJECTIVES: The primary outcome was to evaluate the differences in time in therapeutic range (TTR) of international normalized ratios (INRs) over a 3-month period in both facilities. The secondary outcome was to assess the incidences of major bleeding, major thromboembolism occurrences and hospitalization rates.

METHOD: A cross-sectional study was conducted in Warfarin Clinic, Hospital Tuanku Ja’afar Seremban (HTJS) and Klinik Kesihatan Seremban (KKS) from September 2014 to April 2015. All patients who were eligible for discharge and consented to the study were included in the study, whereupon data was collected for 3 months in each facility.

RESULTS: Of the 33 patients recruited, only 16 completed the study. Significant reduction in anticoagulant control was observed upon transitioning from warfarin clinic (Median TTR=100%) to primary care (Median TTR=68%) (p<0.05, Wilcoxon Signed-Rank Test). Using cross tabulation analysis, 94% of the patients had TTR values more than 75% (extremely good control of INR) and 6% had TTR values between 60-75% before transitioning from warfarin clinic to primary care. After transition, 44% of the patients had TTR values more than 75%, with 19% having values between 60-75% and 38% having values less than 60%, indicating a drop in anticoagulation control. There were no reported major bleeding, major thromboembolism occurrences and incidences of hospitalization in both groups within the 3 months respectively.

CONCLUSION: In conclusion, transition of patients from warfarin clinic to primary care was associated with a significant reduction in INR control with no reported major bleeding, major thromboembolism occurrence and hospitalization.

KEYWORDS: pharmacy practice; Melaka; anticoagulation care; integrated pharmacist-physician care; primary care
NC1 (Poster)
DEVELOPING A MODEL ON CONSUMERS’ PURCHASE AND USE OF HEALTH PRODUCT: A GROUNDED THEORY APPROACH (CONBE-HEPRO)

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INTRODUCTION: Healthcare industry is among the most dynamic and rapidly growing industries in Malaysia. Due to the enormous consumption of healthcare products, the Ministry of Health (MOH) Malaysia has developed a comprehensive National Strategy for Quality Use of Medicines-Consumers (QUM-C) to promote QUM through effective self-care practices. Notwithstanding the effort, little is known about consumers’ purchase and use of healthcare products. Hence, the what and why of acquiring these products remain a matter requiring serious attention.

OBJECTIVES: Due to the lack of empirical findings pertaining to the subject matter in the Malaysian context, the present study uses the grounded theory approach to develop a model to articulate the underlying factors of such purchase and use.

METHOD: Qualitative interview was administered using theoretical sampling strategy to ensure that theoretical saturation was achieved with the sample. Pharmacy Enforcement Division officers were trained to perform interview, transcription and analysis. 120 Malaysian consumers were interviewed in the first phase and 48 in the second. All interviews were recorded, transcribed and analysed via open, axial and selective coding procedures.

RESULTS: The findings reveal that the evaluation of product attributes is the determinant of purchase and use. Such effect, in turn, is moderated by personal factor, such as personality, and facilitating conditions, such as mode of delivery. The need for healthcare products and knowledge about them are constructed as the antecedents in the model. Additionally, personal experience and recommendation after use as well as the preceding factors are found to be recursive.

CONCLUSION: The study proposes a holistic model which explicates the antecedents of purchase and use of healthcare products. It provides insights into the acquiring of both registered and unregistered products. By making known actual behaviour in contemporary setting, it serves as an essential guideline to policy makers and relevant stakeholders to perpetuate QUM-C efforts.

KEYWORDS: health product; consumer behaviour; the grounded theory

NC2 (Poster)
A NATIONAL POINT PREVALENCE STUDY OF ANTIBIOTIC UTILISATION AMONG HOSPITALS IN MALAYSIA

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INTRODUCTION: Appropriate use of antibiotic is one of the control measures to limit the emergence and transmission of antibiotic resistant bacteria. Limited data is currently available to describe recent antimicrobial prescribing practices in Malaysia.

OBJECTIVES: The aims of this study is to identify the prevalence of antibiotic utilization in hospitalized patients, in Malaysia, and also to further describe the antibiotic prescribing practices.

METHOD: This is a multi-centre, one-day point prevalence study, involving 14 state hospitals and 5 tertiary hospitals across Malaysia. All patients admitted on the survey day, treated with antibiotics, were included. A data collection form was used to obtain required information on prevalence and antibiotic prescribing practices.

RESULTS: A total of 11,801 patients were reviewed. Of these, 5,169 patients (43.8%) were receiving antibiotic, with 74.2% of them received single antibiotic. Three commonly prescribed class of antibiotic were cephalosporin (29.2%), ß-lactam/ß-lactamase inhibitor (25.0%) and penicillin (14.6%). Of the prescribed antibiotics, 79% were for empiric, while 14% were for definitive treatment. The use for surgical and non-surgical prophylaxis was minimal, 5% and 2% respectively. For the empiric treatment (n=4,914), 72% had a clinical sample sent prior to antibiotic initiation.

CONCLUSION: The prevalence of antibiotic prescribed in the study population can be considered as high. Overall, the antibiotic prescribing practices was similar to other regions. However, a larger scale study on the appropriateness of antibiotic prescribing practices is required, to provide further information, which can assist in quality improvement on antibiotic prescribing practices for health-care facilities across Malaysia.

KEYWORDS: clinical pharmacy; Malaysia; prevalence; antibiotic utilisation
NC3 (Poster)
IMPACT OF PHARMACIST-MANAGED CLINIC ON MEDICATION ADHERENCE AND GLYCAEMIC CONTROL OF TYPE 2 DIABETES PATIENTS IN MALAYSIA: A RANDOMISED CONTROLLED STUDY

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INTRODUCTION: Diabetes Medication Therapy Adherence Clinic (DMTAC) is an ambulatory care service which emphasises on diabetes management operated by pharmacists in the Ministry of Health (MOH) Malaysia.

OBJECTIVES: The purpose of this 9 months randomized-controlled study is to evaluate the impact of pharmacist-managed Medication Therapy Adherence Clinic (MTAC) on medication adherence and glycemic control in adult patients with Type 2 Diabetes in 15 MOH hospitals.

METHOD: A total of 393 patients with type 2 diabetes mellitus, poor medication adherence (Modified Morisky Medication Adherence Score, MMMAS < 6) and poor glycemic control (HbA1c ≥ 8.0%) were recruited. The intervention group (standard care plus DMTAC services) (n=187) and the control group (standard care only) (n=206). Patients enrolled in the intervention group were scheduled with 4 DMTAC visits within 8 months. Outcomes were measured at baseline and at 9 months (pre and post DMTAC).

RESULTS: MMMAS of intervention group increased significantly by 2.3 scores (p<0.01) versus 0.74 scores (p<0.902) in controlled group. Intervention group also showed a significant reduction of HbA1c by 1.0% (p<0.01) compared to 0.02% (p=0.902) among control group. An increased of MMMAS by 1 score reduced HbA1c by 0.174% (p=0.032).

CONCLUSION: Study showed that pharmacist-managed DMTAC resulted in significant improvement in medication adherence and glycemic control of type 2 diabetes patients.

KEYWORDS: clinical pharmacy; Malaysia; pharmacist; glycaemic control; diabetes medication therapy adherence clinic

NC4 (Poster)
The Development and Validation of Anticoagulation Knowledge Questionnaire: A Rasch Analysis

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INTRODUCTION: Almost a decade since the validation of anticoagulant questionnaire took place, no instrument was developed in Malaysia to assess anticoagulant knowledge (AK).

OBJECTIVES: Therefore, this study aimed to develop and validate an instrument to assess patients’ knowledge about anticoagulant (KAC-Q) among Malaysia population.

METHOD: The content validity index (CVI) was calculated to ensure the content validity. Internal consistency reliability was assessed using Kuder–Richardson 20 (KR-20) and test-retest reliability. The construct validity was assessed using discriminant validity and correlation between the patients’ knowledge and time within therapeutic range (TTR). A Rasch model (RM) was used to assess KR-20, the difficulties of the KAC-Q and the ability of patients to answer the KAC-Q. A SPSS was used to test the validity, test-retest reliability and the correlation.

RESULTS: Patients (n=107), 70% male and mean ± SD age of 60.45±9.04 years. All items have I-CVI=1.00 and met the acceptable value of CVI. The KAC-Q had good reliability (KR-20=0.77) and high items reliability (KR-20=0.93). Fifty-six patients were repeated the KAC-Q test within 7 to 35 days and test–retest reliability was acceptable, with an intraclass correlation coefficient of 0.93. The 40 items of KAC-Q were easy to endorse and patients have higher chance to answer it correctly. The KAC-Q have sufficient items to measure the AK. All subscales of KAC-Q had low correlation (r<0.9) and met the requirements for discriminant validity. A strong positive correlation between the level of patients’ knowledge and the TTR (rs=0.61) supported the validity of KAC-Q.

CONCLUSION: The KAC-Q appears to fit the RM and in conclusion, the 40 items of KAC-Q have good reliability and good construct validity and are able to determine the levels of patients’ knowledge about anticoagulant.

KEYWORDS: anticoagulation, knowledge, validation, rasch model
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