Abstracts of Dissertations
June 2013 Exit Assessment Exercise

CAUSE OF DEATH IN HEART FAILURE WITH NORMAL AND REDUCED EJECTION FRACTION

Dr Kam Ka Ho Kevin, Department of Medicine & Geriatric, Shatin Hospital (June 2013 Cardiology Exit Assessment Exercise)

Background The prevalence and incidence of heart failure (HF) has shown exponential increase in worldwide population. However the cause of death in patients of HF was seldom studied in Chinese population. The purpose of this retrospective study was to investigate the cause of death in heart failure patients with normal ejection fraction (HFNEF, EF >= 50%) and reduced ejection fraction (HFREF, EF < 50%).

Methods and results There were a total of 1462 consecutive HF patients were included into the study from June 2006 to December 2010. There were 352 HF patients died within one year (i.e. 24.1%) of which 57.1% of death attributed to cardiovascular cause. The one-year all-cause mortality was 29.6% (181 patients) in HFREF and 20.1% (171 patients) in HFNEF, P < 0.001. Among those who died, the HFREF group (63.5%) has a significant higher rate of cardiovascular death than HFNEF group (50.3%), P 0.03. Decompensated heart failure was the most common cause of cardiovascular mortality in both groups.

Conclusions The mortality of heart failure remained high despite effective anti-heart failure treatment. Furthermore, the mortality in HFREF was persistently related to the cardiovascular cause. More than one-third of patients with preserved ejection fraction died of non-cardiovascular cause. Direction in treating concomitant diseases will play an important role to prevent future HFNEF mortality.

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BENEFITS OF PERCUTANEOUS ASD OCCLUSION IN PATIENTS OLDER THAN 60 - A RETROSPECTIVE COMPARISON OF ASD OCCLUSION RESULTS BETWEEN YOUNGER AND OLDER AGE GROUPS

Dr Wong Yam Hong, Department of Medicine and Geriatric, Tuen Mun Hospital (June 2013 Cardiology Exit Assessment Exercise)

Introduction Secundum atrial septal defect (ASD) is a common form of congenital heart disease, and is associated with multiple morbidities including right heart failure and atrial arrhythmias. Percutaneous transcatheter ASD occlusion at young age has been well demonstrated with excellent outcomes. Evidence demonstrating the benefit ASD closure in elderly patient is not well established. This study investigated the echocardiographic and clinical benefits as well as safety after ASD occlusion in patients above 60 years of age, and compared them with the results in younger adults.

Methodology This was a retrospective observational study, recruiting all adult patients with percutaneous ASD occlusions ever done in 2 cardiac centers in Hong Kong. The studied population was divided into the younger (< 60 years) and older (≥ 60 years) age groups. Pre-operative and earliest post-operative pulmonary arterial systolic pressure (PASP), and right ventricular internal diastolic diameter (RVID) were assessed as primary endpoints. Subjective symptoms, incidence of new onset atrial arrhythmia, thromboembolism, and bleeding complications were recorded as secondary endpoints. These results in the two age groups were then compared with each other.

Results 54 younger and 19 older patients were evaluated. Significant improvements in PASP (from 42.09 ± 11.37 mmHg to 31.93 ± 9.71 mmHg in the younger; and from 52.40 ± 17.01 mmHg to 36.81 ± 12.11 mmHg in the older age group), and RVID (from 3.54 ± 0.86 cm to 2.67 ± 0.66 cm in the younger; and from 3.85 ± 0.68 cm to 3.02 ± 0.71 cm in the older age group) were noted in both groups of patients. Absolute changes in PASP and RVID did not significantly differ amongst age groups. All secondary endpoints are also statistically similar between the older and the young age groups.

Conclusions Echocardiographic as well as clinical improvements after percutaneous transcatheter ASD closure are significant even if the procedure was done after the age of 60. These improvements are achieved to a similar magnitude when compared to the younger adults. The procedure can be safely performed in these geriatric patients.

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MULTIVARIATE ANALYSIS ON THE EFFECTS OF DIFFERENT FACTORS AFFECTING THE OUTCOME IN AMI CLINICAL PATHWAY

Dr Wong Yiu Tung, Department of Medicine, Queen Mary Hospital (June 2013 Cardiology Exit Assessment Exercise)

Introduction Acute myocardial infarction (AMI) is one of the most common causes of fatality in hospital admissions. How to reduce AMI case fatality rate is under on-going research in the field of cardiology. Implementation of AMI clinical pathway was shown previously to reduce the case fatality rate. This study served to investigate how AMI clinical pathway could alter the practice leading to the reduction of AMI case fatality.

Methodology 2029 admissions to the Queen Mary Hospital (QMH) from February 2004 to January 2011 with the diagnosis of AMI were reviewed. They were divided into two groups, namely before the implementation of AMI clinical pathway (From Feb 2004 to Jan 2007), and after the implementation (From Feb 2007 to Jan 2011). Interventional factors that may be associated with the reduction of AMI case fatality rate were explored.

Results Independent interventional factors associated with reduction in in-hospital case fatality rate included performance of in-hospital PCI and implementation of the AMI clinical pathway. For reduction in 30-day case fatality rate, the independent factors included the use of aspirin, ACEI/ARB, beta-blockers and PPIs upon discharge, and the in-hospital use of heparin. For reduction in 6-month case fatality rate, these factors included performance of in-hospital PCI, the use of P2Y12 inhibitors, ACEI/ARB, beta-blockers, statins and PPIs at the first follow-up visits. All the above beneficial interventional factors were shown to be significantly increased with the implementation of the AMI clinical pathway.

Conclusions The AMI clinical pathway was shown to reduce the AMI case fatality rates through improvement in adherence to evidence-based practice.

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IMPACT OF CLOPIDOGREL 600MG LOADING DOSE IN CLOPIDOGREL RESISTANCE FOR HONG KONG POPULATION UNDERGOING ELECTIVE PERCUTANEOUS TRANSLUMINAL CORONARY INTERVENTION

Dr Yeung Kwok Kit Lawrence, Department of Medicine & Geriatrics, Tuen Mun Hospital (June 2013 Cardiology Exit Assessment Exercise)

Background Dual antiplatelet therapy is essential to prevent Stent thrombosis in patients

undergoing percutaneous coronary intervention (PCI). Aspirin and clopidogrel after coronary stenting has been the standard of care. However, clopidogrel resistant was shown to increase the risk of major adverse cardiac event (MACE). Different platelet function tests have been developed to detect the presence of clopidogrel resistant. Current evidence suggested the use of 600mg clopidogrel loading dose to overcome clopidogrel non---responsiveness in order to improve clinical outcome post PCI.

Objective The aim of this study is to evaluate the impact of increasing the loading dose (600mg) of clopidogrel on the prevalence of clopidogrel resistance in Hong Kong, by means of different validated platelet function assays.

Method This was an observational study undergone in Tuen Mun Hospital. 37 patients undergoing elective percutaneous coronary intervention (PCI) were recruited from January 2013 to March 2013, all receiving 600mg clopidogrel loading dose and 75mg daily maintenance dose plus aspirin. Three different methods, including VerifyNowR P2Y12 assay, vasodilator---stimulated phosphoprotein phosphorylation assay (VASP), whole blood impedance aggregometry (WBA), were used to evaluate the clopidogrel resistant. This was compared with those that received 300mg clopidogrel as loading dose (61patients) before the implementation of 2011 American College of Cardiology Foundation/American Heart Association/Society for Cardiovascular Angiography and Intervention Guideline for Percutaneous Coronary Intervention. The primary endpoint was the improved platelet suppression and reduction in clopidogrel resistant rate. Secondary endpoint was the major adverse cardiac event (MACE) rate, which include death, myocardial infarct, target vessel revascularization and stent thrombosis at 1 month. The safety endpoint was any TIMI bleeding at 1 month.

Results 600mg loading dose of clopidogrel improved platelet suppression as assessed by all three platelet function tests. Rate of clopidogrel resistance was reduced as assessed by whole blood impedance aggregometry. Secondary endpoint of major adverse cardiac event showed no significant difference at 30 days follow up between the two group of patients. We detected no incidence of TIMI bleeding in our study.

Conclusion Higher loading dose of clopidogrel (600mg) gives a general trend of better platelet suppression. Clopidogrel resistance was reduced with 600mg loading dose as assessed by whole blood aggregometry 600mg loading dose of clopidogrel before elective percutaneous coronary intervention did not reduce the MACE rate and did not increase the bleeding risk.

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EFFECTS OF IMPLEMENTATION OF CLINICAL PATHWAY ON LONG TERM OUTCOMES AFTER MYOCARDIAL INFARCTION

Dr Yung See Yue Arthur, Department of Medicine, Queen Mary Hospital (June 2013 Cardiology Exit Assessment Exercise)

Background A clinical pathway for myocardial infarction has been implemented in Queen Mary Hospital since February 2007. The clinical pathway has been associated with reduction in case fatality at 30 days and 6 months. However, the impact of clinical pathway on long term outcomes of myocardial infarction including mortality and associated cardiovascular complications is currently unknown. The objective of this study is to clarify the long term outcomes after clinical pathway implementation.

Methods A retrospective cohort study comparing 859 patients (2004-2007) and 1170

patients (2007-2011, after clinical pathway) admitted to Queen Mary Hospital for acute myocardial infarction was conducted. Outcomes at 30 days, 6 months and 1 year were analyzed. Primary outcome was incidence of major adverse cardiac events (MACE). MACE is a composite endpoint of death, acute coronary syndrome, congestive heart failure, emergency revascularization, target vessel revascularization, stent thrombosis, ventricular tachycardia/fibrillation, cerebral vascular accident, arterial embolism and bleeding. Multivariate logistic regression was performed on MACE and each individual outcomes.

Results In the clinical pathway cohort, MACE at 30 days, 6 months and 1 year were 20.8%, 38.4% and 46.7% respectively. There was a reduction in 30 day MACE, 23.6% vs 20.8%, p= 0.013, OR 0.747 [0.594-0.940]. However there was no significant difference in 6 month (38.4% vs 38.4%, p=0.166) and 1 year MACE (43.8% vs 46.7%, p=0.796). There was no difference in mortality at 1 year, 29.6% vs 29.7%, p=0.104. Incidence of heart failure at 1 year was increased but was not statistically significant, 13.6% vs 17.7%, p=0.203.

Conclusion The results confirm that the clinical pathway is associated with reduced short term mortality and MACE after myocardial infarction. However, the long term mortality and MACE remains similar with a paradoxical increase in heart failure due to more survivors.

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IMPACT OF AN EVIDENCE-BASED ENTERAL FEEDING PROTOCOL ON CRITICALLY ILL PATIENTS IN AN INTENSIVE CARE UNIT OF A REGIONAL HOSPITAL

Dr Au Shek Yin, Intensive Care Unit, Queen Elizabeth Hospital (May 2013 Critical Care Medicine Exit Assessment Exercise)

Objectives To evaluate the impact and safety of implementing an enteral feeding (EN) protocol, based on updated evidence, in critically ill patients in a local mixed medical and surgical intensive care unit (ICU)

Design This is a prospective observational 3-month study. Patients' outcomes and feeding charts in the protocol group in these 3 months were analysed, and the data were compared with that of the historical pre protocol group 3 months before the intervention

Setting A 19-bed mixed medical and surgical Intensive Care Unit of Queen Elizabeth Hospital

Patients From mid March 2012 to mid May 2012, 101 ICU patients who could not start oral feeding or who were on mechanical ventilation for more than 48 hours and who had no contraindications to enteral feeding by their physical conditions or being fasted for procedures were recruited as the protocol group. Before this was a 3-month intervention period from Dec 2011 to Feb 2012. 94 similar patients who were admitted from Sept 2011 to Nov 2011 were recruited as the historical pre protocol group.

Intervention The interventions comprised 3 components: 1) A departmental nurse-led feeding protocol with higher gastric residual volume threshold, early regular use of prokinetics and early nutritional supplement in the form of total parenteral nutrition (TPN) or post pyloric feeding to achieve energy target was set; 2) An education programme on the feeding protocol to both medical and nursing colleagues from December 2011 to February 2012 was conducted; 3) An audit on the nursing compliance to the protocol was conducted.

Measurements and Results The baseline characteristics were similar between the pre protocol (n=94) and the protocol (n=101) groups. The protocol group started EN earlier (47 hr $\pm$ 25 hr vs 69hr $\pm$ 87hr; p=0.021) than the pre protocol group and achieved the feeding target within a shorter time after ICU admission (61hr $\pm$ 28 hr vs 100hr $\pm$ 83 hr; p=0.001).

The protocol group achieved 90% ± 24% of the target feed rate on day 5 while the pre protocol group only achieved 57% ± 42% of the target feed rate on day 5 (p <0.001). The protocol group received a higher mean daily calorie (822kcal ± 400kcal vs 441kcal ± 329kcal; p <0.001); and a higher mean daily protein per body weight (0.57g/kg ± 0.35g/kg vs 0.30g/kg ± 0.26g/kg; p <0.001) when compared with the pre protocol group. In the protocol group, there was a trend towards shorter ventilator days (9 days ± 9 days vs 10 days ± 12 days; p =0.452) and a shorter ICU length of stay (11 days ± 11 days vs 13 days ± 13days; p = 0.395). There were no significant difference in the number of days on inotropes, hospital length of stay, number of patients that required care in the convalescence hospitals nor the incidence of hospital acquired infection (HAI) between the 2 groups. There was also a trend, in the protocol group, towards a lower overall mortality rate (26.7% vs 35.1%; p = 0.206). In the protocol group, there was a significantly lower percentage of patients with feeding withheld due to intolerance (7.92% vs 48.94%; p < 0.001) and a lower incidence of constipation (41.58% vs 56.38%; p = 0.039). There was a trend towards a higher mean blood glucose level at 8 am with higher mean insulin requirement at 8 am in the first few days after starting EN in the protocol group, but this did not reach statistical significance. There was no increase in the incidence of other EN related adverse effects. The overall nursing compliance to the protocol was 74%.

Subgroup analyses in patients with different body mass index (BMI), medical or surgical patients with different nature of operations still showed similar outcomes in the protocol group except in the reduction in incidence of feeding withheld due to intolerance which could not reach statistical significance in the subgroup with BMI < 18.5 kg/m^2 (14.29% vs 27.27%; p = 1.000 . Also, the number of days on inotropes in the protocol group were significantly longer in the surgical subgroup (2.8 days ± 4.1 days vs 1.0 days ± 1.5 days; p = 0.010), especially the surgical subgroup receiving emergency operation (2.4 days ± 3.3 days vs 0.9 days ± 1.3 days; p = 0.028) than the pre protocol group.

Conclusion The implementation of an evidence based enteral feeding protocol, together with an education programme and audit in a local mixed medical and surgical ICU, could improve EN delivery. There was a trend towards shorter ventilator days and ICU length of stay in the protocol group. No increase in EN associated adverse effects was noted in patients fed on the feeding protocol.

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A RETROSPECTIVE STUDY OF MYCOSIS FUNGOIDES FROM 2002 TO 2011 IN HONG KONG

Dr Chan Sheung Hey Thomas, Social Hygiene Service, Department of Health (June 2013 Dermatology and Venerology Exit Assessment Exercise)

Objective To study the epidemiology, clinical features, pathological features and treatment outcome of local mycosis fungoides (MF). To understand more about MF in Hong Kong by comparing local data with other studies and hopefully may improve our management. Variant of mycosis fungoides will be explored.

Study design This is a cross sectional retrospective study.

Patient and method Patients with newly diagnosed MF, as defined by the diagnostic criteria 43 from the International Society for Cutaneous Lymphomas (ICSL), in a 10-year period between 2002 to 2011 were recruited from 8 government skin clinics in Hong Kong. Their case records were retrieved and data were analyzed.

Results There were 45 MF patients identified during the 10-year period. The average incidence was at least 0.65 per million population per year in Hong Kong.
The male to female ratio was 2.2:1 with a statistically significant difference. The mean age at presentation was 46.2 years and age at diagnosis was 48.7 years.
Twenty-two (49%) patients were symptomatic complaining of itch and it was not correlated to stage of MF. MF located most commonly on the thighs (67%), back (56%) and abdomen (49%). Ninety-three percent of patients had patch stage, 31% plaque stage and 4% tumor stage MF. 16% patients had hypopigmented MF and the mean age at diagnosis was 39 years. 9% had poikilodermatous MF and the mean age at diagnosis was 61 years. The mean ages of both variants were not statistically different from the overall group and they were all in early stages (IA and IB).

Atypical lymphocytes (91%), epidermotropism (76%) and interphase dermatitis (58%) were the most common histological features. Immunostaining was done in 37 (82%) skin biopsies diagnosed with MF. T cell receptor gene rearrangement study was performed in 10 patients and out of these 10 patients, 8 (80%) were positive. Patients in stage IA, IB, IIB, IIIA, IVA and IVB were 58%, 24%, 7%, 2%, 7% and 2% respectively.

22 patients had topical steroids as their only treatment, 19 (95%) and 1 (5%) patients were in stage IA and stage IB respectively. 6 (30%) achieved remission with topical steroid monotherapy. 17 patients were treated by PUVA, 6 (35.3%) was in stage IA and 7 (41.2%) was in stage IB. 9 (53%) patients achieved remission after the first course of PUVA. 3 patients received NBUVB and 2 patch stage MF achieved remission. The disease progression rate was 8.9%. The 1-year and 3-year complete remission rate was 37.5% and 38% respectively. There was no patient died of MF in this study.

Conclusion This study suggested that the incidence of MF in Hong Kong had increased compared to the last local study. The distribution of lesions was mainly over the trunk and proximal limbs. The percentage of hypopigmented MF in this study was lower than that in Singapore. The local diagnostic accuracy seemed to be similar to other countries. Topical steroid and PUVA were able to achieved good clinical response in early stage MF. The response of Hong Kong people to PUVA was similar to other countries. NBUVB could be used in treating patch stage MF. The overall complete remission rate in Hong Kong was not statistically different from other country. The following issues have been identified: 1) maintenance PUVA might be avoided. 2) TCR gene rearrangement study might be done to aid diagnosis in borderline case and provide prognostic information.

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EVALUATION OF CEREBROSPINAL FLUID MARKERS AND MAGNETIC RESONANCE IMAGING OF BRAIN FOR DIAGNOSIS OF NEUROSYPHILIS

Dr Chan Yung, Social Hygiene Service, Department of Health (June 2013 Dermatology and Venerology Exit Assessment Exercise)

Background Neurosyphilis is a clinical stage of syphilis that is difficult to diagnose as there is no single reliable diagnostic test. The importance of treponemal tests in the diagnosis of neurosyphilis has been stressed in both of the latest international guidelines: US CDC sexually transmitted disease treatment guidelines 2010 and IUSTI 2008 European guidelines on the management of syphilis. However, information on diagnostic performance of CSF treponemal tests especially CSF-EIA on the local population is lacking.
There are recent retrospective reports on findings of MRI brain in neurosyphilis patients. It remains to be decided if MRI brain can provide sensitive imaging diagnosis for neurosyphilis. In addition, imaging findings from this study, incorporating advanced techniques of MR

angiography (MRA) and MR spectroscopy (MRS), may shed light into the underlying pathophysiology of the disease.

Aims This study aimed to evaluate the performance of CSF-EIA test in diagnosis of neurosyphilis. It also investigated if there are any specific MRI brain changes in these patients. This study studied the clinical features of neurosyphilis patients, treatment complication and outcome.

Methods This study is a prospective study that spanned two years from December 2009 to November 2012. All consecutive patients admitted under Social Hygiene Service for workup of neurosyphilis during the study period were included. Tests on CSF included VDRL, FTA-Abs, TPPA, EIA syphilis, CSF cell count and protein were done. The test performances of the above tests were evaluated and compared using US CDC 2006, US CDC 2010 and IUSTI 2008 guidelines.

MRI examinations were performed in all patients who consented to be imaged. The MRI images were assessed independently by two experienced radiologists who were blinded to the subjects' neurosyphilis status.

Results Forty six patients were included in the study, of which 29 were co-infected with HIV. Using diagnostic case definition standard stipulated in US CDC 2006, US CDC 2010 and IUSTI 2008 guidelines, 21, 15 and 17 patients satisfied the diagnosis of neurosyphilis respectively. CSF-EIA test showed sensitivity of 100%, specificity of 75% (95% CI 62.3-87.7%) using US CDC 2010 case definition. Specificity improved with cut-off value of 1.4 for cases with CSF-RBC < 600/mm3. Treatment for neurosyphilis was generally safe, complications included leucopenia and rash in 16.7%, fever in 11.1%, transient raised liver enzyme and thrombocytopenia in 5.6% of patients who received intravenous penicillin. MRI brain showed non-specific cerebral atrophic changes and scattered confluent T2 enhancement in both non-neurosyphilis and neurosyphilis patients.

Conclusion The present study represented the first study on CSF-EIA and the first prospective study on MRI brain in neurosyphilis. CSF-EIA showed 100% sensitivity and negative predictive value in the study population. All neurosyphilis patients in this study had at least 1:4 in their serum VDRL. MRI brain did not show specific imaging findings in asymptomatic neurosyphilis patients.

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A REVIEW OF PATCH TESTING RESULTS, CLINICAL RELEVANCE AND OUTCOMES IN LOCAL CHINESE PATIENTS

Dr Siu Fung Yee, Social Hygiene Service, Department of Health (June 2013 Dermatology and Venerology Exit Assessment Exercise)

Background Allergic contact dermatitis (ACD) is an inflammatory skin condition resulting from a delayed hypersensitivity reaction after contacting foreign substance(s). Patch testing is a valuable diagnostic tool for identifying causative allergens in patients with ACD, but its relevance to medical practice must be based on the clinical history with evidence of relevant exposure.

The Social Hygiene Service of the Hong Kong Special Administrative Region (HKSAR) introduced the 28-item European series patch testing in the year 2009, replacing the obsolete 24-item series. There had been no update on the local data of contact allergens thereafter. Moreover, patch testing outcomes such as recall of allergens, avoidance behaviour and

skin-related quality-of-life are not well known.

Aims and methods The aim of this study was to provide updated local data on the patch test allergens identified and clinical relevance of allergic contact allergens, and to assess the outcomes of patch testing.

This was a single-centre study performed at the Fanling Integrated Treatment Centre (FLITC), Social Hygiene Service. Local Chinese patients with patch testing done after the introduction of the 28-item European standard series since 2009 were eligible for enrollment. They were invited for interviews after thorough review of the clinical records and patch testing results, in order to determine the clinical relevance and patients' perception of patch testing, as well as patients' change in behaviour and quality-of-life.

Results There were a total of 146 valid patch tests performed from 2009 to 2012. The mean age was 43.55 (standard deviation 15.98) and the majority of them were female. Eight-four patients (57.5%) tested positive to one or more allergens in the patch testing. The most commonly occurring allergens were nickel sulphate (24%), fragrance mix (18%), 5-chloro-2-methyl-4-isothiazolin-3-one+ 2-methyl-4-isothiazolin-3-one (3:1 in water) (7.3%), paraphenylenediamine (6.7%), and cobalt chloride (6%).

100 patients were interviewed. Sixty-eight patients had positive patch test reactions, resulting in a total of 122 allergen reactions. 80.3% of the identified allergens were clinically relevant (45.9% definitely relevant, 34.4% probably or possibly relevant). Metal, rubber, fragrance, plastic/glues, and dye were of higher clinical relevance. Medications were of a lower degree of clinical relevance and no plant allergy was identified. 75.4% of the allergens were successfully recalled, either in their full names or substance groups. Patients with lower education level were less likely to recall the allergens identified in patch testing. Most patients adopted lifestyle changes and used protective measures to avoid the allergens. 29.4% and 36.8% of patients reported total and partial success in avoiding the identified allergens, respectively. Skin-related quality-of-life improved in the majority of patients who had positive patch testing response (17.6% much better, 41.2% somewhat better) while there was probably no change in the majority (84.4%) who had no reaction in patch testing.

Conclusion Nickel sulphate, fragrance mix, 5-chloro-2-methyl-4-isothiazolin-3-one+ 2-methyl-4-isothiazolin-3-one (3:1 in water), paraphenylenediamine and cobalt chloride are the commonest allergens identified in this study. The satisfactorily high clinical relevance of allergens identified suggested that the 28-item European series should be a suitable baseline panel in our unit. A recall rate of 75.4 % was satisfactory but extra effort may be targeted to patients with lower educational level. Patch testing was generally perceived as helpful and might lead to better skin-related quality-of-life.

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A CROSS-SECTIONAL STUDY OF CHINESE PRE-DIABETES. IS IT BENIGN OR HAZARDOUS?

Dr Chan Yuk Kit, Department of Medicine & Geriatrics, Caritas Medical Centre (May 2013 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Background Pre-diabetes is common among the Asian population. The prevalence of pre-diabetes was 15.5% in China in 2010. Around 7.9% of patients with impaired glucose tolerance had diabetic retinopathy. The prevalence of metabolic syndrome in subjects with impaired fasting glucose was 38.1%. Pre-diabetes may not be as benign as previously thought to be so.

Objectives This is a cross-sectional study in a Chinese population with pre-diabetes in a district hospital in Hong Kong. The primary objective is to study the prevalence of metabolic syndrome, micro-vascular and macro-vascular complications among pre-diabetes. The secondary objective is to determine the anthropometric profile of these individuals and to evaluate the correlation between the oral glucose tolerance test (OGTT) and the glycated hemoglobin (HbA1c) level in pre-diabetic subjects.

Method One hundred and twenty-one patients with the diagnosis of pre-diabetes confirmed by OGTT from July to December 2011 were enrolled. Data on patient demographics, co-morbidities, metabolic profile, retinal photography, and electrocardiogram were collected. The prevalence of metabolic syndrome, micro-vascular and macro-vascular complications was estimated. The correlation between the HbA1c and OGTT result was assessed.

Results Metabolic syndrome was present in 73.4% of subjects according to the International Diabetic Federation criteria. One or more micro-vascular complications and macro-vascular complications were present in 27.3% and 7.4% of subjects, respectively. HbA1c was weakly associated with fasting glucose. The Pearson's correlation between HbA1c and fasting glucose was 0.253; R2 was 6.42% (p= 0.005). However, HbA1c did not correlate with 2-hour glucose level. The Pearson's correlation between HbA1c and 2-hour glucose was 0.153; R2 was 2.37% (p= 0.092).

Conclusion Pre-diabetic subjects are at risk of micro-vascular and macro-vascular complications. It is strongly associated with the presence of metabolic syndrome as well. Hence, subjects with pre-diabetes should be identified early and lifestyle modification should be initiated once the diagnosis is made. OGTT remains the gold standard in the diagnosis of pre-diabetes. HbA1c is weakly correlated with fasting glucose but HbA1c does not correlate with 2-hour glucose in this study.

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TESTOSTERONE LEVEL IN CHINESE MEN WITH TYPE 2 DIABETES MELLITUS: IMPLICATIONS ON CARDIOVASCULAR RISK FACTORS, THE METABOLIC SYNDROME, AND ADVERSE CLINICAL OUTCOMES

Dr Cheung Kit Ting Kitty, Department of Medicine & Therapeutics, Prince of Wales Hospital
(May 2013 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Low serum testosterone level has been reported in men with type 2 diabetes mellitus (T2DM) and is found to be associated with the metabolic syndrome and adverse clinical outcomes. The situation in Chinese men with T2DM is unknown. In this dissertation, the associations between serum total testosterone with cardiovascular risk factors and the metabolic syndrome, and the predictive power of testosterone on adverse clinical outcomes were examined. A consecutive cohort of 605 Chinese men with T2DM (age 60.0 ± 11.7 years, duration of T2DM 14 [inter-quartile-range 10 to 19] years, duration of follow-up 4.2 [4.0-4.4] years) had comprehensive assessment including measurement of serum total testosterone. Of them, 15% (n=91) had low testosterone (<9 nmol/L). Testosterone was negatively associated with cardiovascular risk factors. Low testosterone remained strongly associated with the metabolic syndrome (odds ratio 1.9, 95% confidence interval [CI] 1.1-3.5, p=0.032) after adjustment for covariates. In a prospective analysis, low testosterone remained to be a predictor for the combined outcome of new cardiovascular disease (CVD) and/or all-cause mortality independent from age and disease duration (hazard ratio 1.8, 95% CI 1.0-3.1, p=0.034), although the effect was lost in the multivariate model. The incidences of CVD, all-cause mortality, and combined CVD and/or all-cause mortality were all higher in subjects from the low testosterone group. At this moment,

results from this study could not support checking testosterone in asymptomatic Chinese men with T2DM. Larger and longer-term studies are needed to clarify the role of testosterone in CVD and mortality in Chinese men with T2DM.

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METABOLIC CHANGES AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY IN A REGIONAL HOSPITAL IN HONG KONG

Dr Ho Cheuk Wah, Department of Medicine & Geriatrics, United Christian Hospital (May 2013 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Background Bariatric surgery has been an option for treatment of obesity in the western opulation since 1950s. Until recently it is found that it improves metabolic profile other than weight reduction. Bariatric surgery was introduced in Hong Kong since 2002. Data on metabolic changes after bariatric surgery among Hong Kong Chinese were limited.

Method 47 patients who received laparoscopic sleeve gastrectomy in the United Christian Hospital from June 2008 to Oct 2012 were retrospectively reviewed. Changes in body weight, fasting blood glucose, glycated haemoglobin (HbA1c), lipid profile and medication were recorded.

Result The mean age of study population was 43.7 years. The mean body mass index before operation was 39.7± 4.6 kg/m^2. The mean % excess weight loss was 53± 4.7% at post-operative one year. Mean HbA1C reduced from 7.8± 0.3% to 6.6± 0.2% at 3 months ($p<0.05$). 50% of patients had reduction in number or dosage of anti-hypertensive medication. Lipid profile also showed improvement with mean triglyceride reduced from 1.8± 0.1 before operation to 1.0± 0 mmol/l at post-operative one year ($p< 0.05$) and mean high density lipoprotein increased from 1.2± 0 to 1.4± 0.1 mmol/l ($p<0.05$). Homeostasis model assessment of insulin resistance of 5 patients collected at different post-operative period all decreased after operation.

Conclusion Laparoscopic sleeve gastrectomy showed favourable changes in several aspects of metabolic parameters. The mechanism of improvement in addition to effect from weight loss was still unclear.

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A CLINICAL AND GENETIC STUDY OF SUBJECTS WITH PHAEOCHROMOCYTOMAS & PARAGANGLIOMAS IN HONG KONG

Dr Lee Chi Ho, Department of Medicine, Queen Mary Hospital (May 2013 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Introduction Genetic testing is crucial in the management of subjects with phaeochromocytoma and paraganglioma. Ten susceptibility genes causing distinct hereditary syndromes have been discovered. Caucasian series suggested that up to 37% of these tumours are genetically determined. Nevertheless, studies involving genetic classification of Chinese subjects with phaeochromocytoma and paraganglioma are lacking.

Objectives This cross-sectional study aimed to provide a clinical and genetic summary of subjects with phaeochromocytoma and paraganglioma at a single tertiary referral centre in Hong Kong.

Methods Subjects with phaeochromocytoma or paraganglioma from Queen Mary Hospital,

Hong Kong were analyzed for the presence of seven susceptibility genes including NF1, RET, VHL, SDHB, SDHC, SDHD and TMEM 127. Clinical indicators were assessed for their association with the presence of germline mutations.

Results Forty-one Chinese subjects were included for analysis. Germline mutations were found in 24.4% of them and 13.9% of subjects with an apparently sporadic presentation had hereditary disease. There were two novel mutations involving SDHB and SDHD. With the increasing number of clinical indicators, namely age of onset younger than 45 years, bilateral disease, multiplicity, extra-adrenal disease, malignant or recurrent tumours, subjects were more likely to harbour germline mutations of one of the susceptibility genes. ($r = 0.681$, $p = 0.016$).

Conclusions The prevalence rate of germline mutations among Chinese subjects with phaeochromocytoma and paraganglioma in Hong Kong was comparable with Caucasian data. The known clinical indicators for hereditary disease were also applicable to Chinese subjects.

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EFFECTS OF BARIATRIC SURGERY ON CARDIO-METABOLIC RISK PROFILES IN OBESE HONG KONG CHINESE ADULTS

Dr Wu Enoch, Department of Medicine & Therapeutics, Prince of Wales Hospital (May 2013 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

The twin epidemics of obesity and diabetes are increasingly a health, psychosocial and economical burden, andbariatric surgery has emerged as a powerful adjunct to lifestyle and medical interventions in the management of thesechallenging conditions.

In 2002-2008, 99 Chinese adults, with mean age 38 and BMI 41kg/m2, were recruited for bariatric surgery at the Prince of Wales Hospital. 59 underwent laparoscopic adjustable gastric banding (LAGB), 33 underwent laparoscopic sleeve gastrectomy (LSG) and 7 underwent laparoscopic gastric bypass, achieving significant weight reductionsafter two yearsreaching 12%, 28% and 32%, in each grouprespectively.

Favourable changes in cardio-metabolic risk factorsover two years were demonstrated for the cohort as a whole. When each surgical group was analysedindividually, LSG resulted in statistically significant improvements in more metabolic parameters compared to the other two groups.Therewasa generalimprovement in glycaemic measuresin patients with or without diabetes, accompanied by an overallreduction in use of anti-diabetic therapy. None of the pre-diabetic patients progressed to type 2 diabetes. Amongthe 29subjects with diabetes at baseline, two-year diabetes remission rates of 29%, 75% and 100% were achieved in LAGB, LSG and bypass groups respectively, with the remitters having shorterdiabetes duration, fewer diabetes medication, higher BMI and anthropometric measures at baseline. Health-related quality-of-life measures also significantlyimproved after bariatric surgery.

Bariatric surgery is a favourable treatment optionof severe obesity in Hong KongChinese adults. Appropriate patient selectionand counsellingmay help optimise the outcomes of bariatric surgery,

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CLOSTRIDIUM DIFFICILE INFECTION IN IMMUNOCOMPROMISED AND NON-IMMUNOCOMPROMISED HOSTS – CLINICAL FEATURES, SEVERITY AND OUTCOMES OF A SINGLE-CENTRE EXPERIENCE

Dr Cheung Sai Wah, Department of Medicine & Geriatrics, Tuen Mun Hospital (June 2013 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Clostridium difficile infection (CDI) is the most common nosocomial and antibiotic-associated diarrhoeal disease. It carries morbidities, mortality, and recurrence and patients with immunocompromised status are particularly at risk of complications and severe disease in the Western literature, but local clinical data is lacking.

Aim To compare the clinical characteristics and outcomes of immunocompromised and non-immunocompromised patients presented with CDI and to identify potential predictors for severe disease.

Patient and Methods 220 patients with diarrhoeal disease and positive Clostridium difficile PCR were recruited (1st May 2010 - 1st April 2012) in Tuen Mun Hospital for retrospective review and classified into immunocompromised and non-immunocompromised groups. Clinical predictors for 30-day mortality and 60-day recurrence were analyzed.

Results Of the 220 patients, 122 (55.5%) were immunocompromised and 98 (44.5%) were non-immunocompromised. The immunocompromised patients were younger (71 vs 79 years old, P<0.001) but had a higher risk of treatment failure (26.7% vs 10.8%, P=0.007), complicated CDI (63.9% vs 23.5%, P<0.001), 60-day recurrence (18.9% vs 9.2%, P=0.043) and a longer disease duration (mean: 10.1 vs 7.57 days, P=0.002). The overall 30-day mortality in the cohort was 27.7% (61/220). Multivariate analysis with odds ratio (OR) and 95% confidence interval (CI) was performed to identify the independent predictors for 30-day mortality: hostel residency (OR: 2.33, CI 0.99-5.5), chronic kidney disease (OR: 2.74, CI 1.12-6.7), metronidazole treatment <10 days (OR 2.31, CI 1.04-5.11), PPI use (OR: 2.4, CI 1.03-5.54), and an albumin level <30g/L (OR: 2.31, CI 1.04-5.14), and for 60-day recurrence: hostel residency (OR: 2.56, CI 1.07-6.1) and duration of disease ≥ 10 days (OR: 2.55, CI 0.997-6.52).

Conclusions CDI indicates significant rates of complications and mortality in our locality, particularly in patients suffering from immunocompromising comorbidities. The clinical predictors for adverse outcome are hostel residency, chronic kidney disease, a low albumin level, a shorter duration of metronidazole treatment, use of proton-pump inhibitors, and a longer duration of disease.

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STUDY OF DIURNAL AND SHORT TERM LIVER STIFFNESS VARIABILITY IN PATIENTS WITH CHRONIC HEPATITIS B INFECTION

Dr Lam Long Yan Kelvin, Department of Medicine and Therapeutics, Prince of Wales Hospital (June 2013 Gastroenterology & Hepatology Exit Assessment Exercise)

Objective To evaluate if liver stiffness measurement changes during the day and within a short period of time (2 weeks) in order to examine the reproducibility of liver liver stiffness scorestiffness scores in assessing liver fibrosis.

To evaluate intra-observer variation of Controlled Attenuation Parameter (CAP to measure liver steatosis in patients with chronic hepatitis B.

Methods CHB patients treated with antiviral therapy with good biochemical and virological response were recruited for transient elastography and CAP. Measurements were repeated on the same day afternoon and at week 2.

Results This study showed good intra-observer variation in measurement liver stiffness. The kappa value was 0.8 ($p<0.001$) when comparing the results at week 0 and week 2 morning liver stiffness. When combined week 0 and week 2 results, there was significant increase in liver stiffness by 0.5kPa ($p=0.01$) in afternoon compared with morning measurements. However, the magnitude of difference was too small to alter clinical management. The intra-observer variation in Controlled Attenuation Parameter (CAP) to assess liver steatosis showed poor agreement (kappa 0.25)

Conclusion There is a mild increase in liver stiffness by Fibroscan when comparing afternoon measurements (2-3pm) with morning measurement (9-10am). However, the intra-observer variation for CAP showed poor correlation. Further studies to identify the factors affecting intra-observer variation should be pursued.

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HLA-DP AND INTERFERON GAMMA PATHWAY GENETIC VARIANTS AND THEIR ASSOCIATION WITH VIRAL HEPATITIS ACTIVITY IN CHRONIC HEPATITIS B PATIENTS

Dr Lam Yuk Fai, Department of Medicine, Queen Mary Hospital (June 2013 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Genome wide association studies show that polymorphisms in human leukocyte antigen (HLA) -DP loci are associated with persistence of chronic hepatitis B infection. Currently there are no studies evaluating the association of HLA-DP polymorphism with viral activity in Chinese chronic hepatitis B patients. There is one study showing that genetic polymorphisms along the interferon- gamma signaling pathway are associated with viral load in chronic hepatitis B patient.

Methods We determined the polymorphisms on HLA-DP locus (rs3077) and on interferon gamma signaling pathway (rs2284553 and rs9808753) of 100 treatment-naive HBeAg-negative chronic hepatitis B patients with undetectable HBV DNA and another 100 age- and sex- matched controls with high HBV viral load (DNA > 4 log(10) copies per ml). Associations between genetic polymorphisms and viral activity were analyzed.

Results The median age at recruitment was 48.2 (range: 20.4-77.4) and 61% were male patients. The median HBV DNA level for patient in the control group was 87300 copies per ml (range: 12510- 17983800). The distribution of the three polymorphisms were in Hardy-Weinberg equilibrium. Both HLA-DP polymorphism rs3077 and interferon gamma signaling pathway polymorphism rs2284553 were not associated with HBV viral load in HBeAg-negative chronic hepatitis B patients in terms of allelic frequency, genotypic frequency, dominant/ recessive gene action. Interferon gamma signaling pathway polymorphism SNP rs9808753 was associated with a reduced probability of "undetectable HBV DNA" for patients below 50 years old in allelic frequency analysis (odds ratio [OR], 0.562; 95% confidence interval [CI], 0.326-0.967; p value= 0.037). Interferon gamma signaling pathway polymorphism haplotype block (rs2284553/ rs9808753) was also not associated with viral activity in HBeAg-negative chronic hepatitis B patients.

Conclusion There was no significant association between HLA-DP polymorphism rs3077 and interferon gamma signaling pathway polymorphisms rs2284553 with viral activity in HBeAg negative Chinese chronic hepatitis B patients. Interferon gamma signaling pathway polymorphism (rs9808753) was associated with reduced probability of "undetectable HBV DNA" in HBeAg negative chronic hepatitis B patients who are below 50 years old in

subgroup analysis.

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10-DAY SEQUENTIAL VERSUS 10-DAY BISMUTH-CONTAINING QUADRUPLE THERAPY AS EMPIRICAL FIRST-LINE TREATMENT FOR *HELICOBACTER PYLORI*: AN OPEN LABEL RANDOMIZED CROSSOVER TRIAL

Dr. Liu Sze Hang Kevin, Department of Medicine, Queen Mary Hospital (June 2013 Gastroenterology & Hepatology Exit Assessment Exercise)

Background The eradication rate of conventional clarithromycin-based triple therapy has been declining in most countries. Alternative treatments with sequential (SEQ) and bismuth-based quadruple (QUAD) therapy were proposed. Direct comparison between the two treatments is lacking.

Aim To compare the efficacy and tolerability of 10-day SEQ with 10-day QUAD as first line treatment of *H. pylori* in Hong Kong.

Methods Consecutive *H. pylori* positive, treatment-naïve patients were randomly allocated to receive either SEQ or QUAD. Patients would crossover to receive the alternate regimen if urea breath test remained positive at 8 weeks after the completion of the initial assigned treatment. The primary outcome was the eradication rate in first line treatment by intention-to-treat (ITT) and per-protocol (PP) analyses.

Results A total of 357 consecutive HP positive patients were recruited with 179 in SEQ and 178 in QUAD. The baseline characteristics and endoscopic diagnoses of the two groups were comparable. The PP eradication rate of the SEQ and QUAD groups were 95.2% and 98.8%, respectively (P = 0.10). Base on ITT analysis, the eradication rate was 89.4% in SEQ and 92.7% in QUAD (p=0.36). Eight (4.8%) patients in the SEQ and two (1.2%) patients in the QUAD failed the initial assigned treatment. All were successfully eradicated by the second course of treatment. The overall incidences of adverse events were similar in SEQ (10%) and QUAD (12.3%).

Conclusions Ten-day sequential therapy and bismuth-containing quadruple therapy are both highly effective as first line therapy for *H. pylori* in Hong Kong.

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ENTECAVIR SWITCH THERAPY IN CHRONIC HEPATITIS B PATIENTS WITH INCOMPLETE VIROLOGIC RESPONSE TO TELBIVUDINE

Dr Lo Oi Shan Angeline, Department of Medicine and Therapeutics, Prince of Wales Hospital (June 2013 Gastroenterology & Hepatology Exit Assessment Exercise)

Background The roadmap concept suggests the use of on-treatment HBV DNA to guide treatment strategy of chronic hepatitis B patients treated by telbivudine.
Aim: To evaluate the efficacy of entecavir switch therapy in patients with incomplete response to telbivudine

Methods Consecutive chronic hepatitis B patients on telbivudine monotherapy attending the Prince of Wales Hospital were studied. Incomplete virologic response was defined as detectable HBV DNA after 6-12 months of treatment. These patients were recruited into a prospective study of entecavir switch therapy versus telbivudine, with regular 3-6 monthly follow-ups. The primary efficacy endpoint was maintained virologic response, defined as

undetectable HBV DNA till last follow-up. Genotypic resistance testing was performed on incomplete responders to telbivudine.

Results Among 79 patients on telbivudine, 40 (51%) had incomplete virologic response after 6-12 months of telbivudine treatment. Thirty-three switched to entecavir at 11 (6-23) months and 26 (79%) achieved maintained virologic response after 25 (4-46) months. Low HBV DNA level before switch therapy was the independent factor associated with maintained virologic response to entecavir ($p = 0.01$). Twenty-four of 25 (96%) patients with HBV DNA <2000 IU/ml versus 2 of 8 (25%) patients with HBV DNA ≥2000 IU/ml had maintained virologic response after switching to entecavir. While rtM204I and/or rtL180M was detected in 3 of 7 patients with incomplete virologic response to entecavir, none of the patients with HBV DNA <2000 IU/ml during telbivudine treatment harbored these amino acid substitutions.

Conclusion Roadmap approach using entecavir switch at month 6-12 among incomplete responders to telbivudine is efficacious if the HBV DNA is <2000 IU/ml at the time of switching.

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DOES HEPATOCELLULAR CARCINOMA SURVEILLANCE RESULT IN LONGER SURVIVAL: A DISTRICT HOSPITAL EXPERIENCE

Dr Wong Wai Chuen, Department of Medicine and Geriatrics, Caritas Medical Centre (June 2013 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Hepatocellular carcinoma (HCC) is the third commonest cancer death in Hong Kong. Several international liver associations recommended HCC surveillance in high risk subjects. However, evidence about effectiveness of HCC surveillance in real life practice in non-academic hospital is limited.

Objective To evaluate any survival difference between surveillance and non-surveillance groups of HCC patients and to identify prognostic factors.

Subjects and Methods HCC surveillance consisted of six-monthly testing of ultrasound abdomen and serum alpha feto-protein. All HCC patients were enrolled between January 2000 and December 2008 and followed up until June 2012. The surveillance and non-surveillance groups consisted of 91 and 127 HCC patients respectively.

Result Compared to the non-surveillance group, the surveillance group had smaller tumor (3.1 vs. 5.4cm; $P < 0.001$), less portal vein invasion (5% vs. 18%; $P = 0.002$), more unifocal HCC (71% vs. 58%; $P = 0.05$) and early tumor stage (59.3% vs. 17.3%; $P < 0.001$). More patients in the surveillance group received curative therapy (surgical resection: 35% vs 22%, $P = 0.032$; local ablative therapy: 17% vs 6%, $P = 0.009$). Median survival was significantly longer in surveillance group than that in non-surveillance group (29.2 months vs. 14.6 months; $P < 0.001$). Multivariate analysis showed that absence of portal vein thrombosis, Child's A grading, very early and early tumor stage, unifocal tumor and having hepatectomy were independent favourable prognostic factors.

Conclusion HCC surveillance conducted in a non-academic hospital could detect HCC at early stage that is potentially amenable to curative therapy, thus resulting in longer survival.

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EFFECTIVENESS OF FALL CLINIC IN GERIATRIC DAY HOSPITAL FOR PREVENTION OF FALLS

Dr. Cheng Jen Ngai, Department of Medicine and Geriatrics, Caritas Medical Centre (June 2013 Geriatric Medicine Exit Assessment Exercise)

Background Falls are common in elderly and they can cause serious consequences, including substantial injuries, hospitalization and disability. Preventing falls in elderly is always important. Research supports the effectiveness of multi-factorial falls prevention programs and Fall Clinics are the usual venues for falls risk assessment. There were a number of studies in different countries evaluating their Fall Clinics, but there were few similar studies locally. This retrospective study aimed to study the characteristics of patients at a local Fall Clinic and evaluate its effectiveness in falls prevention. It also aimed to identify risk factors for repeated fallers despite Fall Clinic interventions so that other means of prevention can be implemented.

Method This is a retrospective cohort study conducted in Caritas Medical Centre in Hong Kong. A total of 192 patients with history of falls within 6 months before assessment at the Fall Clinic between April, 2007 and April, 2011 were recruited. The demographic and clinical data, as well as the falls histories of patients were reviewed. Falls risk assessment and interventions at the Fall Clinic were recorded. All patients had phone follow up at 1, 3 and 6 months after discharge from the Fall Clinic, with number of falls, number of falls related injuries and medical attention recorded in each phone follow up. Comparisons were made on falls data before and after Fall Clinic interventions. All patients who had successful phone follow up were divided into Repeated Fall Group and Non-Fall Group. Comparisons were made between the two groups for risk factors of repeated falls after Fall Clinic assessment and interventions.

Result The falls rate (number of falls per person) was 3.92 before Fall Clinic assessment. The falls rate significantly reduced to 0.8 after interventions. (P<0.001). The number of falls related injuries and falls related admission were both significantly reduced (P<0.001). There were significant improvements in the mobility and functional scores. The median EMS was 12 and 14 respectively before and after training (Z=-6.774, P=0.001); the median BBS was 27 and 36 respectively before and after training (Z=-7.907, P=0.001); the median BI was 72 and 81.5 respectively before and after training (Z=-7.268, P=0.001). Logistic regression showed that parkinsonism (odds ratio: 2.80, P =0.012), depression (odds ratio: 2.62, P=0.041), higher body mass index (odds ratio: 1.119, P=0.019) and higher number of training days (odds: ratio 1.062, P =0.006) were associated with increased likelihood of repeated falls.

Conclusion A multi-disciplinary multi-factorial Fall Clinic at the Geriatric Day Hospital may achieve reductions in the number of falls, falls related injuries and falls related medical attention. There were significant improvements in mobility, balance and functional scores after training at the Geriatric Day Hospital. Parkinsonism and depression were clinically significant predictors of repeated falls, particular attentions should be given to prevent further falls of these patients.

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VENOUS THROMBOEMBOLISM IN CHINESE PATIENTS IN HONG KONG

Dr Chan Sau Yan Thomas, Department of Medicine, Queen Mary Hospital (May 2013 Haematology & Haematological Oncology Exit Assessment Exercise)

Deep vein thrombosis (DVT) and pulmonary embolism (PE) are two closely related clinical conditions which pose significant morbidity and mortality[1]. Venous thromboembolism (VTE)

denotes the pathological process behind both DVT and PE. Compared with the situation in Caucasian countries, where its prevalence is high[2], VTE received much less attention in Asia, mainly due to perceived rarity of the condition. It was a widely accepted belief that VTE is much less common in Asians than in Caucasians. Such observation stemmed in 1960's when Tinckler[3] first published about the absence of postoperative pulmonary embolism in Asian during his practice in Singapore. Subsequent publications[4-10] further perpetuated such perception.

However, recent studies looking into the prevalence of VTE in general and specific patient population in Asia show that it might not be as rare as it was thought[11-13]. In a study[13] recruiting 407 Asian patients undergoing operation for hip fracture, total knee or hip replacement, DVT was diagnosed in 41% of evaluated patients using venography, a figure that is comparable to that of the western population[14]. It is unknown whether this increase in prevalence is due to an increase in awareness or other factors yet to be identified.
Studying into the prevalence of VTE in Asian population is therefore intriguing; the explanations behind the apparent ethnic disparities in the prevalence may also help us to understand some genetic and environmental influences pertaining to pathogenesis of VTE. In Hong Kong where there is a predominance of Chinese population, a set of similar data was published previously more than 10 years ago[15], by comparing with previous local data, we might also be able to gain insights in the trend of prevalence of VTE in Chinese.
In this study, we examined a cohort of Chinese patients diagnosed to have deep vein thrombosis and pulmonary embolism in a tertiary institution in Hong Kong. The calculated prevalence was compared with reference to previous published Chinese data, and risk factors associated with VTE were studied in details.

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RELAPSED ACUTE PROMYELOCYTIC LEUKAEMIA IN THE ORAL ARSENIC TRIOXIDE ERA: A 12-YEAR PROSPECTIVE FOLLOW-UP STUDY

Dr Singh Gill Harinder, Department of Medicine, Queen Mary Hospital (May 2013 Haematology & Haematological Oncology Exit Assessment Exercise)

Despite excellent response rates and long-term survival with current treatment strategies, multiple relapses and central nervous system (CNS) disease remain a major cause of treatment failure and mortality in patients with acute promyelocytic leukaemia (APL). In this study, 169 patients with APL exposed to oral arsenic trioxide (As2O3) during maintenance at first complete remission (CR1) or as re-induction and subsequent maintenance were prospectively followed. Clinicopathologic characteristics, treatment characteristics and outcome of relapsed APL were reviewed. A total of 79 patients had 1 or more relapses including 14 patients with CNS involvement. Non-arsenic trioxide-based maintenance regimens at CR1 and high peak white blood cell (WBC) count were independently associated with increased risk of relapse ($P < 0.001$ and $P = 0.008$ respectively). Three different patterns of relapse were compared. There were 65 patients with isolated medullary relapse, 8 patients with concurrent bone marrow and CNS involvement at relapse, and 6 patients with isolated CNS relapse. High WBC count at presentation was associated with higher risk of subsequent isolated CNS relapse ($P = 0.007$). Patients with 2 or more relapses also had a higher risk of concurrent medullary and CNS relapse as well as isolated CNS relapse ($P= 0.003$). Relapse while on arsenic maintenance was associated with CNS involvement at relapse ($P = 0.001$). Relapse while on oral arsenic trioxide was also associated with a worse overall survival (RR = 9.43, $P < 0.001$, 95% CI: 4.01 - 21.32). Concurrent bone marrow and CNS relapse was associated with the worst survival (RR = 22.84, $P < 0.001$, 95% CI: 5.88 - 88.74). Patients with 3 or more relapses had the worst overall survival (RR = 16.45, $P < 0.001$, 95% CI: 4.49 - 60.34). Multiple relapses, high WBC count and relapse while on oral As2O3 were associated

with a higher risk of CNS involvement and in turn a worse overall survival. Identification of such risk factors is important in formulating effective treatment and prophylactic protocols for high-risk APL patients.

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CLINICAL PRESENTATIONS AND OUTCOMES IN PATIENTS WITH STREPTOCOCCUS MILLERI BACTEREMIA IN TWO REGIONAL HOSPITALS

Dr Lam Kwok Wai, Department of Medicine and Geriatrics, Caritas Medical Centre (June 2013 Infectious Disease Exit Assessment Exercise)

Background *Streptococcus milleri* group of organisms are frequently associated with local suppurative infections. It has been suggested that *Streptococcus milleri* bacteremia is a significant indicator for occult abscess. Studies about the clinical significance of *Streptococcus milleri* bacteremia are lacking especially in our local setting.

Objectives To investigate the demographics, clinical features and outcomes of patients with *Streptococcus milleri* bacteremia in Hong Kong.

Methods The clinical and laboratory records of all consecutive patients with *Streptococcus milleri* bacteremia in two regional hospitals from 2008 to 2011 were reviewed. The clinical presentations and outcomes in relation to different species were studied. Prognostic factors were also studied.

Results Seventy nine cases were analyzed. *Streptococcus anginosus*, *constellatus* and *intermedius* constituted 37, 34 and 8 cases respectively. Bacteremia without local infection (primary bacteremia) was found in 27 cases (34%). Local infection without abscess formation was found in 33 cases (42%) while local infection with abscess formation was found in 19 cases (24%). Patients with younger age and higher C-reactive protein levels were more likely to develop abscesses. The most commonly associated local infection was intra-abdominal infections. Head and neck infections were exclusively caused by *Streptococcus constellatus*. 36% of cases had polymicrobial bacteremia and it was more commonly found in cholangitis. All isolates were susceptible to penicillin. All-cause 30-day mortality was 21%. Lower hemoglobin level and requirement of mechanical ventilation were poor prognostic factors in multivariate analysis.

Conclusion Bacteremia with *Streptococcus milleri* is not uncommonly encountered and is often associated with local infections. Abscess formation is found in around one fourth of cases. Clinical awareness and investigations for source identification are needed.

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PROGNOSTIC IMPLICATION OF HPV GENOTYPES IN CERVICAL CANCER PATIENTS UNDERGOING PRIMARY TREATMENT

Dr Lau Yat Ming, Department of Medicine & Geriatrics, United Christian Hospital (June 2013 Medical Oncology Exit Assessment Exercise)

Study Objective The objective of this retrospective study is to determine if specific HPV genotypes have prognostic significance in cervical cancer patient after primary treatment in terms of overall survival (OS), disease free survival (DFS) and disease specific survival (DSS).

Method A total of 236 patients with International Federation of Gynaecology and

Obstetrics (FIGO) Stage I–III cervical carcinoma diagnosed between 1997-2009 were identified from existing local database. Data on HPV genotyping was retrieved. Presence of HPV from operative specimen was determined by polymerase chain reaction (PCR) using consensus primers, PGMY09/11. HPV-positive specimens were typed by Linear Array HPV Genotyping Test. Survival data was analysed in relation to HPV genotypes and clinicopathological characteristics.

Result All tumor specimens contained HPV DNA. The four most prevalent genotypes were HPV-16(60.2%), 18(21.6%), 52(11.8%), 58(9.3%). Multiple HPV genotypes occurred in 19%. Median follow-up time was 7.99 years. On univariate analysis, factors associated with 5-year OS include age, FIGO stage, tumor size, parametrial involvement, vaginal involvement, lymph node metastasis and primary treatment modality; factors associated with 5-year DSS include FIGO stage, tumor size, parametrial involvement, vaginal involvement, lymph node metastasis, primary treatment modality, positivity of non-HPV16 genotypes of the alpha 9 species, and single HPV 16 genotype; factors associated with 5-year DFS include FIGO stage, tumor size, parametrial involvement, vaginal involvement, lymph node metastasis, single HPV infection and positivity of non-HPV16 genotypes of the alpha 9 species. On multivariate analysis, factors associated with 5-year OS include age, tumor size, lymph node metastasis and primary treatment modality; factors associated with 5-year DSS include tumor size, lymph node metastasis and primary treatment modality; factors associated with 5-year DFS include lymph node metastasis and primary treatment modality.

Conclusion Although univariate analysis showed (i) association between single HPV 16 genotype and DSS, (ii) association between single HPV infection and DFS, and (iii) association of the presence of alpha 9 species non-HPV16 genotypes with DSS and DFS, multivariate analysis did not show any association of HPV genotypes to be a prognostication for outcome of cervical cancer.

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INHIBITOR OF MTOR PATHWAY AS A POTENTIAL TREATMENT FOR PATIENTS WITH HEPATOCELLULAR CARCINOMA (HCC): A PHASE I STUDY OF TEMSIROLIMUS AS A NOVEL THERAPEUTIC IN ADVANCED HCC

Dr Lee Wai Chung Kirsty, Department of Clinical Oncology, Prince of Wales Hospital (June 2013 Medical Oncology Exit Assessment Exercise)

Background Hepatocellular carcinoma (HCC) is the third leading cause of cancer mortality in Hong Kong and worldwide. Sorafenib is the only systemic treatment to demonstrate a survival benefit in advanced HCC, but only conferred a progression free survival benefit of 2.7 months. There is a pressing need for new therapeutic strategies for advanced HCC. Preclinical and observational studies showed that the PI3K/Akt/mTOR pathway is implicated in HCC, and preliminary studies of mTOR inhibitors show promising results. There is no data on the dose limiting toxicities of temsirolimus in liver cirrhosis, a common comorbidity occurring patients with HCC.

Objectives This phase I study aimed to establish the maximum tolerated dose (MTD) and the dose limiting toxicities (DLTs) of temsirolimus given as a weekly dose in patients with advanced HCC and Child-Pugh A grading.

Methods Patients with unresectable HCC, ECOG score ≤ 2 and adequate organ function were recruited based on the conventional 3+3 design for phase I trials. Temsirolimus was administered IV in 250ml NS over 30 minutes on day 1, 8 and 15 every 3 weeks. Dose levels were 20mg (dose level 1), 25mg (dose level 2) and 30mg (dose level 3). Dose limiting

toxicities (DLTs) were defined as grade 4 hematological toxicity or grade 3 or 4 non-hematological toxicity during cycle 1 (according to NCI CTC V.3) or treatment delay > 2 weeks. The MTD was defined as the dose below which 2 of 3, or ≥ 2 of 6 patients experienced DLT. Up to 10 patients were treated at the MTD to further define toxicity.

Results and Conclusion 19 patients were entered: 3 patients at dose level 1, 10 patients at dose level 2, 6 patients at dose level 3. 2 of 6 patients developed DLTs at dose level 3. DLTs included grade 3 syncope and delay in treatment for > 2 weeks due to prolonged neutropenia. The MTD of temsirolimus as a weekly dose in HCC patients with Child-Pugh A score was 25mg in this study. One of the 10 patients experienced further DLT at the established MTD (dose level 2), with grade 3 stomatitis occurring at cycle 1 resulting in treatment discontinuation.

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NON-AIDS DEFINING MALIGNANCIES AMONG HIV-INFECTED PATIENTS IN A TERTIARY REFERRAL CENTER IN HONG KONG

Dr Mak Wing San, Department of Medicine, Queen Elizabeth Hospital (June 2013 Medical Oncology Exit Assessment Exercise)

Purpose To investigate the pattern of non-AIDS defining malignancy (NADM) and describe the survival trend among human immunodeficiency virus (HIV)-infected individuals in a tertiary referral center in Hong Kong.

Methods We have investigated the occurrence of NDAM in a retrospective observational study of 1,523 HIV-infected patients. Baseline demographics, immunological data, the use of highly-active anti-retroviral therapy (HAART), details of malignancy and their treatment were analyzed. Survival was analyzed by Kaplan-Meier and Cox proportional hazards model. Literature was reviewed to update on the management of NADM among HIV-positive patients.

Results From November 1993 to March 2013, a total of 41 NADM was diagnosed in 39 HIV-positive patients. Lung cancer, anogenital cancer, head and neck cancer, and hepatocellular carcinoma were the most common malignancies among the NADM. Compared with the 65 patients diagnosed with AIDS-defining malignancy (ADM), patients with NADM were significantly older at cancer diagnosis (age 53 vs. 47, p=0.01), had a significantly longer duration of HIV infection (94 vs. 2 months, p<0.0001), were more likely to be recipients of HAART (92% of patients with NADM vs. 77% of patients with ADM, p=0.028), and had a significantly higher CD4 count at cancer diagnosis (257 vs. 76 cells/ul, p=<0.0001). Survival of patients with NADM was not dependent on age, CD4 count at diagnosis of malignancy, and treatment with HAART. Review of literature has suggested that the incidence of NADM is rising, and optimal treatment of various NADM among HIV-positive patients is not yet defined.

Conclusion NADM are of growing importance among HIV-infected patients as this population lives longer. Clinicians should be well-equipped to face the changing trend and meet the challenges.

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LATE ACUTE REJECTION AFTER KIDNEY TRANSPLANTATION – A LOCAL SURVEY FOCUSING ON RISK FACTORS AND PROGNOSIS

Dr. Mok Ming Yee, Department of Medicine, Queen Mary Hospital (June 2013 Nephrology

Exit Assessment Exercise)

Late acute rejection (LAR) after kidney transplantation, defined by its occurrence beyond one year after the transplant operation, has been associated with chronic allograft dysfunction and inferior allograft survival. We conducted a retrospective single-centre study to investigate the characteristics, risk factors, and outcome of LAR. Thirty-two episodes of LAR occurred within the period from 1-Jan-2000 to 31-Dec-2011 at 84 ± 72.0 months after transplantation. These were compared with Controls with stable graft function matched for immunosuppressive regimen, era of kidney transplant operation, type of allograft, age, and gender. The follow-up after transplantation was 150.8 ± 81.9 months and 151.7 ± 81.2 months in LAR subjects and Controls respectively. Retrospective analysis indicated inadequate immunosuppression as a probable cause in 56.3% of the episodes of LAR. Acute rejection within the first year after transplantation (OR 3.24, 95% CI 0.98 – 10.68; p=0.053) and female donors (OR 4.40, 95% CI 0.975-19.851; p=0.054) both did not reach statistical significance as risk factors for LAR. LAR was associated with inferior allograft survival (p<0.001) but similar patient survival (p=0.122) compared with Controls. Graft survival one year after LAR was 76%. There was no difference in clinical presentation, risk factors and allograft survival between cellular or antibody-mediated LAR. The results demonstrate the importance of adequate immunosuppression in the prevention of LAR after kidney transplantation and minimization must be practised with caution.

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INTRACEREBRAL HAEMORRHAGE IN PATIENTS WARFARINIZED FOR NON-VALVULAR ATRIAL FIBRILLATION (NVAF) AND THE USE OF HAS-BLED SCORE IN ADDITION TO CHA2DS2-VASC SCORE TO REFINE THE DECISION ON ANTICOAGULATION FOR NVAF PATIENTS

Dr Fong Man Kei, Department of Medicine & Geriatrics, Princess Margaret Hospital (June 2013 Neurology Exit Assessment Exercise)

Background Atrial fibrillation(AF) can result in catastrophic thromboembolic complications. Warfarin reduces thromboembolic risk but is under-utilized for the fear of major bleeding. CHA2DS2-VASc and HAS-BLED scores are helpful for risk stratification.

Objective Part I-To compare the CHA2DS2-VASc and HAS-BLED scores among warfarinized non-valvular AF(NVAF) patients with and without intracerebral haemorrhage(ICH). Part II-To study the clinical course and outcome of warfarin-related ICH.

Methods Three patient groups were retrospectively studied. Case-Warfarinized NVAF patients with ICH(PMH/QEH/CMC) during 1.1.2006-31.12.2011. Part I reference-Warfarinized NVAF patients(PMH) without ICH during 1.7.2011- 31.10.2011. Part II control-Non-warfarin ICH patients(PMH) matched with the case group for gender, age(+/- 1 year) and admission year, in one to one ratio.

Results Part I-114 cases and 661 references were recruited. Case group had higher median CHA2DS2-VASc score(5 vs 4,p=0.011) and more patients in high bleeding risk category than reference group (46.5% vs 36.6%,p=0.033). Most anticoagulated patients(99.1%) had appropriate benefit-risk balance. Part II-Mean admission INR was 2.8. Eighty-two patients(73.2%) had ICH despite admission INR did not exceed therapeutic range(INR<=3.0). Initial ICH volumes were comparable among case and control groups. Majority of patients in both groups had poor functional outcome at 6 months. Warfarin-related ICH had higher inpatient mortality(51.8% vs 36.0%,p=0.02) and 6-month mortality(60.5% vs 43%,p=0.01) than non-warfarin ICH. Lower admission Glasgow Coma Scale score(p=0.001), higher initial

ICH volume(p=0.003) and higher ICH score(p<0.001) were predictors of poor outcome.

Conclusion Warfarin-related ICH in NVAF patients had significant morbidity and mortality. CHA2DS2-VASc score and HAS-BLED score are useful risk stratification tools to guide treatment in NVAF patients.

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ACUTE ISCHEMIC STROKE IN PATIENTS WITH ATRIAL FIBRILLATION AND THEIR USE OF WARFARIN

Dr Leung Yan Ching, Integrated Medical Service, Ruttonjee Hospital (June 2013 Neurology Exit Assessment Exercise)

Atrial Fibrillation (AF) is the most common cardiac disorder. The prevalence of AF increases with advancing age, with a prevalence ranging from 0.1% in patients <55 years old to 9.0% in those ≥ 80 years of age.[1] AF is a growing problem and it is estimated that between 6 million and 16 million people in the US will suffer with this rhythm disorder by 2050.[2,3] This is due to ageing population worldwide and the increased survival of patients with chronic heart disorders which predispose to AF.

AF is a strong independent risk factor for ischemic stroke (IS), with as much as 5-fold increase in risk.[4,5] The attributable risk of IS from AF rises from 1.5% for patients aged 50 to 59 years, to 23.5% for patients aged 80 to 89 years[6]. It is particularly dangerous for elderly patients who are 80 years or older, with a 30% attributable risk of stroke in this patient group compared to 15% in patients of all ages. [7]

Approximately 15% of acute ischemic strokes occur in people with AF, and AF itself serves as an independent predictor of morbidity and mortality in IS.[8] Strokes in AF patients are generally more severe and with longer hospital stay, greater disability and with greater mortality.[4,9]

Cerebrovascular mortality is one of the most common causes of death worldwide, and 87% of these deaths occur in low- and middle-income countries.[10,11] Until 2003, stroke was the third leading cause of death (after neoplasm and heart diseases) in Hong Kong.[12,13], and since then it has become the fourth leading cause of death (pneumonia being the third).[14] The proportion of ischemic strokes in our local population had increased from 62% in 1984 to 84% in 2002.[15,16,17] The current American Heart Association and American Stroke Association guidelines suggest anticoagulation therapy as a class 1A recommendation in patients with AF and IS or transient ischemic attack (TIA).[18]

For decades, AF patients are managed with vitamin K antagonists such as warfarin to prevent stroke in patients with moderate to high risk of stroke. [19,20] Warfarin reduces stroke by about 60% in patients with AF.[21,22] However warfarin is under-utilized worldwide. A systemic review and meta-analysis in warfarin use in patients with AF published in 2012, revealed that warfarin use across twenty-eight studies in the United States ranged from 9.1%-79.8% (median = 49.1%).[1] Another study done in Sweden showed that warfarin is prescribed to only 15-60% of eligible patients.[23] However, it is suggested that warfarin utilization has been increasing over time from 1980 to 2005 in a linear fashion.[1]

Many factors have led to its reduced prescription, such as slow onset and offset of action, unpredictable and inter-individual variability in pharmacological response, increased risk of major bleeding compared with anti-platelet therapy, drug and food interactions, inconvenience of frequent international normalized ratio (INR) monitoring, extra hospital

admissions with warfarin overdose or side effects, and latest development and approval of alternative oral anticoagulants (OAC) in stroke prevention from AF.

Warfarin compliance is also of major concerns for health care professionals prescribing warfarin therapy. The issue of warfarin medication adherence (defined as taking warfarin according to medical advice (frequency, dosage, time and precautions) is of concern worldwide. One study from Korea reported as low as less than 30% warfarin adherence[24], although other studies worldwide have reported higher warfarin compliance ranging from 50% to up to 90%. [25,26,27,28,29] In terms of warfarin discontinuation, one study published in 1987 showed the discontinuation rate of warfarin therapy was as high as 38%.[30] Sudden cessation of warfarin therapy could be hazardous, as nearly half of the strokes in warfarin treated patients happen after temporary or permanent cessation of warfarin or during sub-therapeutic INR ranges.[31]

Few international studies have examined the patient characteristics associated with the initiation and long term continuation of anticoagulation medication in IS/TIA patients with AF. No major local study has investigated any difference between ischemic stroke patients with and without AF in our local population. A few local studies in Hong Kong have tried to looked into the factors associated with the initiation and long term warfarin use in IS patients with AF in Chinese population.[32,33]

The chief objectives of this study are to 1. Describe and compare the demographics, stroke subtypes, stroke severity, treatments (including acute thrombolysis therapy) and outcomes at discharge between AF and non-AF IS patients, 2. For those with IS and AF, the reason(s) for prescribing or not prescribing warfarin, and the reason(s) for continuing or not continuing warfarin at one year.

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STUDY ON THE SAFETY AND EFFICACY OF DABIGATRAN ETEXILATE (Pradaxa®) IN STROKE PREVENTION ON HONG KONG CHINESE WITH ATRIAL FIBRILLATION AS COMPARED WITH WARFARIN, A LOCAL HOSPITAL EXPERIENCE

Dr Ma Kit Kwan, Department of Medicine, North District Hospital (June 2013 Neurology Exit Assessment Exercise)

Background The use of anticoagulant for stroke prevention in atrial fibrillation is raising concern in Hong Kong. Warfarin was the only oral anticoagulant available in the market before the launch of dabigatran etexilate. The benefit of new anticoagulant is reported as noninferior to warfarin on stroke prevention. Besides, patients would benefit from less food and drug restriction in view of relative less interaction. Thus, it can provide a relative stable anticoagulation effects compared with warfarin. However, there is no local data on the efficacy and safety on the use of dabigatran etexilate in Hong Kong.

Objective To study the safety and efficacy of dabigatran etexilate in stroke prevention on Hong Kong Chinese with atrial fibrillation.

Methods This is a retrospective phase IV postmarket study. Patients on dabigatran etexilate from medical specialist outpatient clinic in North District Hospital between January 2009 and August 2012 were recruited in the study. The safety issue of the dabigatran etexilate was defined as the incidence of major bleeding including intracranial hemorrhage, and minor bleeding, gastrointestinal complications and hypersensitivity reaction. The efficacy of the dabigatran etexilate was investigated by patient outcomes. The primary outcome is recurrent

ischemic stroke or transient ischemic attack. The secondary outcome is the mortality incidence. The overall data would be compared with Asian and non-Asian data from RELY study upon the dabigatran treatment arms and warfarin arm. The data was reviewed by February 2013.

Results 96 patients were enrolled in the study. The mean follow-up period was 16 months. Our patients were more advance in age and multiple comorbidities with higher CHADS2 scores. The stroke rate was 3.37% per year which is higher compared with the dabigatran treatment and warfarin arm in RELY study as 1.39% and 2.50% per year respectively. Four patients got interrupted dabigatran use before the stroke events. The mortality rate was 3.37% per year as comparable with dabigatran treatment and warfarin arm in RELY study as 4.01% and 5.01% per year respectively. The major and minor bleeding risks were 4.69% and 1.56% respectively, which were lower compared with the dabigatran treatment arm and warfarin arm in RELY study.

Conclusions The mortality and major adverse event rates were comparable between our study data and the RELY study in Asian group and non-Asian group. The higher stroke rate in our study may be related to the interrupted dabigatran use such as prolonged drug withdrawal before procedure, after minor bleeding or inappropriate dosage. Further study with larger sample size, longer study period and comparable control arm are recommended.

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MORBIDITY AND MORTALITY OF GUILLAIN-BARRÉ SYNDROME IN HONG KONG

Dr Wong Hiu Yi, Department of Medicine, Queen Elizabeth Hospital (June 2013 Neurology Exit Assessment Exercise)

Objective To review the clinical profile and outcome of patients with Guillain-Barrésyndrome (GBS) managed in hospitalsin Hong Kong and to look for any predictors for mechanical ventilation, poor disability outcome and mortality.

Methods Subjects wereidentified by search for hospital code using Clinical Data Analysis And Reporting System with ICD-9-CM diagnosis code of ‘Guillain-Barré syndrome’ or ‘acute inflammatory demyelinating neuropathy’, and admitted to Queen Elizabeth Hospital, Princess Margaret Hospitaland Caritas Medical Centrefrom January 2001 to December 2010. Iexcluded patients younger than 18 years oldorsuffering from neuropathy other than Guillain-Barré syndromeorincomplete medical record available for review. A multivariate analysis was used for analysis of predictors of outcome.

Results A total of 64 patients were included in the Queen Elizabeth Hospitalcohort with a median age of 65. Mortality rate was 13% with 25% of patients requiring mechanical ventilation. At 6 months,nearly 70% of patients couldachieve independency in daily living. The more advanced the age, the higher the risks of mortality(odds ratio,1.1;95% confidence interval,1.01-1.30;p= 0.032) and disability (odds ratio,1.1;95% confidence interval,1.02-1.18;p= 0.013). Besides, the higher the GBS disability score onadmission, the higher the risk of mechanical ventilation (odds ratio,4.1;95% confidence interval,1.74-9.47;p = 0.001). Erasmus GBS outcome scoreand Erasmus GBS respiratory insufficiency score atadmission significantly predictedindependency in walking at 6months (p = 0.02) and mechanical ventilation (p = 0.01) respectively. When comparing betweencohorts, they showedsimilar baseline characteristics and outcome. Higher Erasmus GBS outcome scoreand Erasmus GBS respiratory insufficiency scorewere associated with poorer outcome, though the associationwas not always statistically significant among threecohorts.When threecohorts

were analyzed as a whole, there werea total of 104 patients included. GBS disability score onadmission and age remained significant predictors of mechanical ventilation (odds ratio,3.0;95% confidence interval,1.64-5.52;*p*<0.0001) and mortality (odds ratio,1.1;confidence interval,1.03-1.17;*p*= 0.007)respectively.

Conclusion The median age and mortalityrateof Guillain-Barré syndromein Hong Kong was higher when compared to those of previous studies. Among the three local hospitals studied, baseline characteristics and outcome were similar. Age and GBS disability score on admission were significantly related to mortality and risk of mechanical ventilation respectively whileErasmus GBS outcome scoreand Erasmus GBS respiratory insufficiencyscoreon admission can serve as a reference in predicting outcome of patients with Guillain-Barré syndrome.

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IMPACT OF DEMENTIA ON SHORT TERM OUTCOMES OF IN-PATIENT REHABILITATION FOR ELDERLY PATIENTS WITH HIP FRACTURES

Dr Kok Ching, Department of Rehabilitation and Extended Care, Wong Tai Sin Hospital
(June 2013 Rehabilitation Exit Assessment Exercise)

Objectives Primary objective of this study was to investigate whether dementia patients could benefit from hip fracture rehabilitation. Secondary objectives included exploring the characteristics of dementia patients undergoing hip fracture rehabilitation and identifying predictors for rehabilitation outcomes.

Methods Elderly patients admitted for hip fracture rehabilitation from 2007 to 2012 were retrospectively recruited. Exclusion criteria included age less than 65 and history suggestive of non-osteoporotic fractures. Baseline characteristics and rehabilitation scores were collected. Cumulative Illness Rating Scale for Geriatrics (CIRS-G) was applied to quantify patient's premorbid state. Patients were assigned to Dementia Group and Non-Dementia Group according to case note record. Comparisons between dementia and non-dementia patients were performed. Regression models were constructed to predict rehabilitation outcomes.

Results A total of 323 patients were recruited. Majority of patients (66.9%) were female, with mean age of 83.6. Most patients (78.6%) lived in community before the index admission. Majority of the patients (75.9%) were able to walk unaided/with stick before admission. Admission EMS, AMT, premorbid ambulatory state and Cumulative Total Scores (CTS) were shown to be significant predictors of Discharge EMS in a regression model with R2 = 0.678. A regression model was achieved to predict Discharge MBI using Admission MBI, AMT, premorbid ambulatory state and CTS with R2 = 0.776. Dementia patients were likely to be institutionalised before admission. Admission mobility and functional scorings were significantly lower in Dementia group. Dementia patients had significant mobility and functional improvements after rehabilitation. For those community-living patients before admission, patients with diagnosis of dementia were more likely to be discharged to institution after in-patient rehabilitation.

Conclusions Dementia patients could benefit from hip fracture rehabilitation programme despite they had lower mobility and functional scores on admission. Admission functional status, premorbid mobility state, cognitive functions and comorbidities were significant predictors for rehabilitation outcomes.

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A STUDY ON PREVALENCE AND EFFECT OF AIRFLOW OBSTRUCTION IN PATIENTS WITH MYOCARDIAL ISCHEMIA AND REVIEW OF THE LITERATURE

Dr Chiu Pui Hing, Department of Medicine, Pamela Youde Nethersole Eastern Hospital (June 2013 Respiratory Medicine Exit Assessment Exercise)

Background Ischemic heart disease (IHD) is an important comorbidity of patients suffering from chronic obstructive pulmonary disease. Undiagnosed airflow obstruction may also affect outcome of IHD.

Objectives The primary aim of this study was to assess the prevalence of undiagnosed airflow obstruction in patients with confirmed IHD using different spirometry criteria, which was compared with those without IHD. The secondary objective was to assess the contribution of airflow obstruction to the symptom scores and clinical outcome of IHD.

Method An observational study was performed in a major acute public hospital in Hong Kong. Spirometry was performed in 113 patients with IHD confirmed by coronary angiogram (Study Group). Airflow obstruction was diagnosed by GOLD criterion (FEV1/FVC <0.7) and FEV1/FVC < lower limit of normal range (LLN). The prevalence was compared with that of patients with no history of IHD (Control Group), and with an unselected sample of the general population of the Hong Kong East Cluster, whose spirometry data were collected from participants in a health exhibition 'Year of the Lung' in 2010 (Population Screening Group). The clinical characteristics, clinical outcome and symptoms scores of IHD patients with or without airflow obstruction were then compared.

Results Spirometry results of 113 patients from the Study Group, 90 patients from the Control Group and 75 subjects from the Population Screening Group were analysed. There was a trend for airflow obstruction (AFO) to be more prevalent in IHD patients when compared with control group (By GOLD: 23% vs 13.3%, p=0.07; By LLN: 15% vs 7.8%, p= 0.10) and a statistically significant difference between IHD patients and the Population Screening Group (By GOLD: 23% vs 12%, p= 0.04). Within 12 months of clinical presentation, IHD patients with concomitant airflow obstruction tend to be associated with larger number of vessels with severe stenosis (By GOLD: 69.2% VS 48.3% p= 0.06, By LLN: 64.7% vs 51.0%, p= 0.30) and more major adverse cardiac events (By GOLD: 1.62 vs 1.28, p= 0.03; BY LLN: 1.59 vs 1.31, p= 0.24). They have significantly more complaint of dyspnea by LLN (By GOLD: 43.8% vs 29.3%, p= 0.28; By LLN: 72.7% vs 23.4%, p= 0.02). However, there was no statistically significant difference in symptom scores (mMRC, SGRQ, HADS).

Conclusion Undiagnosed airflow obstruction tended to be more common in patients with IHD than those without IHD. Airflow obstruction may contribute to worse clinical outcome in IHD. Larger scale studies would be required to determine the potential implications of early diagnosis and treatment of airflow obstruction in this high risk population.

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SUICIDAL IDEATION IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE): INCIDENCE AND RISK FACTORS

Dr Chan Kar Li Kelly, Department of Medicine & Geriatrics, Tuen Mun Hospital (May 2013 Rheumatology/Immunology & Allergy Exit Assessment Exercise)

Background Systemic lupus erythematosus (SLE) is a multisystemic autoimmune disease predominantly affecting women of their reproductive age. It is a potentially disabling disease which poses significant physical and psychological burden on patients. Psychiatric

symptoms such as depression and anxiety are common in patients with SLE. The most devastating consequence of having depression in SLE is an increased suicidal risk.

Objectives To study the incidence of suicidal ideation in patients with SLE and its associated demographic, psychosocial and disease-related factors.

Methods Consecutive patients who fulfilled ≥4 ACR criteria for SLE were recruited for a questionnaire study on suicidal ideation. Suicidal ideation was assessed by three standard questions on suicidal thoughts and suicidal plans in the past 1 month; and the intensity of suicidal ideation was assessed by the validated Chinese version of the Beck Scale for Suicidal Ideation (BSSI). The BSSI score is calculated from summation of scores of the first 19 questions (0-38 points) in the questionnaire. The higher the score is, the greater is the suicidal intention. Anxiety and depressive symptoms were assessed simultaneously by the Hospital Anxiety and Depression scale (HADS). Disease activity of SLE was assessed by the Safety of Oestrogens in Lupus Erythematosus National Assessment SLE Disease Activity Index (SELENA-SLEDAI) and organ damage since SLE diagnosis was assessed by the American College of Rheumatology/Systemic Lupus International Collaborating Clinics (ACR/SLICC) Damage Index (SDI). Correlation of the suicidal thought with the basic demographics, psychosocial and disease-related factors was studied. A linear regression model was established to study the independent factors associated with the intensity of suicidal ideation (BSSI).

Results Three hundred sixty-seven SLE patients were recruited. The mean age of patients was 40 ± 12.9 years and the mean SLE duration was 9.3 ± 7.2 years. Sixty-seven (18.3%) patients had clinically active SLE (SELENA-SLEDAI ≥ 5). One hundred thirty-seven (37.3%) patients had organ damage (SDI ≥ 1). Forty four (12%) patients had suicidal thoughts within 1 month of study. The mean BSSI score of patients was 1.51 ±3.8 (range 0-24; median=0; IQR=1). Patients with suicidal thoughts had significantly higher mean SLEDAI scores in preceding 12 months (5.1±4 vs 2.9±2.7, p<0.001), total SDI (1.4±1.7 vs 0.6±1.1, p<0.001); and were more likely to be unemployed (68.2% vs 48.9%, p=0.04), receiving Government financial assistance (20.5% vs 10.5%, p=0.02), having lower educational level (10.2 years vs 11.2 years, p=0.04), previous suicidal attempts (22.7% vs 19.8%, p=0.03), a history of psychiatric disorder (50% vs 32.8%, p= 0.02) and major life events within one month (31.8% vs 15.2%, p=0.008) than those without. Linear regression revealed that the BSSI score correlated with HAD-depression score (Beta 0.27, p=0.001), past suicidal attempt (Beta 0.12, p=0.03), major life events within one month (Beta 0.13, p=0.01) and cardiovascular SDI (Beta 0.27, p<0.001).

Conclusions Suicidal ideation is common in SLE patients. The intensity of suicidal thought is stronger in those with higher depressive scores, cardiovascular damage, recent adverse life events, as well as those with a past history of suicidal attempts.

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Note: For obtaining the full dissertation, please contact the author directly.