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Salam Sejahtera and Salam 1 Malaysia,

It is with great satisfaction that I write this foreword to the 2nd edition of Compendium of Abstracts for Pharmaceutical Services Division, Selangor State Health Department. My heartiest congratulations to the Research and Development (R&D) Committee for their tireless effort in compiling abstracts of various research completed by pharmacists in Selangor from 2014-2015.

It is encouraging to see a remarkable amount of abstract in this compendium as they reflect the commitment of our pharmacists being expert in their respective fields. It is only when research findings are disseminated that experiences can be shared and learnt for greater outcome for the public and nation.

This is in line with one of the focus areas being highlighted in the 11th Malaysia Plan 2016-2020, which is ‘Achieving Universal Access to Quality Healthcare’. This is where R&D will be seen being intensified to promote innovation and quality research. I therefore urge researchers to take advantage of this trend and conduct research of high standards in order to meet universal excellence.

I wish to take this opportunity to thank Mdm. Norhaliina bt Sulaiman, the chairperson of the R&D committee and her committee members for their dedication in making this compendium successful. To all the researchers involved, thank you for your contribution towards quality research and well done for the tremendous work.

For closing, I hope this will further inspire and stimulate research among pharmacists in which new policies could be formulated for the betterment of pharmaceutical services in the country.

Thank you.
MESSAGE FROM CHAIRPERSON OF RESEARCH & DEVELOPMENT COMMITTEE, PHARMACEUTICAL SERVICES DIVISION SELANGOR STATE HEALTH DEPARTMENT

Assalamualaikum warahmatulLahi wabarakatuh and Salam 1 Malaysia

For the year 2014 and 2015, we have received an overwhelming response in abstract submission to be presented in conferences. Our Scientific Subcommittee had diligently reviewed all abstracts before submission. Accepted studies were presented in 54 presentations at national conferences and 2 presentations at international level. It is so rewarding that our pharmacists from Hospital Tengku Ampuan Rahimah won 2nd prize in oral presentation in Selangor state Research Day 2015, and pharmacists from Hospital Serdang and Selayang won for the Best Poster Award in 12th MPS Pharmacy Scientific Conference 2015. These affirm the commitment and devotion of our fellow pharmacists in Selangor to produce researches that are of good quality.

To bring our research activities to greater heights, we compiled the abstracts into this compendium. We believe that the findings of these studies will assist decision makers and stakeholders in formulating sustainable solution to address current issues in our healthcare system, particularly in pharmaceutical services. It is also our hope that these researches can be applied into practice for better patient management.

On behalf of the Research and Development (R&D) Committee, I would like to thank the State Deputy Director of Health, Pharmaceutical Services Division, Selangor State Health Department for the support and constant motivation given, the Hospital Directors and District Health Officers for their continuous support, and last but not least the Director of Selangor State Health Department for the patronizing our research activities. My greatest gratitude and credits goes to the R&D Committee members for contributing their invaluable time and bending efforts in making this compendium a great milestone for Selangor for the year 2016. To the researchers, you have my utmost respect.

Thank you.

Mdm. Norhalina bt Sulaiman
Chairperson of R&D Committee
Pharmaceutical Services Division
Selangor State Health Department
## MAIN COMMITTEE

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A STUDY ON DISCHARGE MEDICATION DELIVERY TIME IN IN-PATIENT PHARMACY, HOSPITAL AMPANG

N.S. Pingi, H.M Tan, N.H Azizan, N.A Abu Hassan Shaari
Pharmacy Department, Hospital Ampang

INTRODUCTION: Time of delivering discharge medication in Hospital Ampang has not achieved the standard that has been set in Piagam Pelanggan; which is within 2 hours according to several audit done for every years.

OBJECTIVES: To obtain baseline data for comparison in Phase II of the research. To identify the time taken for each delivery of discharge medication processes and the factors that causes delays of delivery time of discharge medication. To suggest interventions to be implemented in Phase II of the research. To assess the result from implementation of the interventions in Phase II and compare with the baseline data taken from Phase I.

METHOD: The study can be divided into two phases: Phase I for which the baseline data will be collected (pre-implementation); Phase II for which the data of post implementation will be collected. The actual data collection period is a total of 10 working days (two consecutive weeks, with only working days included) in each phase, in order to yield the differences of the medication delivery time on different days (Monday-Friday). At the end of the data collection, all the data will also be combined and to be analysed using Statistical Package for the Social Sciences (SPSS) software.

RESULTS: Percentage of Total Delivery Time (TDT) reach target within 2 hours; phase I (25.08%); phase II (35.50%) and Percentage of Time Taken for Pharmacy Process within 2 hours; phase I (34.14%); phase II (49.85%). Both data are significant difference with P value < 0.05 or 95%. The improvement are significant for all processes with P value <0.05 of 95% confidence level except Authorization & Dispensing which has P value of 0.860 & 0.456 respectively.

CONCLUSION: Overall, time delivery of medication is improved. However, It doesn’t achieved target which is less than 2 hours.

ID No.: NMRR-15-1138-931-25885

EVALUATION OF MEDICATIONS COMPLIANCE AMONG THALASSEMIA PATIENTS RECEIVING IRON CHELATION THERAPY: A SINGLE CENTRE STUDY

S.H. Io, S.T. Chong, Zainol Abidin NM, Shamsuddin FI, Jamaluddin NAS
Pharmacy Department, Hospital Ampang

INTRODUCTION: Compliance to prescribed medications is a key dimension of healthcare quality. Patient’s compliance towards chelation therapy is essential to improve morbidity and mortality.

OBJECTIVES: The purpose of the study is to evaluate medication compliance among thalassemia patients receiving iron chelation therapy.

METHOD: Thalasemia patients were identified from Thalassemia Registry and were studied retrospectively from the index date of 1st January 2014 until 31st December 2014. Medication adherence was estimated using Medication Possession Ratio (MPR) across multiple prescription refills and was expressed as a percentage.

RESULTS: There were 160 thalasemia patients with continuous drug claim in 2014. The mean MPR for deferasirox was 55.68%, deferiprone was 51.78% and desferrioxim was 52.32%. Mid age patients (both 24-54 years and 55-64 years group) were more compliant to treatment than older and younger patients (18-24 years and >64 years) with $\chi^2 (3, N = 160) = 251.95, p = < 0.001$. Besides, the ferritin levels and patients’ adherence were found to be inter-correlated with $r(158) = 0.123, p = < 0.05$. However, no significant difference in the mean adherence between groups regardless of types of chelators, number of chelators taken, number of medication taken and gender. Nevertheless, the study is limited by accuracy of data input. The medication in possession by the patient has shown no guarantees of medication administration.

CONCLUSION: Our study highlights the need of more involvement of multidisciplinary team in the management of this disease. For future purpose, a closer monitoring of iron chelator compliance in needed such as pill counting and thalassemia medication diary.

ID No.: NMRR-15-1099-25850
CHEMOTHERAPY INDUCED NAUSEA AND VOMITING IN OUT-PATIENT SETTING

PK Chong, PL Chin, A Hakim, SP Wong.
Pharmacy Department, Hospital Ampang

INTRODUCTION: Chemotherapy-induced nausea and vomit (CINV) is one of the adverse events of chemotherapy. In the outpatient setting, CINV in patients who return home may go undetected by healthcare providers, impacting quality of life (QoL) and potentially affect future compliance.

OBJECTIVES: To determine the frequency and severity of CINV among Haematology patients receiving moderate to highly emetogenic potential chemotherapy and to ascertain the effectiveness of emesis control as well as its’ impact on QoL.

METHOD: Patients were recruited during admission to Daycare Hematology within a period of 3 months (Jan-March 2015). The frequency and severity of CINV and the consumption of antiemetic were recorded in a patient diary (from Day 1 to Day 7) which was adapted from the MASCC Antiemesis Tool (MAT). QoL assessment was carried out by using Osaba Nausea and Emesis Module (ONEM).

RESULTS: Out of 92 patients assessed, 58% of patients received ABVD whereas 42% received R-CHOP. The severity of CINV were significantly associated with younger age (p=0.007) and those receiving ABVD regimen (p<0.0001) during both the acute and delayed phases. Nausea and vomiting were 71.7% and 32.6%, 66.3% and 27.2%, and 5.4% and 1.1% in the acute, delayed and anticipatory phase respectively. Patients had an ONEM score of 36.12, 27.29 and 3.62 in the acute, delayed and anticipatory phase respectively. 63% of patients were prescribed with antiemetics for acute CINV. These included oral granisetron 1mg (41.3%), oral metoclopramide (19.5%), oral aprepitant (1.1%), and combination of oral granisetron and dexamethasone (1.1%). However, 37% of patients were discharged without antiemetic to cover for delayed CINV. In patients who were discharged with antiemetics only 67.2% of patients were compliant to medication.

CONCLUSION: CINV were significantly associated with age and ABVD regimen. QoL was most poor during acute phase of CINV, where patients were documented to have the most CINV events. For the delayed phase of CINV, the management of CINV in terms of medication prescribing and patient compliance still remain suboptimal.

ID No.: NMRR-15-1137-25923

ORAL CHEMOTHERAPY HANDLING, STORAGE AND DISPOSAL PRACTICES AMONG CANCER PATIENTS AT HOSPITAL AMPANG

AFA Ghani, S Sivarasa, SP Wong.
Pharmacy Department, Hospital Ampang

INTRODUCTION: Over the last decades, oral chemotherapy has been chosen over conventional parenteral form in view of patients’ convenience and improving quality of life. However, as there is no direct monitoring from healthcare workers when treatment is managed at home, their safe handling, storage and disposal practices remain questionable.

OBJECTIVES: To evaluate the patient’s practice on oral chemotherapy handling, storage and disposal among cancer patients at Hospital Ampang. To study the association between factors such as patients’ age, gender and education level on patient’s practice.

METHOD: Patients who fulfill the study criteria answered a structured, validated questionnaire. Patients were assessed on the knowledge of their medication, common practices at home with regards to handling, storage and disposal of oral chemotherapy agents, and their perception on the safety on the oral chemotherapy.

RESULTS: A total of 35 patients were assessed for this study. The median age of patient was 55 years old, where 60% of study population were males. Majority of the patients had a highest education level of secondary school (48.6%), followed by primary school level (25.7%). Most patients (94.3%) were able to indicate their oral chemotherapy regimen correctly and were (80%) primarily in-charge of their own medication, instead of a care-giver. Majority of patients (82.9%) stored their medications appropriately. Only a mere 11.4% of patients and none of the care-givers washed their hands after administering oral chemotherapy. 54.3% patients claimed that they would dispose excessive medication by flushing them down the toilet or into the trash. Only 6 patients claimed that they would return extra pills to their doctors or pharmacists. Patients that implied their oral chemotherapy is “safer” or “equally as safe” as other prescription drugs was 31.4% and 42.9% respectively. Only 9 patients indicated that their oral chemotherapy is unsafe.

CONCLUSION: Although storage of oral chemotherapy was appropriate, majority do not safely handle and dispose of their medications according to recommendations. This is reflected in the falsely perceived safety of oral chemotherapy.

ID No.: NMRR-15-1774-25864
PUBLIC KNOWLEDGE ON REGISTERED DRUG

Lim SH, Lim MC, Sukiman S.
Pharmacy Department, Hospital Banting

INTRODUCTION: According to Regulation 8(1) of the Control of Drug and Cosmetic Regulation 1984, all registered pharmaceutical products, traditional and supplements must have hologram labeling Meditag and a registration number staring with MAL followed by 8 digits and then by either A,X, N and C according to its class. However, public awareness on registered drug in Malaysia is still low. It is proven by National Survey on the Use of Medicines (NSUM) by Malaysian Consumer in 2012 that shows 76.4 % participants were aware about registration number but only 38.7% were aware about the KKM hologram.

OBJECTIVES: To evaluate the patient’s knowledge on registered drug. In addition, the study aiming to investigate the effects of age, gender and educational status on their knowledge about registered drug.

METHOD: Patients who fulfill the study criteria were interviewed to assess their knowledge using a validated questionnaire.

RESULTS: Out of 140 participants, most of them (93%) are aware about the requirement of registration for pharmaceutical product but only 4% can identified that hologram and MAL number is the requirement for a registered product. Suprisingly, about 76% of participants knows that unregistered product will cause harm to the consumer.

CONCLUSION: Knowledge on registered drug is still poor. We must do more campaign or awareness program to increase public knowledge about registered product.

ID No.: NMRR-15-1271-26423

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

Pharmacy Department, Hospital Kajang

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

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

METHODS: 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 was male patients (45.5% in MTAC vs. 64.4% in MOPD), with Malays patients as the main population. The most common indications for warfarin were atrial fibrillation and mechanical heart valves. 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. The defaulter rate was significantly lower in MTAC (3%) vs. MOPD (22%) (p=0.038).

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

ID No.: NMRR-14-1658-20901
DRUG UTILIZATION AND COST CONTAINMENT STUDY OF DRUG ITEMS AT HOSPITAL KAJANG USING ABC ANALYSIS

Pharmacy Department, Hospital Kajang

INTRODUCTION: Substantial improvement can be brought about in the hospital inventory and drug expenditure by inventory control techniques. These include ABC and VEN and ABC-VEN matrix analysis.

OBJECTIVES: The present study was planned to identify the drug categories that need stringent management control in Hospital Kajang. The drug formulary of the pharmacy consisted of 421 items.

METHODS: The annual expenditure incurred on each item of pharmacy for the year 2012-2013 was analyzed and inventory control techniques, i.e. ABC, VEN and ABC-VEN matrix analysis, were applied. The classification of drug items into VEN was discussed with justification by a group of Head of departments.

RESULTS: The total number of drugs analyzed in the year 2012 was 735 and the total number of drugs analyzed in the year 2013 was 689. In the year 2012, Class 1 items accommodate 72.8% of total annual drug expenditure. Meanwhile in the year 2013, class 1 items accommodate 76.44% on total drug expenditure. On ABC-VED matrix analysis, 22.09%, 54.63% and 23.28% items were found to be category I, II and III items, respectively, accounting for 74.21%, 22.23% and 3.56% of ADE of the pharmacy. The ABC and VED techniques need to be adopted as a routine practice for optimal use of resources and elimination of out-of-stock situations in the hospital pharmacy.

CONCLUSION: The study depicted the items belonging to category I which requires top managerial control, also the items belonging to categories II and III which require control by middle and lower managerial level respectively. Class 1 items should be monitored frequently for better managerial control.

ID No.: NMRR-14-1831-20940

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INVESTIGATING DROPOUTS AND DISCONTINUATION IN UBAT MELALUI POS 1MALAYSIA (UMP1M) AND SPEED – COLLECT

Pharmacy Department, Hospital Kajang

INTRODUCTION: VAS is a value added services offered by outpatient pharmacy department in MOH facilities which assists patients to obtain their medication supply efficiently. Nevertheless there are patients who had registered to use the services has discontinued or terminated the services. Presence of dropouts while using these services may reflect weaknesses in current systems.

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

METHODS: 72 subjects who are inactive for more than 6 months were involved in this study. Subjects are interviewed via phone call and feedbacks are sampled using interviewer administered questionnaire.

RESULTS: Out of 43 inactive patients in Speed – Collect service, 12 patients (27.9%) has changed their follow up to other places while three of the inactive patients (4.7%) has passed away. Reasons for discontinuation were medication was not prepared despite earlier notification from patients (28.6%), SMS were not replied (21.4%), 17.8% elected for both possibilities of the call was not answered and the medication could not be collected on designated date due to unavoidable reasons, 14.2% of patients indicated that limited time to collect the medications whereas one patient (3.6%) claimed that no transportation to the hospital as the reason for termination of the service. Reasons for discontinuation in UMP1M services were unreasonable fees of UMP1M as one of the reasons of discontinuing the UMP1M services (56.3%), 37.5% claimed that they do not understand or does not have medication instructions on the medication received via post, 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 improvement to increase patient satisfaction and hence, participation in VAS offered by the HKJ Outpatient Pharmacy.

ID No.: NMRR-14-1832-21022
HEALTH RELATED-QUALITY OF LIFE (HRQOL) IN TYPE 2 DIABETES MELLITUS: A STUDY IN SELANGOR DISTRICT HOSPITALS
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INTRODUCTION: Diabetic patients need to adhere to severe dietary restrictions and daily self-administration of oral medications or insulin. These may adversely affect diabetic patient’s quality of life. Due to this, it is crucial to assess health-related quality of life (HRQoL) of diabetic patients so that interventions can be designed and implemented that will further enhance patient’s compliance and lifestyle.

OBJECTIVES: To compare quality of life (QOL) between age groups and to compare QOL between patients on oral anti-diabetic agent (OAD) with insulin treated patient with or without OAD.

METHOD: This cross sectional study used convenient sampling method to assess HRQoL among diabetic patients from three district hospitals in Selangor; Hospital Kuala Kubu Bharu, Hospital Tanjong Karang and Hospital Tengku Ampuan Jemaah. Face to face interviews were conducted among 150 respondents from Out-patient Pharmacy and Diabetic Clinic by using validated World Health Organization Quality of Life Questionnaire (WHOQOL-BREF). It is divided into four domains; domain 1 (physical health), domain 2 (psychological health), domain 3 (social health) and domain 4 (environmental health). It were calculated in score from 0 - 100. The higher the mean score is, the higher the QOL.

RESULTS: Age “40 – 49 years old” group has the highest mean score in domain 2 and 4 which was 64.48 and 61.48 respectively. Nevertheless, group “50 – 59 years old” record highest mean score in domain 1 and 3 (61.76 and 66.94). Respondents who were treated with tablet(s) only have higher mean scores in domain 1 and 2 when compared with the subjects who treated with insulin (p<0.05).

CONCLUSION: No significance difference shown between age group. However, patients who were treated with tablets only are significantly having a good quality of life in term of physical and psychological health than patients who are treated with insulin with or without OAD.

ID No.: NMRR-13-1705-17535

A RETROSPECTIVE STUDY OF IMMUNOGLOBULIN UTILIZATION PATTERN IN HOSPITAL SELAYANG, A TERTIARY CARE HOSPITAL IN MALAYSIA
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INTRODUCTION: Intravenous immunoglobulins (IVIG) is a human plasma product consists of pooled polyclonal immunoglobulins that is derived from the serum of thousand healthy donors per batch. IVIG use has grown rapidly in numerous debilitating and life threatening conditions and is found to be frequently prescribed to patients for off-label indications.

OBJECTIVES: This study is aimed to provide an insight of the local utilization pattern of IVIG in Hospital Selayang, a tertiary care hospital in Malaysia.

METHOD: Adult patients who were given Immunoglobulin in Hospital Selayang in year 2014 were identified retrospectively using the pharmacy IVIG supply registry and patients data including patients demographics, treatment indication, dosing regimen, prescriber specialty were subsequently obtained from hospital electronic medical record system “PowerChart”.

RESULTS: Out of a total of 55 patients, only 6 patients received IVIG for FDA-approved indications. Among the off-label indications, systemic lupus erythematosus (SLE) being the most common indication where IVIG was prescribed. Majority of the patients received IVIG of 2g/kg per course, administered in divided doses over various days ranging from 1 to 9 days. 42 (76.4%) of patients received all of their IVIG infusions in one-off treatment course, while 13 (23.6%) patients received cyclical treatment with an average of 3.54 courses per patient. 32.7% of IVIG was prescribed to patients by nephrologists, followed by 30.9% by rheumatologists, 27.3% by general medical specialists, 5.5% by pediatric rheumatologists and 3.6% by general pediatric specialists. In the year of 2014, a total of 7306g of IVIG was prescribed, and contributed to a total cost of RM 1,355,933.60. Of the total cost, RM 1,208 136.84 was used for the off-label indications.

CONCLUSION: High usage of IVIG for off-label indications had cost a substantial financial burden to our healthcare system. Physicians and pharmacist should work together to implement a monitoring system or a IVIG guideline to control the IVIG usage in our institution.

ID No.: NMRR-15-1258-26923
A COMPARATIVE STUDY OF EFFECTIVENESS AND COST BETWEEN COAL TAR, SULFUR AND SALICYLATE ACID (CERA-SCALP®) AND CALCIPOTRIOL SCALP SOLUTION (DIAVONEX®) IN MANAGEMENT OF SCALP PSORIASIS IN SELAYANG HOSPITAL

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INTRODUCTION: Psoriasis is a chronic skin inflammatory disorder which is characterized by thickened, red area of skin covered with silvery scales. The scalp is one of the common sites of psoriasis.

OBJECTIVES: To investigate whether Coal Tar, Sulphur and Salicylic acid ointment (Cera-Scalp®) is comparable to calcipotriol lotion (Diavonex®) in management of patients with scalp.

METHOD: Randomized prospective open label whereby 60 subjects were recruited from Dermatology Clinic Selayang Hospital from January until December 2013. Patients were randomized either to apply Cera-Scalp® or Diavonex® for 6 months. The clinical outcome (PASI and DLQI) were evaluated at 0, 1 and 6 months. The amount of ointment and solution used were recorded.

RESULTS: There are no differences between Cera-Scalp® and Diavonex in terms of effectiveness and patient’s quality of life in the treatment of scalp psoriasis. Cera-Scalp® was shown to be cost-savings as compared to Diavonex® although the quantity used were 62.55 higher. Both treatments were safe and well-tolerated, only minor adverse events such as burning sensation was documented in Diavonex® at the initial phase of application and it did not require cessation of therapy.

CONCLUSION: The cost effectiveness of Coal tar, sulphur and salicylate acid ointment combination therapy may be exploited in the future as therapy at primary care level.

ID No. : NMRR-11-614-9513

QUALITY OF LIFE AND ADHERENCE IN PEMPHIGUS VULGARIS PATIENTS IN SELAYANG HOSPITAL

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INTRODUCTION: Pemphigus vulgaris is an autoimmune bullous disease that mainly affects the skin and mucous membranes. Adherence is vital in the management of pemphigus vulgaris. Poor adherence may subsequently lead to poor quality of life and affects its overall effectiveness it also has the ability to affect patient’s quality of life because of the pain, itchiness and cosmesis. There are many tools to evaluate quality of life in patient with pemphigus but Autoimmune Bullous Disease Quality of Life Questionnaire (ABQOL) is a specific tool used in patient with bullous disease.

OBJECTIVES: To evaluate the impact of pemphigus vulgaris on patients’ quality of life and adherence.

METHOD: All patients who were diagnosed with pemphigus vulgaris were recruited and interviewed at Selayang Hospital Dermatology clinic or ward from 1st April till August 2015. ABQOL was used to evaluate each patient’s quality of life and Modified Morisky Score (MMS) was used to evaluate adherence. Data were analysed into different aspects affecting patients’ quality of life, adherence and patients’ demographic were report as median (interquartile range).

RESULTS: The study sample consisted of 20 patients with a mean age of 54.4 ± 15.8. The overall ABQOL mean score was 22.6 ± 8.76. Majority of the patients perceived their skin lesions as severe. Majority were incontinent by their illness because of having to change their clothes often (66%), difficulty in self cleansing (76%) and have difficulty in enjoying food (52%). Psycho-socially, 66% were depressed, 50% were embarrassed, 47% felt anxious and 20% had sexual difficulties as a result of their illness. 24% were unable to carry out their daily chores or work. In this study, only 25% patients were having high adherence to systemic agent, 50% were having medium adherence.

CONCLUSION: These patients perceived pemphigus vulgaris as a severe skin condition and their quality of life was affected in various ways and majority of the patients adhered to the systemic agent.

ID No.: NMRR-13-199-15766
IMPACT OF PHARMACIST FACILITATED DISCHARGE MEDICATION RECONCILIATION IN CARDIOLOGY WARD IN SELAYANG HOSPITAL

Department of Pharmacy, Hospital Selayang

INTRODUCTION: There have been various study showed that medication error is common in hospitalised patients. Medication reconciliation facilitated by pharmacist is needed to identify medication discrepancies which will help to reduce unnecessary medication order and wastage.

OBJECTIVES: This study is aimed to explore this outcome.

METHOD: This study is a cross sectional, descriptive analysis conducted at the Cardiology ward (5D) of Hospital Selayang. A total of 99 patients were enrolled into this study.

RESULTS: The total number of discrepancies obtained during the study was 48 (45%). Types of discrepancies found were divided into five categories. The category with the most discrepancies was inappropriate duration, 33 (31%). The total number of pills saved obtained during the study was 4270 with the total cost saved RM 7735.43. The highest number of pills saved was 805 which was found in anti-platelet group along with highest total cost saved, RM 4351. The optimisation of patient treatments was categorised into five groups. The category with the highest frequency was optimised drug (45.1%), followed by right patient (25.8%), and the lowest was optimised frequency (3.2%). The study showed that there was a significant positive association between presence of discrepancies; inappropriate duration with the amount of cost saved (p<0.001). The study also showed that the association between the presence of discrepancies; inappropriate drug and inappropriate dose with optimised treatment was significant (p<0.001) as well as there was significant association between inappropriate duration and wrong patient with optimisation of treatment (p<0.05).

CONCLUSION: Medication reconciliation facilitated by pharmacist managed to reduce unnecessary medication order and wastage concurrently helps to optimise patients’ treatment.

ID No. : NMRR-15-1402-24292

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EFFICACY OF PROPHYLACTIC SUPPOSITORY DICLOFENAC IN PREVENTION OF POST-ERCP PANCREATITIS (PEP) IN HIGH RISK PATIENTS IN SELAYANG HOSPITAL

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OBJECTIVES: This study aim to (1) evaluate the efficacy of prophylactic suppository Diclofenac in prevention of post-ERCP pancreatitis (PEP) for high risk patients, (2) evaluate the severity of PEP in high risk patients (mild, moderate, severe), (3) evaluate the relative protective effect of prophylactic suppository Diclofenac among the subgroup of patients who were stratified according to risk factors.

METHOD: A retrospective observational study was carried out from 2011 until July 2015. From 2013, patients at high risk for developing PEP undergone ERCP were given prophylactic suppository Diclofenac 100mg. The incidences of PEP in these patients were obtained and recorded. The efficacy of prophylactic suppository Diclofenac in prevention of PEP was evaluated by reduction in incidences of PEP compared to a control group untreated with suppository Diclofenac in 2011 and 2012.

RESULTS: A total of 100 patients were included. PEP developed in 4 (8.0%) patients given suppository Diclofenac (n=50) and in 12 patients (24.0%) in the control group (n=50) [p=0.029]. This difference is statistically significant with an absolute risk reduction (ARR) of 16%, relative risk reduction (RRR) of 66.7% and a number needed to treat (NNT) of 7. Mild and moderate PEP occurred in 1 (2.0%) and 3 (6.0%) patients given suppository Diclofenac. No patients developed severe PEP. In the control group, 2 (4.0%), 9 (18.0%), and 1 (2.0%) patients developed mild, moderate and severe PEP respectively.

CONCLUSION: Prophylactic suppository Diclofenac significantly reduced the risk of PEP in high risk patients in Selayang Hospital. Prophylactic suppository Diclofenac also significantly reduces PEP risk in patients with higher PEP risk score of more than 2.

ID No: NMRR-15-993-24860
A RETROSPECTIVE OBSERVATIONAL STUDY ON WARFARIN USE AND ADVERSE OUTCOMES IN PATIENTS WITH HEART VALVE REPLACEMENT

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INTRODUCTION: The selection of the right warfarin dose during warfarin initiation in heart valve replacement patients is not straightforward and is commonly decided by the operating surgeon based on the complexity of the surgery and the presence of dysrhythmia during the recovery period. The presence of arrhythmias will delay removal of the pacing wire. Pac ing wire removal can only be performed when the INR is < 2.0 to avoid excessive bleeding at the pericardium. Additionally, there is no data on the outcomes of patients initiated with warfarin both during hospitalization and upon discharge.

OBJECTIVES: (i) To describe the warfarin initiation practice and duration to reach target INR (ii) To assess the bleeding, thromboembolic and readmission rates.

METHOD: Retrospective universal sampling study in all heart valve replacement patients (n=58) of Hospital Serdang in the year of 2013 who had met our inclusion criteria with data retrieved from Patients’ Medical Records.

RESULTS: The majority of patients were initiated on low dose warfarin. The average duration to reach therapeutic INR is 6.11 days. The current practice demonstrated low bleeding (3.4%) and thromboembolic events (1.7%) with 4 out of 58 patients (6.9%) being readmitted due to overwarfarinization one year post discharge.

CONCLUSION: Our findings suggest that low warfarin initiation dose (< 5 mg) reduce the rate of excessive anticoagulation and offer a stable achievement towards targeted therapeutic INR, in addition to low adverse outcomes.

ID No.: NMRR-14-1751-20952

AMINO ACID OPTIMIZATION FOR PRETERM INFANTS IN NICU HOSPITAL SERDANG

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INTRODUCTION: Early aggressive supplementation of amino acids (AA) for preterm infant is crucial in order to prevent protein catabolic state. Higher AA intake has been associated with higher blood urea nitrogen levels but also showed to improve growth without short-term AA intolerance.

OBJECTIVES: To determine the short-term outcome after optimization of AA in parenteral nutrition (PN) in NICU setting.

METHOD: This is a retrospective cross-sectional study where PN administration data were collected from patient’s clinical notes through hospital eHIS system. Analysis was done using General Linear Model and Spearman’s correlation by SPSS version 19. We included 95 preterm infants who were started with PN after birth in September 2012 to August 2013. The mean gestation age was 29±2.5 weeks with the mean birth weight of 1.17±0.25 kg. 60% of the patients started PN within 12 hours of life and 84% received ≥1.5g/kg/day of AA in the first day of PN.

RESULTS: Patients receiving high AA (≥3.5g/kg/day) have better weight outcome after the completion of PN compared with the low AA group (P = 0.006). There is no significant correlation between AA intake with urea level or metabolic acidosis (both P > 0.05). However, higher AA intake was associated with lower phosphate level (P = 0.026), as AA could influence the metabolism of phosphorus. Other complications observed during PN are electrolyte and glycemic imbalance.

CONCLUSION: Optimization of AA (≥3.5g/kg/day) in PN is associated with improved weight outcomes without significantly increasing the urea level. Phosphate level should be monitored during PN to prevent hypophosphatemia.

ID No.: NMRR-14-697-21899
CLINICAL AUDIT ON CLINICAL PHARMACOKINETIC SERVICE DOCUMENTATION

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INTRODUCTION: Clinical Pharmacokinetic Service provided by pharmacists serves to interpret serum concentrations of drugs with narrow therapeutic index. Multi-disciplinary healthcare professionals are involved in management of affected patients; hence the resulting report is an important communication tool. However, there has been frequent criticism regarding unavailable reports and poor documentation. This necessitated an audit to determine whether the measured drug concentrations were reviewed and whether pharmacists’ interpretation reports comply with standard guidelines.

OBJECTIVE: To assess the number of measured drug concentration that has been reviewed and documented appropriately.

METHOD: The audit was done retrospectively. All patients admitted to Hospital Serdang in year 2014, received narrow therapeutic index drug and their serum drug concentrations measured were included in this audit. The estimated sample size was 322. A check list was established to facilitate data collection. The indicator of the audit is the percentage of drug levels that was reviewed and has a complete interpretation report.

RESULTS: Only 5.6% drug levels were found to be reviewed and documented. A survey was carried out on 13 clinical pharmacists involved in providing this service to explore factors contributing to non-conformity of standard guidelines. Survey showed that reports were incomplete because certain variables were assumed to be non-significant and some of the requesting clinicians failed to provide relevant information in the request form. Improvement measures include electronic report format was changed from free-text to checklist, distribution of pocket sampling guide to all wards to help the requesting clinicians in filling up the request form. CME was also provided for wards without clinical pharmacists to improve data provided in request forms.

CONCLUSION: This audit provides an overview of the current practice pharmacokinetic service reporting with regards to content, in addition to identifying areas for further development. Further audits will be performed to assess sustainability of report integrity.

ID NO: NMRR-15-1003-28428

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IMPROVING BEDSIDE DISPENSING (BD) BY PHARMACISTS IN SERDANG HOSPITAL

Pharmacy Department, Hospital Serdang

INTRODUCTION: In 2013, 56% of patients were discharged from Serdang Hospital wards during office hour. However, the percentage of Bedside Dispensing (BD) done by pharmacists was only 13%. BD is important as it may enhance patients’ understanding and reduce the risk of medication error.

OBJECTIVES: To improve BD by pharmacists in Hospital Serdang and to determine the percentage of BD by pharmacists, Identify factor(s) to improve the percentage of BD by pharmacists, formulate strategies and to implement possible remedial action & evaluate effectiveness of remedial measures implemented.

METHOD: It is a cross sectional study with universal sampling. Patient data who fulfill the study criteria were collected using manual Record-IP-06(Statistik Preskripsi Discaj) and Record-IP-10(Statistik Farmasi Kaunseling) in the Verification Phase (December 2013-February 2014), Cycle 1(April-Jun 2014), Cycle 2(July 2014-May 2015) and Cycle 3(June-July 2015). A validated questionnaire survey on understanding of BD service were also distributed among nurses (N=50).

RESULTS: Percentage of BD improved from 21% to 51% in Cycle 1 and to 64.5% during Cycle 2. This successful improvement was beyond the standard of 50% set in this study.

CONCLUSION: Feedback mechanism from staff & commitment from all staff including top management increased the percentage of bedside dispensing by pharmacist in Hospital Serdang.

ID No.: NMRR-14-1021-21037
IMPROVING FLOOR STOCK MANAGEMENT IN WARDS HOSPITAL SERDANG
Pharmacy Department, Hospital Serdang

INTRODUCTION: Floor stock is a limited quantity of frequently-used medications kept in wards to reduce the time required to obtain necessary medications from the pharmacy to the nurses who administer them. Poor floor stock management by nurses in wards increases the risk of errors involved with medication administration. Multiple contributing factors can lead to poor floor stock management whereby increase the risk of errors and financial resources.

OBJECTIVES: To improve percentage of floor stock managements in wards, Hospital Serdang, to determine the percentage and problem(s) of floor stock management within inpatient pharmacy, to formulate strategies and implement possible remedial action and to evaluate effectiveness of remedial measures implemented.

METHOD: The study is a cross sectional prospective study conducted from December 2014 till May 2015. Data collection form and ward audit form were used to collect data on knowledge and awareness of nurses and audit the wards. This was followed by implementation of remedial actions from February till April 2015. Post remedial evaluation was conducted via ward audit in March and May 2015. Assignation of personnel in-charge of floor stock management was done. Interactive meetings with sisters and representative of staff nurses were conducted in each ward. Revision of floor stock list was done during interactive meetings. MAR IT training sessions were conducted. Implementation of 5S in the wards was made.

RESULTS: Pre-remedial ward audit result was 0%, none of the selected ward achieved ≥ 80%. The ABNA was 9.4%. Following remedial measures, 75% of selected wards achieved ≥ 80% marks during March 2015 ward audit, whereas for May 2015 ward audit, all 100% achieved ≥ 80% marks.

CONCLUSION: There is a need for continuous monitoring for floor stock management in order to sustain the remedial measures and to further improve floor stock management.

ID No.: NMRR-15-891-26414

LIPID TOLERABILITY IN VERY LOW BIRTH WEIGHT (VLBW) INFANTS RECEIVING INTRAVENOUS LIPID
Pharmacy Department, Hospital Serdang

INTRODUCTION: Lipid is one of the crucial components in parenteral nutrition as it contains high energy density in a relatively low volume. Lipid infusion decreases carbon dioxide production compared with carbohydrate and helps to maintain a net-nitrogen balance. Lipids are tolerated from the first day of life and can be initiated at 0.5-1.0g/kg/day to a maximum of 3.0g/kg/day to prevent essential fatty acid deficiency.

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

METHOD: This is an observational prospective study done over 12months in 2015. Subjects on intravenous lipid were divided into 2 groups (Group 1: 1000g to <1500g and Group 2: <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 Fisher’s Exact Test and Pearson 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 1 and (27weeks, 800g) in group 2 respectively. There is a significant association between birth weight and the triglyceride level (p=0.007). The mean TG level for group 1 was 1.88mmol/L, compared with 2.52mmol/L for group 2. Bilirubin trends, platelet counts, liver enzymes and complications such as sepsis and chronic lung disease were not significantly associated between groups.

CONCLUSION: Triglyceride level should be monitor before infusion reached 3g/kg/day in ELBW. Lipid is generally well tolerated in most infants without causing significant adverse effects.

ID No.: NMRR-15-218-23988
PRESCRIBING PATTERN OF WARFARIN AND DABIGATRAN IN SERDANG HOSPITAL

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INTRODUCTION: Both warfarin and dabigatran were approved and widely used for stroke prevention in atrial fibrillation, thromboprophylaxis after total hip or knee replacement and the treatment and prevention of venous thromboembolism. New oral anticoagulants have major pharmacologic advantages over vitamin K antagonists (eg, warfarin) which include rapid onset/offset of action, few drug interactions, and eliminating the requirement for regular coagulation monitoring.

OBJECTIVES: To determine the baseline characteristics and medical conditions in patients using warfarin and dabigatran in Serdang Hospital. To determine the appropriateness of use of warfarin and dabigatran in Serdang Hospital by comparing with the current prescribing guidelines. To investigate the common side effects or adverse drug reactions among patients on warfarin and dabigatran.

METHOD: A retrospective study that was conducted by screening of medical records of any patients who are on warfarin or dabigatran based on the inclusion and exclusion criteria. Evaluation of the appropriateness of prescribing was performed using the Medication Appropriateness Index (MAI) which consists of 6 criteria which are indication, choice, dosage, drug-drug interactions, drug-disease interactions, and duplication.

RESULTS: There was 7% (n=8) of warfarin patients that were prescribed inappropriately due to the choice of drug chosen and 6% (n=6) of warfarin patients that have drug-disease interactions. Whereas for dabigatran, there was 8% (n=6) of patients that are inappropriately prescribed with dabigatran due to the choice of drug chosen and 26% (n=19) of patients are inappropriate prescribed with dabigatran due to the inappropriate dosage and frequency of dabigatran given. There was 4% (n=3) and 5% (n=4) of dabigatran patients that have drug-drug and drug-disease interactions with dabigatran.

CONCLUSION: Anticoagulants should be prescribed with precaution and appropriate clinical judgement should be made especially in patients with high risk bleeding such as elderly patients of 75 years old and above, have gastritis conditions, and a history of upper gastrointestinal bleeding (UGIB).

ID No.: NMRR-15-2222-28126

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REDUCING DOSING ERROR IN PEDIATRIC PATIENTS: AN INTERVENTION THROUGH THIS (PEDIATRIC POP UP DOSE)

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INTRODUCTION: Children are vulnerable to medications error. There is an increased need for calculations, dilutions and manipulations of pediatric medicines. In Serdang hospital itself, 38% of errors found in year 2013 were contributed by pediatrics ward. Out of it, 50% were dosing errors. Serdang Hospital is a fully IT based system where the prescribing and supplying of medications are done through THIS (Total Hospital Information System).

OBJECTIVES: This study aims to reduce dosing error in pediatric patients by implementing an intervention through THIS.

METHODOLOGY: This is a cross sectional study where all prescriptions received from general pediatric wards during office hour in June 2014 were screened for dosing errors and classified according to pharmacological group. This is followed by intervention phase in July to October 2014 where incorporation of Pediatric Pop up Dose (dose-assisted prescribing) into THIS was done. The post intervention data was then collected in November 2014. Rate of dosing errors before and after dosing-assisted system implementation were calculated and significance level was calculated using Chi-Square.

RESULTS: The number of dosing error decreased from 59/4345 (1.36%) to 23/3721 (0.6%) following intervention. (p value=0.01). In general, antibiotic prescription has the most errors followed by antipyretic (paracetamol).

CONCLUSION: The process of medication delivery involves many stages and personnel. Our intervention only addresses the issue during prescribing stage however errors at other stages of medication delivery can still occur. To ensure zero medication error, interventions should be comprehensive in view that error causes are multifactorial.

ID No.: NMRR-13-1645-18025
USE OF ORAL N-ACETYLCYSTEINE IN PREVENTION OF CONTRAST INDUCED NEPHROPATHY (CIN) IN PATIENTS UNDERGOING CORONARY ANGIOGRAPHY AND PERCUTANEOUS CORONARY INTERVENTION (PCI)

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INTRODUCTION: Coronary angiography and percutaneous coronary interventions (PCI) are associated with a risk for contrast induced nephropathy (CIN). In clinical practice, N- Acetylcysteine (NAC) is commonly used in patients as prophylaxis against CIN due to its low cost, lack of adverse effects and potential beneficial effect. Some risk factors for CIN include elderly patients and those with diabetes mellitus (DM) or chronic kidney disease (CKD).

OBJECTIVES: To observe the use of oral NAC in patients undergoing coronary angiography or PCI procedures in Hospital Serdang, Selangor.

METHOD: All patients who underwent coronary angiography or PCI from August 2015 to October 2015 and who fulfilled the inclusion criteria were sampled. Data was collected using a collection form and Microsoft Excel 2010 was used for data analysis.

RESULTS: Among patients prescribed with oral NAC (n=39), the most common risk factor observed was DM (n=6), followed by patients with eGFR 40-60 ml/min/1.73m² (n=5) and patients with concomitant eGFR 40-60 ml/min/1.73m², anaemia and diabetes mellitus (n=5). Under-prescribing was observed in 68.4% (n=26) of patients with moderate risk for CIN and 50% (n=7) of high risk patients. NAC was also not prescribed in 50% (n=2) of patients aged older than 75 years old, 78 % (n=80) of patients with DM and 52% (n=29) of patients with eGFR <60 ml/min/1.73m². On the other hand, 4 % (n=3) of patients with no risk factors were prescribed with NAC over the 3-month period amounting to a possible savings of RM36.72.

CONCLUSION: In summary, it was observed that half of the patients with a high risk for CIN were not prescribed with prophylaxis NAC with the most prevalent risk factors being DM and moderate renal impairment.

ID No.: NMRR-15-2040-26629

THE INCIDENCES OF POLYPHARMACY IN ELDERLY IN THE MEDICAL WARD OF MALAYSIAN GOVERNMENT HOSPITAL.

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INTRODUCTION: Polypharmacy was common in elderly patients. To date, there is lack of study on polypharmacy in elderly patients in Malaysia including factors associated to polypharmacy. OBJECTIVES:

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 was significantly increased from 63.7% (admission) to 70.7% at discharge (P <0.001). The most frequently used drugs classes 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 drug 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 drug 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, physician and pharmacist play an important role on review patient profile and optimizing drug therapy to improve drug safety in elderly patients.

ID No.: NMRR-14-850-21116
UTILIZATION OF BETA BLOCKERS IN ACUTE CORONARY SYNDROME (ACS) PATIENTS AT HOSPITAL SUNGAI BULOH

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INTRODUCTION: Beta-blockers have been shown in various studies to provide both mortality and morbidity benefits in patients with acute coronary syndrome (ACS). Despite clear evidences of beta-blockers benefits, they are still under-prescribed or used at suboptimal dosages.

OBJECTIVES: To assess the utilization of beta-blockers in ACS patients at Hospital Sungai Buloh, assessing the type of beta-blockers used and dose utilized, and factors associated with the non-prescribing of beta-blocker.

METHOD: All patients admitted to the medical wards and Cardiac Care Unit (CCU) were screened through on a daily basis from February to April (weekdays only). Only patients who fulfill the inclusion criteria were included in the study. The sampling frame for this study is from February 2014 to April 2014.

RESULTS: Of the 131 cases reviewed, 80 cases met the inclusion criteria. Among these 80 patients, 71.3% were prescribed beta-blockers. Bisoprolol was the most commonly prescribed agent (80.7%). It was found that majority of patients (52.6%) were prescribed dose at 26 – 50% of target dose. Reasons for not prescribing beta-blockers were bradycardia, hypotension and respiratory distress.

CONCLUSION: Physicians should ensure that patients are not denied the prognostic benefits of beta-blockers therapy. They should also seek to optimize the dosage of beta-blockers to recommended dosages or as tolerated by the patients.

ID No: NMRR-14-757-19460

COMPARISON OF TREATMENT-LIMITING HEMATOLOGICAL TOXICITIES BETWEEN INNOVATOR & GENERIC ZIDOVUDINE+LAMIVUDINE FORMULATION IN HIV-INFECTED INDIVIDUALS

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INTRODUCTION: Zidovudine and Lamivudine formulation is a preferred fixed-dosed combination nucleoside reverse transcriptase inhibitor (NRTI) in resource limited settings. Although generic formulations are commonly used throughout developing countries, questions have been raised about the safety of generic formulations.

OBJECTIVES: This study aims to compare the incidence of anemia between innovator (Combivir) and generic (Zovilam) combination of zidovudine/lamivudine as well as risk factors associated with zidovudine-induced anemia in our local setting.

METHOD: A retrospective cohort study was carried out in Malaysia’s National Tertiary HIV/AIDS referral hospital using computerized system between February 2012 and January 2014. We followed up HIV-infected adults initiated on Combivir and Zovilam for 6 months or until treatment-limiting anemia. Treatment-limiting anemia was defined as hemoglobin drop of 20% or more from baseline, less than 8g/dL or symptomatic of anemia requiring drug discontinuation. Patients developing anemia due to other causes were excluded. Factors associated with anemia were analyzed using Cox proportional uni- and multivariable logistic regression. Association magnitudes were expressed using hazard ratios (HR) with 95% confidence intervals.

RESULTS: We included 199 patients in Combivir and 202 in Zovilam. After 42 weeks of follow-up, incidence of treatment-limiting anemia was 14.6% and 16.3% respectively. In the multivariate model, only age more than 60 year (p=0.004, HR 3.68, 95% CI= 2.05-3.76) and patients who had 2 or more concurrent medications had higher risk of developing anemia (p=0.007, HR =3.49, 95% CI=1.40-8.71).

CONCLUSIONS: Our study found Zovilam non-inferior to Combivir in terms of anemia as a side effect. The main risk factors reported in our study are age more than 60 years and concurrent use of 2 or more myelosuppressive medications for both groups. Prescribing myelosuppressive drugs in HIV-infected patients should be done more carefully especially in patients more than 60 years.

ID No.: NMRR-14-739-20183
IDENTIFYING FACTORS THAT AFFECT THE DISPENSING TIME OF DISCHARGE MEDICATIONS TO DAYCARE PATIENTS IN HOSPITAL SUNGAI BULOH

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INTRODUCTION: Since 2014, discharge medications for daycare patients in Hospital Sungai Buloh are either sent to the dispensary or dispensed at bedside, all within a target dispensing time of 2 hours. The workflow however, has its flaws, leading to reduced patient satisfaction.

OBJECTIVES: To evaluate the factors or uncertainties causing the lag in dispensing time to daycare patients.

METHOD: This is a cross sectional prospective study involving all samples collected within 2 weeks (8 working days) excluding Friday and weekends. Detailed timings from the point of prescribing to the point of dispensing of medications to patients, number of items per prescription and any issues faced were recorded.

RESULTS: We collected 91 samples. 3.29% had more than 2 hours dispensing time while 96.7% were dispensed within 2 hours. The main contributing factor affecting all delayed samples is List A medication not authorized by specialist which caused dispensing time lag of up to 3 hours and 20 minutes. The second factor is medication not correctly ordered as per discharge summary which led to a delay of up to 2 hours and 12 minutes. Among the 96.7% of samples dispensed within 2 hours, 36.4% of the samples had inefficient workflow. This is mainly due to no prior phone call by staff nurse to inform that patient will collect their medication at OPD. This issue caused patient to arrive at OPD before medications were sent or medication brought to daycare for bedside dispensing but patient waited at OPD instead.

CONCLUSION: Contributing factors to the delay in dispensing time were pending authorisation of medication and medication incorrectly prescribed. Communication breakdown among nurses and pharmacy staff also leads to inefficient workflow. Future directions include finding solutions to improve the current system and to assess the efficiency after changes are made.

ID No.: NMRR-15-931-25885

ADR REPORTING: ATTITUDES AND PERCEPTION AMONGST HEALTHCARE PROFESSIONALS
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INTRODUCTION: Adverse drug reaction (ADR) is a major health care issue occurring throughout the world which cause morbidity and mortality. Underreporting of ADR has been a serious problem in Malaysia. Healthcare professional’s knowledge and attitudes to ADR and ADR reporting plays an important role to report any cases of ADR.

OBJECTIVES: This study aims to assess the knowledge, attitudes and awareness of healthcare professionals towards ADR reporting in Hospital Sungai Buloh (HSGb).

METHOD: A cross sectional survey was conducted using self-administered questionnaire. The questionnaires were distributed to 130 healthcare professionals working at HSGb.

RESULTS: The overall response rate was 90%. Only 19.5% of respondents who had reported an ADR in the past 1 year. 61% of respondents had never reported any ADR throughout their practice length. 94.1% of healthcare professionals agreed that ADR reporting is necessary and 81.4% also agreed that ADR reporting is a professional obligation. 66.1% of respondents agreed that ADR are considered serious in Malaysia. 68.6% of healthcare professionals are aware of the existence of ADR reporting and monitoring in HSGb, but 44.1% are unaware of the Blue Card Reporting Scheme in HSGb. Only 25.4% of the respondents are aware of the Online Reporting Scheme for ADR. Only 40.7% of healthcare professionals are aware of the existence of Malaysia Adverse Drug Reaction Committee (MADRAC). Majority of the respondents 93.2% agreed that ADR reporting makes a significant contribution. Lack of information on how to report an ADR (94.9%) significantly discourage ADR reporting among healthcare professionals. To improve ADR reporting, 87.3% of the respondents suggest that a continuing medical education (CME) should be held.

CONCLUSION: Healthcare professionals working in HSGb have positive attitudes towards ADR reporting. Awareness and training of ADR reporting among healthcare professionals would likely to improve ADR reporting among healthcare professionals.

ID No.: NMRR-14-1769-2193
INTRODUCTION: Thalassemia is a genetic blood disorder found worldwide that requires life-long treatment of regular blood transfusions. The frequent blood transfusion leads to iron overload which can result in life-threatening complications when accumulated in myocardium, liver and spleen. Adequate iron chelation therapy is essential to remove excess iron from the body. Poor adherence due to poor disease and treatment knowledge can lead to treatment failure.

OBJECTIVES: To assess iron chelation therapy adherence and disease knowledge among thalassemia patients/carers in Hospital Sungai Buloh and their relationship with one another. To identify other possible factors affecting treatment adherence to iron chelation therapy.

METHOD: Patients who fulfill the study criteria were interviewed to assess their adherence and disease knowledge using a validated questionnaire. The questionnaire consisted of 10 true or false questions measuring patients’/carers’ disease knowledge with each question given a score of 0 or 1 (0=incorrect, 1=correct). Treatment adherence was assessed by using Morisky Medication Adherence Scale based questions. Additional questions were asked to explore other factors affecting treatment adherence.

RESULTS: This study demonstrated an average disease knowledge score of 7.8 among the study population and the overall scores falls in the range of 5-10. The adherence towards iron chelation therapy was found to be significantly associated with the level of disease knowledge among the studied patients/carers (p=0.007). Serum ferritin, an indicator of iron load in the body, was found to be significantly associated with the level of disease knowledge among the studied patients/carers (p=0.036). Among the four possible factors studied, the most common reasons of non-adherence were related to the patients’ beliefs and feelings (68.8%) and drug-related adverse effects (56.3%).

CONCLUSION: This study revealed a significant association between treatment adherence of iron chelation therapy and the level of disease knowledge among the studied patients/carers.

PREVENTION OF VENOUS THROMBOEMBOLISM (VTE) AMONG SURGICAL PATIENTS IN HOSPITAL SUNGAI BULOH: A SURVEY OF DOCTORS’ PERSPECTIVE IN CLINICAL PRACTICE

INTRODUCTION: Venous thromboembolism (VTE) which consists of Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE) is a common cause of preventable hospital mortality. Despite evidence demonstrating significant benefit of VTE prophylaxis among surgical patients, VTE prophylaxes are still underutilized. This study aims to evaluate doctors’ knowledge and awareness regarding VTE prophylaxis among surgical patients.

OBJECTIVES: To evaluate doctors’ knowledge and awareness regarding VTE prophylaxis among surgical patients.

METHOD: A questionnaire-based cross-sectional study conducted in Hospital Sungai Buloh consisting of ten questions formulated according to the objectives. The questionnaire was distributed to 100 subjects. Data collected within one month period was analyzed using descriptive analysis.

RESULTS: Replies from 83 respondents revealed that majority (98.8%) uses prophylaxis. Most frequently used modality was Unfractionated Heparin (UFH) (81.9%). Majority prefer starting prophylaxis post-operative (97.6%) while only 2.4% prefers starting pre-operative. Duration of prophylaxis varies with different type of surgery, where 66.3% decides to continue prophylaxis until patient is mobile, 20% for specific duration of 1 week and 19.3% until patient discharged. It was noted that 8.4% of the respondent was unaware of available Clinical Practice Guidelines (CPGs) on VTE prophylaxis while 31.3% was unaware of availability of departmental VTE prophylaxis protocol. Only half of the respondents performed routine VTE screening in which Ultrasound (60.2%) and D-dimer test (59%) were most commonly used.

CONCLUSION: This study revealed that the respondents appear to be knowledgeable and aware of VTE prophylaxis, however, there remains some variability in the practice. Despite being aware, there are no protocols available in various departments which may further increase the variation in practice. Suggestions for further practice are made.
EVALUATION OF THE APPROPRIATE USE OF ANALGESICS FOR PAIN MANAGEMENT IN ORTHOPAEDIC WARDS OF HOSPITAL TENGAU AMPUAN RAHIMAH, KLANG

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INTRODUCTION: Appropriate pain management is necessary to avoid physiological and psychological effects as a result of unrelieved pain. Therefore, proper control of pain is necessary and it requires assessment and reassessment of pain intensity along with the rational use of analgesics.

OBJECTIVES: The objectives of this study were to assess the analgesic use for pain management in orthopaedic wards of Hospital Tengku Ampuan Rahimah (HTAR) and to determine the incidence of inappropriate prescription of analgesics based on the pain.

METHOD: The data of 200 adult patients’ pain scores and analgesics prescribed were collected retrospectively between September to November 2015 in the orthopaedic wards of HTAR. Geriatric and pediatric patients were excluded. Data was clerked using “Data Collection for Analgesia in Orthopaedics” forms. SPSS statistical software 20.0 was used for data analysis.

RESULTS: A total of 687 prescriptions were collected from 207 patients which consists of 155 males (74.9%) and 52 females (25.1%). Out of the 687 prescriptions, 499 (72.6%) were found to be inappropriately prescribed while only 188 (27.4%) were appropriately prescribed by the prescribers. From the 499 inappropriate prescriptions, most were over-prescribed (84.4%) while only 15.6% were found to be under-prescribed. The mean pain score was 2.59 and most of the patients were reported to have mild pain with pain score ranging from 0 to 3. However, the most commonly prescribed analgesic was found to be tramadol (42.3%), followed by paracetamol (32.9%), diclofenac sodium (12.4%), celecoxib (8.8%), etoricoxib (3.4%), mefenamic acid (0.1%) and morphine (0.1%).

CONCLUSION: This study showed that most of the prescriptions were not in accordance to the pain ladder. Therefore, this result emphasized the need for improving pain management strategies in this hospital and to provide continuous education for the prescribers. Further research is needed to understand the causes of the current trend of prescribing of analgesics in orthopaedic wards of HTAR, Klang.

ID No.: NMRR-15-1938-25520

EVALUATION ON EFFECT OF HEMODIALYSIS IN VANCOMYCIN LEVEL AMONG END STAGE RENAL FAILURE (ESRF) PATIENTS

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INTRODUCTION: Vancomycin is a bactericidal glycopeptide antibiotic that was first introduced in clinical practice in 1956 to treat infections caused by penicillinase-producing Staphylococcus aureus such as line related sepsis associated with dialysis. Vancomycin required plasma concentration monitoring in view of potential risk of drug toxicity and therapeutic failure. There are several studies that had been carried out to study the impact of hemodialysis on patient’s vancomycin level.

OBJECTIVES: Our aims were to evaluate the effect of hemodialysis and other factors that related to the vancomycin plasma concentration.

METHOD: The retrospective observational case control study was conducted by retrieving therapeutic drug monitoring (TDM) results among ESRF patient from January 2014 till April 2015. Data was collected and analyzed using Student-T test and bivariate correlation test.

RESULTS: As a result, it shown that, approximately 14.68 mg/L or 41% of vancomycin level has been cleared out during hemodialysis (HD) as compared to 8.34mg/L or 22% in non-HD day with significant mean differences by approximately 6.4mg/L or 19% (P=0.001). Furthermore, body weight and duration of HD has shown significantly positive relationship with reduction of vancomycin level.

CONCLUSION: There were some limitations that restricted our analysis such as incomplete data of heamodialysis duration and small sample size. However, we believe that our study would initiate an expansion to other study prospectively in a way to obtain more accurate results that show better impact in the recommendations related to therapeutic drug monitoring.

ID No.: NMRR-15-331-25120
INTRODUCTION: Highly active anti-retroviral therapy (HAART) is a combination of multiple antiretroviral drugs from different antiretroviral classes required to suppress the virus replication, thus increase the immunological response. In Malaysia, the agents used for first line treatment include combination of nucleoside reverse transcriptase inhibitor (NRTI) and non-nucleoside reverse transcriptase inhibitor (NNRTI).

OBJECTIVES: The purpose of this study is to evaluate the factors affecting virological & immunological response and the incidence of virological failure in association to adherence among HAART naïve patient.

METHOD: The retrospective observational case control study was conducted in RVD Clinic of HTAR, Klang. The total of 130 samples was included. All information was collected analyzed statistically using logistic regression and chi-square test.

RESULTS: As a result, it shown that age, adherence, combination of HAART regimen and NNRTI were the factors that significantly affect the immunological response (P = 0.03, 0.001, 0.02 & <0.001 respectively). However there is no significant result with virological response. The level of adherence also was significantly highly associated with faster onset of virological, immunological response (P<0.05). The higher the score, the more adhere to medication, the faster onset of virological & immunological response and the less likely to develop virological failure (P<0.001). There were some other factors that we unable to analyze as time constrain.

CONCLUSION: We believe that our study would initiate an expansion to other study in other centre that allowing comparison to be made.

ID No.: NMRR-15-235-23954
THE LEVEL OF COMPLIANCE TO THERAPEUTIC DRUG MONITORING (TDM) REQUEST FORM AMONG MEDICAL OFFICER OF HOSPITAL TENGKU AMPUAN RAHIMAH KLANG
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INTRODUCTION: Appropriate and meaningful interpretation of TDM results requires a complete related clinical and laboratory information. Therefore, compliance on appropriate sampling time, correct samples and completed TDM request forms is vital.

OBJECTIVES: The retrospective study was conducted to evaluate the level of compliance on TDM request forms among medical officer and association with appropriateness of the interpretation and recommendation given.

METHOD: A total of 200 data samples were taken from January 2014 till June 2014. Chi square test was used for data analysis.

RESULTS: It was noted that patient demographic data, clinical summary, sampling time and dosage regimen were the most common information that often left out by the medical officer in the TDM request form. Further analysis also showed that the lack of information mentioned above significantly associated to the inappropriateness of the interpretation and recommendation to the TDM results (P <0.05).

CONCLUSION: Overall, it can be concluded that the level of compliance to TDM request forms in HTAR is poor. Factors contributing to this outcome are lack of knowledge and awareness among medical officer to include all important information required in TDM request form. It is hoped that with this study we could increase the awareness among medical officers on the importance of a complete TDM request form in facilitating the pharmacist to make a reliable and meaningful analysis and suggestion.

ID No.: NMRR-14-1767-23786

IMPROVING ADHERENCE THROUGH GREEN BAG MEDICATION REVIEW – ‘PATIENT EMPOWERMENT’
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INTRODUCTION: Non-adherence to long-term medication reflects a major flaw in healthcare delivery system which results in poor clinical outcome and soaring healthcare cost. Several efforts including providing medication bag and conducting medicines use review have individually shown to enhance adherence by improving patient’s medicine-taking behaviour.

OBJECTIVES: This study integrated both ideas to make up the Green Bag Medication Review, aiming to determine if it improved adherence and reduced medication wastage linked to non-adherence.

METHOD: A randomized non-comparative community trial involving patients with chronic disease was conducted from September 2013 till June 2014 across 6 clinics under Gombak District Health Office. They were given a green bag to store medications and underwent 3 sessions of medication review with a pharmacist on monthly basis to identify problems related to medicine use. Adherence level was assessed with the 8-items Modified Morisky Adherence Scale (MMAS) on baseline and after each intervention and the amount of pills returned were evaluated.

RESULTS: MMAS score of 301 patients was increased from baseline mean ± s.d. of 5.90 ± 1.39 (low adherence) to 6.36 ± 1.44 (medium adherence), 6.76 ± 1.27 (medium adherence), and 6.92 ± 1.19 (medium adherence) after 3 continuous interventions. The mean difference between the pre and 3 post interventions were 0.47 (95% CI of 0.33 to 0.61; p < 0.001), 0.87 (95% CI of 0.72 to 1.01; p < 0.001) and 1.02 (95% CI of 0.88 to 1.12; p < 0.001). The final intervention yielded a 31% increment in the number of highly adherent patient and 25% reduction in the number of poorly adherent patient from baseline. The total number of pills returned was reduced by 62.8% from 55,313 (RM 5,562.45) to 20,600 (RM 1,982.41).

CONCLUSIONS: Green Bag Medication Review significantly improved adherence among patients with chronic disease and exhibited potential in reducing medication wastage associated with non-adherence.

ID No.: NMRR-12-1329-12735
TO IMPROVE SEIZURE CONTROL AMONG EPILEPSY PATIENTS THROUGH EPILEPSY REVIEW SERVICE (ERS) 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 only 9.6 per cent (%) 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 Counseling Guide.

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

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 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, range 0-10, median 1.0) at the baseline to 1.91 (SD 2.02, range 0-7, median 1.0) at 6 months and 0.94 (SD 1.30, range 0-7, median 1.0) at 12 months. Before implementation of ERS, there were delayed completion of TDM cases (40.6%), lack of counseling related to epilepsy issues (21.8%), lack of medication side effects (5.1%) and drug interactions (20.5%) review. Post-intervention showed increment in the completion of TDM cases within 72 hours (84.1%), counseling 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 for them in primary care setting.

ID No.: NMRR-14-1789-23732