Abstracts of Dissertations
December 2014 Exit Assessment Exercise

A RETROSPECTIVE REVIEW OF FIBRINOLYSIS TREATMENT TO ST EVATING MYOCARDIAL INFARCTION IN A HONG KONG REGIONAL HOSPITAL

Dr Kong Chun Cheong, Department of Medicine, Tseung Kwan O Hospital (December 2014 Cardiology Exit Assessment Exercise)

Objective   Acute myocardial infarction is one the leading causes of death in Hong Kong and modern society, in which ST elevating myocardial infarction (STEMI) carries a high mortality. Fibrinolysis, one of the reperfusion therapies for treatment of STEMI, can significantly reduce the mortality. The aim of the study is to review the fibrinolysis treatment in a local regional hospital which is incapable of primary percutaneous coronary intervention (PCI) and the outcome.

Methods   The clinical records of all patients admitting to Tseung Kwan O Hospital within the period from 2012 to 2014 with diagnosis of STEMI and given fibrinolysis were retrieved. Their demographic data, details of fibrinolysis and outcome were assessed and analyzed.

Results   Total 133 patients, account for 43.2% of all STEMI cases (133 out of 308), were given fibrinolysis during the mentioned period of time. More male patients (89.5% vs 10.5%) received fibrinolysis and they were younger (59.45 vs 75.64) than female patients. The mean FMC (first medical contact) to needle time was 60.4 minutes, and around 57.1% patients achieved 30 minutes target of FMC to needle time. The successful rate of fibrinolysis was 60.9% and significantly higher in male than female (63.9% vs 36%). The in hospital mortality rate was 10.5%, 30-day mortality was 12% and half year mortality was 12.8%. And 63.9% patients received coronary intervention either at the same admission or post discharge.

Conclusion   The rate (43.2%) of patients with STEMI receiving reperfusion therapy was inadequate and there was still room for improvement in the timing of fibrinolysis.   Early recognition of STEMI cases, prompt administration of fibrinolysis and development of logistics for arrangement of patient for early PCI were of paramount importance in managing these patients.

^^^^^^^^^^

CLINICAL CHARACTERISTICS, CORONARY ANGIOGRAPHICAL FEATURES AND OUTCOME OF ACUTE CORONARY SYNDROME IN YOUNG CHINESE ADULTS UNDER 45 YEARS OF AGE

Dr Mui Chun Yue, Department of Medicine & Geriatrics, United Christian Hospital (December 2014 Cardiology Exit Assessment Exercise)

Background   Coronary artery disease is one of the greatest worldwide health problems in developed countries, leading to significant morbidity and mortality. Acute coronary syndrome amongst young population creates social and economic burden to the society, yet few studies had investigated its clinical characteristics and outcomes in young adults.

Objective   To investigate the clinical characteristics, coronary angiographic features and clinical outcomes of young Chinese adults with acute coronary syndrome in a local hospital in

Hong Kong. Factors associated with coronary angiographic burden are assessed.

Methods All consecutive subjects at or below 45 admitted to the cardiac wards of United Christian Hospital from January 2010 to June 2013 with discharge diagnosis of acute coronary syndrome were analyzed retrospectively. 52 subjects were recruited and their demographics, clinical characteristics, coronary angiographic features and clinical outcomes were reviewed and analyzed, 58 patients above 45 were randomly recruited during the same study period for comparison. The angiographic burden was quantified by using Gensini score, its correlation with patient's clinical and laboratory parameters was tested.

Results Both groups of patients were followed up for a mean period of 27 months. Younger ACS patients had more current smoking (p = 0.004), obesity (p = 0.000), higher LDL and lower HDL cholesterol (p = 0.017 and 0.043, respectively) and higher triglyceride (p = 0.027) level but less hypertension (p = 0.012) than the older patients. They had lower Gensini score (p = 0.043). Both groups had no difference in the number of significantly diseased coronary artery. Higher Gensini score was observed in patients with hypertension, increased age (p = 0.012), increased heart rate on presentation (p = 0.041), higher fasting glucose during admission (p = 0.001), higher HbA1c (p = 0.05) and lower LVEF (p = 0.003). Both groups received similar guideline-directed medical therapy. Younger and older patients had similar incidence of acute kidney injury, bleeding complication, repeated target vessel revascularization, recurrent MI, post-MI stroke, heart failure and recurrent angina. Younger patients tended to have less bleeding and recurrent angina.

Conclusion Younger ACS patients had less coronary angiographic burden. They had more current smoking, obesity and dyslipidaemia. Hypertension, increased age, increased heart rate, poor DM control, lower LV systolic function were associated with higher coronary atherosclerotic burden.

^^^^^^^^^^

PROGNOSTIC FACTORS FOR POOR CLINICAL OUTCOMES IN PATIENTS WITH PERIOPERATIVE MYOCARDIAL INFARCTION - A RETROSPECTIVE COHORT STUDY IN A LOCAL DISTRICT HOSPITAL

Dr Tsang Cheuk Hang, Department of Medicine & Geriatrics, Caritas Medical Centre (December 2014 Cardiology Exit Assessment Exercise)

INTRODUCTION Despite improvement in technology, perioperative cardiovascular complications remain important causes of morbidity and mortality and require aggressive treatments. Some overseas data are available but local data are sparse.

OBJECTIVES To identify potential prognostic factors for poor clinical outcome in patients with perioperative myocardial infarction (MI).

METHODS A retrospective cohort study on adult patients with post-operative MI was performed between 1st May 2009 and 31th April 2013. Clinical data was gathered from the electronic records. The primary outcomes were acute pulmonary edema (APO) or cardiac arrest (CA) within 30 days. The secondary outcome was all-cause-mortality within 30 days. Patients were divided into groups of poor outcome (who suffered from APO or CA) and uneventful outcome (without the above 2 conditions). Univariate and multivariate analysis were performed to identify the factors which contributed a poorer outcome.

RESULTS 332 patients were included in the study. 150 of them belonged to the poor

outcome group. Independent predictors of poor outcome after MI were increasing age (OR 1.05, 95% CI 1.01-1.09), smoking (OR 2.57, 95% CI 1.06-6.21), chronic renal failure (OR 3.08, 95% CI 1.03-9.20), intraoperative shock (OR 4.56, 95% CI 1.61-12.8), high low density lipoprotein (OR 2.91, 95% CI 1.83-4.63) and low albumin (OR 1.07, 95% CI 1.00-1.04).

CONCLUSION   This study found that advanced age, smoking, chronic renal failure, intraoperative shock, high serum low density lipoprotein level and low serum albumin level were associated with higher risk for developing perioperative MI-related complications. Further studies, especially prospective studies, are required to confirm the findings.

^^^^^^^^^^

COMPARISON OF THE OUTCOMES OF RADIAL VERSUS FEMORAL ACCESS DURING PRIMARY PCI IN PATIENTS WITH ST-ELEVATION MYOCARDIAL INFARCTION - A STUDY IN THE CHINESE POPULATION
Dr Tsang Chun Fung Sunny, Department of Medicine, Queen Elizabeth Hospital (December 2014 Cardiology Exit Assessment Exercise)

BACKGROUND   Studies have shown that trans-radial approach in percutaneous coronary intervention results in less bleeding and wound complications compared to trans-femoral approach. The aim of this study is to validate the safety and efficacy of the radial artery approach in the setting of primary PCI in the Chinese population with STEMI.

METHODS   A registry of patients presented to the emergency department with ST elevation myocardial infarction in a local tertiary referral centre was reviewed. Those eligible for primary PCI were included in the analysis. Patients presented with severe cardiogenic shock not responsive to inotropic support and required insertion of IABP before PCI were excluded. The primary outcome was MACE in 30 days (death, myocardial infarction, stroke, target vessel revascularization). Secondary outcomes included major bleeding, door-to-balloon time, fluoroscopy time, contrast volume used, procedural success and length of hospital stay.

RESULTS   From January 2010 to March 2014, a total of 194 cases were reviewed.   17 cases were excluded according to criteria leaving 83 subjects in the trans-radial group and 94 subjects in the trans-femoral group. MACE was not statistically significant between the groups (3.7% in TRA vs 10.6% in TFA, adjusted OR 0.36, 95% CI 0.09 to 1.43). There was a trend in reduced death rate in the trans-radial group compared to the trans-femoral group (1.2% vs 8.5%, adjusted OR 0.15, 95% CI 0.02 to 1.25; p = 0.08). The incidence of major bleeding was significantly lower in the trans-radial group (4.8% vs 21.3%, adjusted OR 0.22, 95% CI 0.07 to 0.71; p =0.011). There was no significant difference in the door-to-balloon time, procedural success, contrast volume used or fluoroscopy time between to two groups. Using logistic regression analysis, male gender and the absence of heart failure were strong predictors for the assignment to trans-radial approach.

CONCLUSION   Trans-radial approach in primary PCI was associated with less major bleeding and may be related to reduced death rates. It had similar success rates to the trans-femoral approach and did not result in longer door-to-balloon time, higher contrast volume used or increased fluoroscopic times. Trans-radial access in primary PCI was a feasible approach in the appropriate circumstances.

^^^^^^^^^^

A RETROSPECTIVE OBSERVATIONAL STUDY OF HIV-INFECTED PATIENTS WHO HAVE BEEN ADMITTED TO INTENSIVE CARE UNITS IN THE PAST 5 YEARS' TIME, WITH THE ETIOLOGIES, PROGNOSTIC FACTORS ANALYZED

Dr Pang Ching Wai, Department of Intensive Care, Princess Margaret Hospital (November 2014 Critical Care Medicine Exit Assessment Exercise)

Introduction In the last two decades, the perception of HIV infection and Acquired Immune Deficiency Syndrome (AIDS) has changed from an almost uniformly fatal condition into a manageable chronic condition. Since its introduction in the 1990s, anti-retroviral therapy has improved the outcome of the HIV-infected patient significantly and has reduced the incidence of illness associated with the acquired immunodeficiency syndrome. HIV-infected patients, because of their improved life expectancy, have become more common among ICU admissions. In this study, we aimed to describe the etiologies of ICU admissions of HIV-infected patients in Hong Kong over a 5 years period and to examine whether there was any prognostic factor which could effectively predict length of stay and mortality.

Methods Medical records of all HIV-infected patients who were admitted to ICUs of 7 tertiary hospitals in Hong Kong from 1st Oct 2008 to 30th Sept 2013 were retrieved. Their demographics, clinical characteristics and parameters as well as treatment status were extracted. They were analyzed for any association with day 30 mortality, ICU length of stay and hospital length of stay.

Results During the study period, there were 104 ICU admissions identified, in which 36.5% of patients were newly diagnosed to have HIV infections after hospital admissions. The commonest causes of ICU admissions were respiratory failure (39.4%) and sepsis (30.8%). The mortality at day 30 counting from the date of ICU admissions was 25%. Serum albumin level on ICU admission (odds ratio [OR] =0.805; 95% CI =0.702-0.924; P=0.002) and APACHE II score (OR =1.089; 95% CI=1.017-1.165; P=0.014) were significantly associated with Day 30 mortality in multiple logistic regression. CD4 count was not significantly associated with Day 30 mortality (OR, 1.000; 95% CI, 0.995-1.005; P=0.926). A cut-off point of serum albumin of 18.5 g/L had a positive predictive value of 90.48% of day 30 mortality (sensitivity of 75.00%, specificity of 76.92%).

Conclusions During the period 2008-2013, the day 30 mortality of HIV-infected patients who had been admitted to ICU was 25%. Respiratory failure was the leading cause of ICU admission in Hong Kong. Day 30 mortality was significantly associated with serum albumin level and APACHE II score. Serum albumin was found to be a valid tool for predicting day 30 mortality with a cut-off point of 18.5 g/L. CD4 count was not statistically significant in its relationship with day 30 mortality.

^^^^^^^^^^

EVALUATION OF PATIENTS' TOPICAL TREATMENT ADHERENCE, PSYCHOSOCIAL IMPACT, SATISFACTION WITH DISEASE CONTROL AND DISEASE KNOWLEDGE AMONG PATIENTS WITH PSORIASIS VULGARIS: A PILOT STUDY IN HONG KONG

Dr Jeung Chung Yee, Social Hygiene Service, Department of Health (December 2014 Dermatology & Venereology Exit Assessment Exercise)

Background Psoriasis is a chronic skin disease with substantial psychosocial impact. Topical therapy has an important role in psoriasis treatment. Poor treatment outcomes from topical therapy regimens likely result from poor adherence. There are complex interactions

among patients, disease and treatment related factors that might affect adherence. By targeting on the factors that affect treatment adherence, improvement in adherence and hence better control of psoriasis is possible. However, there were not many studies which looked into adherence problems in psoriasis. No related studies had been done in Hong Kong.

Aims and methods   The aims of the study were to evaluate patients' topical treatment adherence, psychosocial impact, satisfaction with disease control and disease knowledge among patients with psoriasis vulgaris in Hong Kong. More importantly, the relationship between adherence and factors that influence adherence in patients with psoriasis in our local setting was assessed. Based on the findings, a targeted educational programme could be arranged for the psoriatic patients to enhance their adherence.

This was a cross-sectional descriptive study performed at the Fanling Integrated Treatment Centre (FLITC) and Yung Fung Shee Dermatology Centre (YFSDC), Social Hygiene Service. Adult patients with psoriasis vulgaris on topical treatment +/- systemic or phototherapy were enrolled in the study. All of the patients completed a questionnaire that included their self-reported adherence, socio-demographic features, disease and treatment related factors, psychosocial impact, satisfaction to treatment and knowledge about the disease.

Results   A total of 119 patients (78 men, 41 women) completed the study. Overall, 31 subjects (26%) adhered and 88 subjects (74%) did not adhere to topical treatment. Subjects who adhered to treatment were more likely to be >50 years old (p=0.001), retired (p=0.002) and had disease onset after 40 years old (p=0.001).

The three major reasons for not using topical medications in non-adherent patients were 1) forgot to use medications (44 patients, 50.0%), 2) no time to use medications (38 patients, 43.2%) and 3) too difficult to use medications (26 patients, 29.5%). A statistically significant difference between adherent and non-adherent patients was detected for the following reasons 1) forgot to use medications (p=0.003), 2) no time (p=0.000), 3) too difficult to use medications (p=0.009), 4) inconvenience to use medications (p=0.014) and 5) worry about side effects (p=0.045).

Regarding the psychosocial impact to the patients in this study, the mean PDI score was 4.59 (SD 5.21) and the mean PLSI score was 5.08 (SD 5.13). There was no statistically significant difference of PDI and PLSI scores in the adherent and non-adherent groups.

Overall, the mean satisfaction score was 6.06 (SD 2.40). In the adherent group, the mean score was 6.90 (SD 2.21) and in the non-adherent group, the mean score was 5.76 (SD 2.40). A greater satisfaction among adherent patients (p=0.041) was found.

Educational level was found to correlate with knowledge score (p=0.000). Overall, the mean number of correct answers was 6.37 (SD 2.49). The mean number of correct answers was 5.84 in the adherent group (SD 2.38) and 6.56 in the non-adherent group (SD 2.51). A higher prevalence of knowledgeable patients among non-adherent group (p=0.025) was found.

In the multiple logistic regression model, treatment non-adherence was significantly associated with disease onset at a younger age (<40 years old) and reasons for non-adherence included 1) no time to use medications, 2) forgot to use medications and 3) worry about side effects.

Conclusion   In this study, the factors of older age, retirement and greater satisfaction to the treatment had positive association with adherence. Onset of disease at a younger age and being more knowledgeable were prone to non-adherence. The three main reasons for not

using medications in non-adherent patients included 1) forgot to use medications, 2) no time and 3) too difficult to use medications. In the multiple logistic regression analysis, treatment non-adherence was significantly associated with disease onset at a younger age (<40 years old) and reasons for non-adherence included 1) no time to use medications, 2) forgot to use medications and 3) worry about side effects.

In order to enhance adherence, the target should not just be put on improvement of patients' knowledge e.g. how to use the medications properly or correct misconceptions about treatment side effects, but also to focus more on the patients who are younger, more knowledgeable or with earlier disease onset. Newer technology e.g. smart phone applications can be employed to improve adherence for them. Also, it is better for physicians to prescribe simple regimens to their patients and spend more time to establish good relationship with them during consultation for enhancement of adherence.

This study is a pilot study on adherence in psoriasis in our locality and it is hoped that this study has provided a platform for more future studies in this field.

^^^^^^^^^^

PATIENT PREFERENCES FOR PARTNER NOTIFICATION OF SEXUALLY TRANSMITTED DISEASES IN HONG KONG
Dr Tong Bik Sai Bessie, Social Hygiene Service, Department of Health (December 2014 Dermatology & Venereology Exit Assessment Exercise)

Background   Partner notification (PN) plays an important role in strategies for prevention and control of sexually transmitted diseases (STDs).However, data on PN in Hong Kong is lacking.

Objectives   The objectives of this study are to identify patient preferences on PN methods and means of communication, patient perceived barriers for PN and to investigate acceptability of novel electronic methods of PN for STDs.

Study Design   This is a cross-sectional study in Hong Kong.

Methods   The study was conducted from May to July 2014 in four Social Hygiene Clinics of the Department of Health. Patients newly diagnosed with STD(s) were recruited after consent obtained. They then completed a self-administered structured questionnaire concerning demographics, PN preferences, PN barriers and acceptability of novel PN methods.

Results   A total of 533 patients were recruited, 259 (48.6%) were females and 274 (51.4%) were males.154 patients (28.9%) accepted contact referral notes, whereas 379 patients (71.1%) refused PN. The significant independent predictors associated with positive acceptance of PN included female gender (OR: 9.542, 95% CI: 5.872 –15.504), presence of urogenital symptom (OR: 1.645, 95% CI: 1.047 –2.584) and inconsistent condom use (OR: 0.843, 95% CI: 0.723

Over half of the patients agreed that STD-related stigma and partner being asymptomatic accounted for the perceived barriers of PN.

The most favoured method of PN was patient referral with 77.5% respondents rated it as "very good" /"good" method. The most favoured means of communication for patient referral of PN was to inform sexual partner face-to-face (69.8%), while 21.6% respondents regarded

online PN website as a favourable method. The most favourable means of communication for provider referral of PN was SMS / mobile IM.86.7% respondents had access to private SMS / mobile IM.

Conclusion   The overall PN acceptance was 28.9% in which women, patients with urogenital symptoms and inconsistent use of condom were more likely to accept partner referral. When integrating the findings of PN preferences in this research, STD clinics may enhance PN with client-oriented counselling, which should help patients overcome perceived barriers.

^^^^^^^^^^

ROLE OF A DISINTEGRIN AND METALLOPROTEINASE 10 (ADAM10) IN ECTODOMAIN SHEDDING OF RAGE IN DIABETES MELLITUS

Dr Lee Chun Hong Alan, Department of Medicine, Queen Mary Hospital (November 2014 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Background   The receptor for advanced glycation endproducts (RAGE) plays an important role in the pathogenesis of diabetic vascular complications. Soluble forms of the receptor (sRAGE) can act as decoy for RAGE ligands and counteract the detrimental action of the full-length receptor. Soluble RAGE is produced by alternative splicing [endogenous secretory RAGE (esRAGE)] and/or by proteolytic cleavage of the membrane-bound form of RAGE(cRAGE). It has been suggested that ectodomain shedding is one of the mechanisms for regulating the function of RAGE. A Disintegrin and Metalloproteinase(ADAM) is a major protease family that mediates ectodomain shedding of cell surface proteins. Recent experimental evidence suggests that ADAM10, one of the proteolytically active members of the ADAM family, may be involved in the proteolytic cleavage of RAGE in vitro (1). The role of ADAM10 in the ectodomain shedding of RAGE in diabetes mellitus remains to be determined.

Research design / Objectives / Methods   We hypothesize that ADAM10 mediates ectodomain shedding of RAGE and serum concentration of cRAGE is therefore associated with ADAM10 level in diabetes mellitus. The current study is divided into two parts:

1. Invitro study: To examine the role of ADAM10 in constitutive and insulin-induced shedding of RAGE in THP-1 macrophages. Cell-surface RAGE receptors of THP-1 macrophages were labelled by biotinylation. Shedding of RAGE was quantified by measuring the amount of biotinylated sRAGE formed using anti-RAGE antibody immunoblot analysis. The effect of inhibiting ADAM10 on constitutive and insulin-induced shedding of RAGE was examined using GI254023X (a specific ADAM10 inhibitor).

2. Clinical study: To investigate the relationship between serum ADAM10 and sRAGE / esRAGE / cRAGE level in Chinese subjects with and without type 1 diabetes mellitus. We have previously shown that patients with type 1 diabetes mellitus have higher serum levels of esRAGE and sRAGE than age-matched healthy non-diabetic controls[1]. Serum ADAM10 level was measured using an in-house ELISA in archived blood samples from this study to investigate the relationship between ADAM10 and soluble RAGE isoforms.

Results   In-vitro study: Both constitutive and insulin-induced RAGE shedding were significantly reduced after inhibition of the sheddase ADAM10 in macrophages.
Clinical study: 102 type 1 diabetic patients and 101 age-and sex-matched controls were recruited. Type 1 diabetic patients had higher serum ADAM10 [324 (179-433) ng/ml vs 156

(112-278), p < 0.001], sRAGE [1038 (749-1217) pg/ml vs 802 (532-1139), p < 0.01], esRAGE [367 (269-476) pg/ml vs 291 (214-389), p <0.001], and cRAGE [594 (458-810) pg/ml vs 484 (283-796), p < 0.05] than non-diabetic controls. Serum ADAM10 level correlated with serum cRAGE in controls (r = 0.3, p < 0.01) and in type 1 diabetic patients(r = 0.38, p < 0.01) but no correlation were seen with esRAGE. The association remained significant after adjusting for other parameters, such as age, sex, body mass index, smoking status, duration of diabetes, HbA1c level and total daily insulin dose.

Conclusion   Our study suggested that ADAM10 contributed to RAGE shedding and serum ADAM10 level was associated with serum cRAGE in both type 1 diabetic patients and non-diabetic controls.

^^^^^^^^^^

PREVALENCE, EPIDEMIOLOGY, RISK FACTORS AND CLINICAL OUTCOME FOR MULTI-DRUG RESISTANT BACTERIAL INFECTION IN PATIENTS WITH LIVER CIRRHOSIS

Dr Lai Wing Chee, Department of Medicine, Tseung Kwan O Hospital (December 2014 Gastroenterology & Hepatology Exit Assessment Exercise)

Background   Bacterial infection is common in cirrhosis and is associated with high mortality. Increasing prevalence of multidrug resistant (MDR) bacterial infection in cirrhosis has been reported. However, local data is lacking.

Objectives   To determine the prevalence, epidemiology, risk factors and clinical outcome for multi-drug resistant bacterial infection in patients with cirrhosis

Method   A retrospective observational case control study of patients was performed. Cirrhotic patients with culture-positive bacterial infection admitted to Tseung Kwan O Hospital and United Christian Hospital between 1st January 2011 and 31st December 2013 were included. Patient's data were retrieved from Clinical Data Analyzing and Reporting System, electronic patient record and patients' medical record. Multivariate analysis was used to determine the independent predictors of MDR bacterial infection.

Results   169 patients (226 episodes of sepsis) met the inclusion criteria. The prevalence of MDR bacterial infection was 30.1% (68/226). MDR bacterial infections were more frequent in nosocomial infections (22/43, 51.2%) than in healthcare associated (HCA) infections (42/142, 29.2%) and community acquired infections (4/41, 9.8%). It was associated with high prevalence of septic shock and mortality. ESBL producing Enterobacteriaceae was the most frequent MDR bacteria isolated (66.2%, 45/68), followed by MRSA (23.5%, 16/68). Multivariate analysis showed that nosocomial infection (OR 4.0, 95%CI: 1.8-9.0), MDR infection in previous 6 months (OR 9.9, 95%CI: 3.2-30.6), antibiotic treatment within 3 months (OR 3.2, 95%CI: 1.3-7.9) and prophylactic use of quinolone (OR 9.8, 95%CI: 1.01-95.1) were independent predictors of MDR infection.

Conclusion   MDR infection was commonly found in cirrhotics, especially in nosocomial setting, and was associated with high mortality.

^^^^^^^^^^

INDETERMINATE BILIARY STRICTURES – CHARACTERISTICS, OUTCOMES

AND PREDICTORS OF MALIGNANCY: A SINGLE CENTRE EXPERIENCE

Dr Lam Chi Yeung, Department of Medicine & Geriatrics, Tuen Mun Hospital (December 2014 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Differentiation between malignant and benign biliary strictures remains one of the biggest diagnostic challenges. However, data about natural history of indeterminate biliary stricture is scarce and there is no local study on this topic.

Objectives
1. To study the clinical characteristics and outcomes of patients who presented with indeterminate biliary stricture.
2. To identify predictors of malignancy.

Methods This was a retrospective analysis studying all patients who presented to Tuen Mun Hospital in Hong Kong with indeterminate biliary strictures from 2000 to 2013. Patients with an Endoscopic Retrograde Cholangiopanreatography (ERCP) diagnosis of biliary stricture, absence of malignancy in brush cytology or biopsy, and absence of identifiable cause or mass lesion on cross sectional imaging were included. The demographic, clinical, laboratory, endoscopic, radiological and follow-up data were reviewed.

Results Eighty three patients with indeterminate biliary stricture were identified. The mean age was 66.5 and 65.1% of them was male. Forty five (54.2%) patients were subsequently diagnosed to have cancer (31 cholangiocarcinoma, 13 pancreatic cancer and one ampullary cancer). Patients with malignant stricture were older (71.2 vs 60.8 years old, p<0.001). Malignant strictures were more common in men (75.6% vs 52.6%, p=0.038). Mean serum total bilirubin (243.4umol/L vs 92.9umol/L, p<0.001) and alkaline phosphatase (458.6IU/L vs 288.1 IU/L, p=0.013) were higher in patients with malignant stricture. For biliary brush cytology, 84.2% benign strictures and 28.9% malignant strictures had normal cytology results (p<0.001). Whereas 13.2% benign strictures and 55.6% malignant strictures had atypical cytology results (p<0.001). Indeterminate biliary strictures were most frequently located at distal common bile duct (CBD) (51.8%). Presence of ductal stone was more common in benign strictures (39.5% vs 6.7%, p<0.001). In multivariate logistic regression analysis, independent predictive factors for malignancy included age (odd ratio: 1.157 for every year increase in age, 95% CI 1.068- 1.255), presence of jaundice (odd ratio: 18.905, 95% CI 3.022-118.277) and cytology results when result was atypical (odd ratio: 20.301, 95% CI 3.925-105.011 compared with normal) and suspicious (odd ratio: 106.37, 95% CI 1.21-9351.238 compared with normal). Eighty percent of cancer were diagnosed within 6 months after presentation.

Of the 45 patients with malignant strictures, 28 underwent surgery (18 curative resection, 9 palliative bypass surgery), 15 underwent endoscopic stenting and 2 underwent percutaneous drainage. The median survival of patients receiving curative operation, palliative operation and palliative biliary stenting or drainage were 23.6 months, 8.3 months and 13 months respectively. (p=0.033, log rank test).

Thirty eight (45.8%) patients had benign strictures. Six (15.7%) patients underwent surgery with a presumed diagnosis of malignancy. Four patients were diagnosed IgG4 disease and one of them was confirmed by CBD excision.

Conclusion More than half (54.2%) of the patients with indeterminate biliary strictures were subsequently found malignant and their overall survival was poor. Age, presence of jaundice at presentation and brush cytology results (atypical or suspicious) were independent predictive factors for malignancy. With the emergence of advanced endoscopies, a more aggressive diagnostic approach should be adopted when initial workup for biliary stricture is

non-diagnostic.

^^^^^^^^^^

ANALYSIS OF NON-INJURIOUS AND INJURIOUS IN-PATIENT HOSPITAL FALLS IN AN ACUTE HOSPITAL IN HONG KONG
Dr Cheng Yee Lan Elaine, Department of Medicine & Geriatrics, United Christian Hospital (December 2014 Geriatric Medicine Exit Assessment Exercise)

Background   in-patient hospital fall is a major patient safety concern in hospitals accounting for up to nearly a third of all reported patient safety incidents. Up to fifty percent of falls were injurious falls. Even non-injurious falls cause distress and anxiety to patients and carers resulting in reduced mobility for patients.

Objective   to analyse non-injurious and injurious in-patient hospital falls in an acute hospital in Hong Kong by observing patient characteristics and predictors of in-patient falls, comparing falls resulting in different severity indices, comparing non-injurious and injurious falls, and examining in details of falls with moderate to high severity indices.

Method   a retrospective descriptive study that looked at all adult in-patient hospital falls across specialties in 2013 reported through the Advanced Incident Reporting System (AIRS) in United Christian Hospital, a 1,200 bed acute hospital in Hong Kong. Data including patient characteristics, severity index of fall, risk factors of fall, activity at the time of fall, mechanism of fall, and intervention in place at the time of fall were collected using a structured data set through review of AIRS reports and medical records.

Result   a total of 232 in-patient fall episodes were included in the study. The total fall rate per 1,000 occupied bed days was 0.71. 74% were aged 65 years and older; 58% fell in a Medical and Geriatric ward; 32% fell in a Surgical or Orthopaedic ward; 10% fell in other wards; 41% of falls were non-injurious falls, and 59% of falls were injurious falls. There was significantly more injurious falls compared to non-injurious falls in the Department of Surgery and Orthopaedics compared to other departments (p = 0.002). 26% of patients fell between the hours of 22:00 and 01:59. 44% of total in-patient falls and 47% of injurious falls were related to toileting and continence care.

Conclusion   fall prevention strategies should be implemented across specialties including Surgical and Orthopaedic departments. Special attention should be addressed during the first four hours of the nursing night shift, especially in high risk patients. An individualised care bundle focusing on toileting and continence issues should be implemented in high risk patients as part of a fall prevention strategy in order to reduce in-patient hospital falls. An effective intervention to prevent fall involves a multidisciplinary individualised approach.

^^^^^^^^^^

RETROSPECTIVE REVIEW OF DEMENTIA PATIENTS IN A LOCAL NEURO-COGNITIVE CLINIC
Dr Lai King Son, Department of Medicine & Geriatrics, Tai Po Hospital (December 2014 Geriatric Medicine Exit Assessment Exercise)

Introduction   It is more ideal to manage dementia patients in memory clinics but not all of them are referred to such clinics. Also, the characteristics of these patients are less studied and

local published data is limited.

Objective   To study the characteristics of patients attending a local memory clinic and their changes in function over time.

Method   It is a retrospective study. The demographic data, medical comorbidities, mobilitystatus, functional level, neuro-cognitive and neuro-psychiatric functions of the patients at our clinic were reviewed and the changes over three years were analysed.

Results Highlight   Among the 320 patients of age 65 or above, over 60% were female. More than 90% of them presented with memory deficit as the chief complaint. Alzheimer's Disease (AD) was the commonest dementia subtype, representing nearly half of all the cases, and was followed by mixed dementia and vascular dementia. The mean MMSE score at initial presentation was 16.4. Hypertension, hyperlipidaemia, diabetes mellitus and history of cerebrovascular diseases (stroke) were common medical comorbidities. More than half of all patients were prescribed with anti-dementia drugs. AD patients taken anti-dementia drugs showed a slower decline of MMSE score at three years than those without anti-dementia drugs

Conclusion   This study provided some important data on the characteristics of dementia patients in a local neuro-cognitive clinic in various aspects, and many of them were comparable with other published international studies.

^^^^^^^^^^

EFFECT OF MULTI-COMPONENT PHYSICAL EXERCISE ON COGNITIVE FUNCTION, MOOD, AND DUAL TASK GAIT SPEED OF OLDER ADULTS WITH MILD COGNITIVE IMPAIRMENT
Dr Ma Chung Yee Arisina, Department of Medicine, Haven of Hope Hospital (December 2014 Geriatric Medicine Exit Assessment Exercise)

Mild cognitive impairment [MCI] is an intermediate state between normal cognition and dementia, cognitive impairment and change in ability of daily living activity exist, but not in the extend to meet the criteria for dementia. Individuals with MCI have significant risk to progress to dementia. They also exhibit different neuropsychiatric symptoms, and have higher mortality compared with cognitively normal, age-matched control.

This study aims at investigating the applicability and clinical effect of a new multi-component physical exercise program on older adults with MCI. Older adults ($\geq$ 55 year-old) with subjective memory complaint were referred to our cognitive clinic from local community. They were assessed by experienced geriatricians and occupational therapists. The diagnosis of MCI was made according to Peterson's criteria for MCI in 2001. The 16-week multi-component physical exercise program consisted of 2 parts, eight physiotherapist-instructed physical exercise sessions and home-based targeted physical exercise program. Aerobic exercise, cognitive-targeted and dual task exercise, and educational activities were included.

After 16 week of physical exercise training, we showed that participants' (n=31) performance of Stroop Color Word test enhanced (Wilcoxon signed-rank text, $p<0.05$), which reflects potential enhancement of attention and executive function. Moreover, their dual task gait speed and dual task gait speed decrement were improved (paired t test). Neuropsychiatric symptoms were noted in participants (Neuropsychiatric Inventory, depression, anxiety and

irritability subset), and those symptoms also alleviated after training (Wilcoxon-signed ranked test, p<0.05). However, we failed to demonstrate significant improvement of CMMSE and C-ACER score (paired t test, p>0.05). [Word Count: 246]

^^^^^^^^^^

RISK FACTORS FOR HUNGRY BONE SYNDROME AFTER PARATHYROIDECTOMY IN END STAGE RENAL DISEASE PATIENTS WITH SECONDARY HYPERPARATHYROIDISM

Dr Ho Lo Yi, Department of Medicine & Geriatrics, Kwong Wah Hospital (December 2014 Nephrology Exit Assessment Exercise)

Background   Parathyroidectomy is performed when medical therapy fails in renal secondary hyperparathyroidism (SHPT). Hungry bone syndrome (HBS) is a well recognized postoperative complication. This study examines the incidence, clinical course and risk factors for HBS in dialysis patients after parathyroidectomy for SHPT.

Methods   This is a single- center retrospective study involving 62 dialysis patients who underwent parathyroidectomy for SHPT in Kwong Wah Hospital from 2004 to 2014. Detailed analysis of baseline characteristics and laboratory parameters was performed to examine the postoperative course, and incidence and predictors of HBS.

Results   17 (27.4%) of the 62 patients developed HBS after parathyroidectomy. Younger age (p=0.035), higher body weight (p=0.027), higher preoperative alkaline phosphatase level (p=0.044), and lower preoperative calcium level (p=0.013) were independent predictors of HBS. The total amount of postoperative calcium and vitamin D supplementation was significantly larger and hospital stay was significantly longer in the group with HBS as compared with those without HBS.

Conclusion   HBS is an important complication after parathyroidectomy for SHPT. Young age, high body weight, high alkaline phosphatase level, and low calcium level before surgery were identifiable preoperative predictors for HBS.

^^^^^^^^^^

EARLY CATHETER-RELATED COMPLICATIONS AFTER TENCKHOFF CATHETER INSERTION BY NEPHROLOGISTS: A SINGLE-CENTER EXPERIENCE OVER 5 YEARS

Dr Lam Chi Kwan, Department of Medicine & Geriatrics, United Christian Hospital (December 2014 Nephrology Exit Assessment Exercise)

Background   Early catheter-related complications after successful implantation contribute significantly to morbidity and mortality rates of patients, interruption and decreased efficacy of peritoneal dialysis, conversion to hemodialysis, prolonged hospital stay and surgeries. Studies associated different early and late complications with various clinical factors. In order to minimize these complications, it is important to take into account factors that increase the risk of developing early catheter-related complications.

Methods   Data were collected both prospectively and retrospectively on all patients having first Tenckhoff catheter insertion using percutaneous Seldinger technique by nephrologists

between 2008 and 2013, including success of implantation and selected early complications within 1 month after implantation.

Results   A total of 443 catheters were inserted by percutaneous Seldinger technique under local anesthesia successfully. The primary successful implantation rate was 98.4%. Early infectious complications, early obstructed catheter requiring surgical intervention and early pericatheter leaks occurred in 6.6%, 8.4% and 25.1% of patients respectively. Waist-hip ratio (odds ratio: 1.84; 95% confidence interval 1.28 – 2.65; P value 0.01) and serum albumin level (odds ratio: 0.94; 95% confidence interval; 0.88 – 0.99; P value 0.03) were identified to be an independent risk factor of early infectious complications. Catheter survival rates at 1, 2 and 5 year were 87.8%, 85.0% and 77.1% respectively.

Conclusions   Waist-hip ratio was first identified to be an independent risk factor of early infectious complications after catheter insertion using percutaneous Seldinger technique by nephrologists.

^^^^^^^^^

DETECTION OF PAROXYSMAL ATRIAL FIBRILLATION BY 7 DAY EVENT LOOP RECORDER IN PATIENTS AFTER ACUTE ISCHEMIC STROKE OR TRANSIENT ISCHEMIC ATTACK

Dr Che Pey Sze Patricia, Integrated Medical Service, Ruttonjee Hospital (November 2014 Neurology Exit Assessment Exercise)

Background and purpose   Atrial fibrillation is a frequent cause of ischemic stroke. The risk of stroke in atrial fibrillation is five-fold which further increases with previous stroke, age and many other factors. Atrial fibrillation related stroke carries particularly high morbidity and mortality. Stroke recurrence and consequences can be effectively reduced by anticoagulant therapy. Thus, detection of atrial fibrillation is of utmost importance after ischemic stroke or transient ischemic attack (TIA). Since atrial fibrillation is frequently paroxysmal and occult, it is easily missed by routine 12 lead ECG. Strategies with high sensitivity such as prolonged cardiac monitoring is necessary. In this study, we aim to evaluate the effectiveness of 7 Day Event Loop Recording (ELR) in detection of paroxysmal atrial fibrillation in patients after acute ischemic stroke or TIA in a local setting. Also we aim to identify the predictors of atrial fibrillation to guide future targeted effective use of event loop recording.

Methods   We prospectively enrolled consecutive patients admitted to our acute stroke unit with an acute ischemic stroke or transient ischemic attack. Those with known history of atrial fibrillation were excluded. A total of 194 patients were eligible and systematically screened for atrial fibrillation in a stepwise ECG algorithm. All patients had admission ECG and for those with no atrial fibrillation detected, additional ECG was performed based on clinical grounds. Patients with no AF despite any standard ECG subsequently underwent 7-day event loop recording.

Results   A total of 27 cases (13.9%) of new atrial fibrillation were detected. Admission ECG detected new atrial fibrillation in 5.7% (11/194). Additional ECG detected new atrial fibrillation in 2% (3/154) of those with normal admission ECG. 7 Day Event Loop Recording identified 8% (13/162) of new paroxysmal atrial fibrillation in those with normal admission plus/minus additional ECG with a NNS of 12.5. A total of 7 day ELR recording is significantly more effective in detection of paroxysmal atrial fibrillation after stroke than 24 hour recording (8% vs. 1.9%; NNS 12.5 vs. 54). Age, history of stroke and cryptogenic stroke were associated with atrial fibrillation detection by ELR. Among all, cryptogenic stroke was

the strongest predictor.

Conclusion   7 Day event loop cardiac recording is an effective means of prolonged cardiac monitoring in detection of new paroxysmal atrial fibrillation after acute ischemic stroke or transient ischemic attack in those with normal standard ECG. We recommend a minimum of 7 days prolonged cardiac monitoring by means of Event Loop Recorder for detection of paroxysmal AF after acute ischemic stroke or TIA in future.

^^^^^^^^^^

WHAT ARE THE RISK FACTORS OF INTRACRANIAL ARTERY CALCIFICATIONS (IAC) AND WHETHER IAC SERVES AS AN INDEPENDENT PREDICTOR OF FUTURE CEREBROVASCULAR AND CARDIOVASCULAR MORBIDITIES AND MORTALITIES: A RETROSPECTIVE COHORT OF A LOCAL REGIONAL HOSPITAL

Dr Ip Muk Fai, Department of Medicine, North District Hospital (November 2014 Neurology Exit Assessment Exercise)

Objectives   The relationship between calcification of coronary arteries and ischemic heart disease is well established. However, controversies still exist for the implications of intracranial artery calcifications (IAC). The current study aims to investigate the risk factors associated with IAC and to investigate whether heavy IAC correlates with subsequent cerebrovascular and cardiovascular morbidities and mortalities.

Methods   This was a retrospective cohort study conducted in the North District Hospital. Patients with principal diagnosis acute ischemic stroke or transient ischemic attack (TIA) during the period of 1st October 2008 to 31st March 2009 were recruited into the CVA (cerebrovascular accident) group. A control group, consisting of patients with plain CT brain done from 1st October 2008 to 31st December 2008 for indications other than CVA, was set up for comparison. The degree of calcification of 7 intracranial vessels (left and right vertebral arteries, basilar artery, left and right intracranial carotid arteries, left and right middle cerebral arteries) was assessed on plain CT brains of the two groups. Patients were categorized into low or high IAC category according to the total IAC score of the 7 vessels. The IAC score of the CVA and control group was compared and vascular risk factors associated with high IAC category were identified. The risk of ischemic stroke or TIA, acute coronary syndrome and mortality in the following 5 years was assessed.

Results   Patients of the CVA group had significantly higher IAC score compared to control group (5.2 ±4.05 Vs 3.82± 3.81, p< 0.001). Age (OR=1.090, 95% CI: 1.056-1.125, p=< 0.001), previous history of stroke (OR=2.072, 95%CI: 1.109-3.872, p=0.022) and history of chronic kidney disease (OR=2.677, 95%CI: 1.349-5.313, p=0.005) are independent factors associated with higher IAC category. High IAC category (OR=2.223, 95% CI 1.102-4.483, p=0.026) was independently associated with higher 5-year ischemic stroke risk after adjusting for other cardiovascular risk factors.

Conclusions   Heavier burden of IAC is associated with various vascular risk factors, including hypertension, diabetes mellitus, atrial fibrillation, history of ischemic heart disease, older age, history of ischemic stroke and chronic kidney disease. Among these, the latter three factors were independently associated with IAC. Heavy burden of IAC is independently associated with higher risk of future ischemic stroke or TIA.   Presence of heavy IAC on CT brain should urge clinicians to aggressively manage vascular risk factors.

^^^^^^^^^

SYMPTOMS OF DEPRESSION, ANXIETY AND QUALITY OF LIFE IN PATIENTS WITH END STAGE RENAL DISEASE RECEIVING PALLIATIVE CARE
Dr Poon Yin, Department of Medicine & Geriatrics, Caritas Medical Centre (November 2014 Palliative Medicine Exit Assessment Exercise)

BACKGROUND and OBJECTIVES   The prevalence of end stage renal disease (ESRD) is increasing globally especially among elderly. More patients with multiple comorbidities were commenced on dialysis. Physical symptoms, symptoms of depression and anxiety of patients on dialysis have been found to be associated with impaired quality of life in various studies. Renal Palliative care service was developed for ESRD patients who decided not for dialysis. However, little is known about the physical symptoms and even less is known about the psychological symptoms in this group of patients. The study objectives were to assess the prevalence of symptoms of depression and anxiety in patients receiving renal palliative care and to explore their correlations with other physical symptoms and quality of life.

METHODS   This was a prospective, cross sectional study of patients under renal palliative care service from December 2013 to June 2014. The demographic and clinical characteristics of patients were collected. Symptoms of depression and anxiety were assessed by Hospital Anxiety and Depression Scale (HADS), quality of life by The Medical Outcomes Short Form (SF-36) and physical symptoms by the numerical rating scale. Correlations between these domains were analysed.

RESULTS   A total of 60 patients were recruited and 58 patients were analysed, among which 17 (29.3%) patients had depressive symptom and 3 (5.2%) had symptom of anxiety. The five most prevalent physical symptoms were pruritus (77.6%), fatigue (75.9%), dry mouth (62.1%), lower torso weakness (62.1%) and pain (56.9%). The most prevalent symptoms were the most severe ones. Patients with depressive symptom (HADS-D $\geq$ 8) as compared with patients without depressive symptom (HADS-D$<$ 8) had poorer quality of life with significant lower scores in vitality (25.29±14.63 vs 46.22±23.23, p=0.001), social functioning (63.23±31.71 vs 83.84±25.19, p=0.011), role limitation by emotion (58.82±47.91 vs 89.43±26.29, p=0.022), and mental health (50.59±18.22 vs 65.37±11.61, p=0.005). Patients with depressive symptom (HADS-D $\geq$ 8) also reported higher symptom severity scores for pruritus (mean rank=40.41 vs 24.98, U=160, p=0.001), fatigue (mean rank=39.71 vs 25.27, U=175, p=0.002), dry mouth (mean rank=36.97 vs 26.40, U=221.5, p=0.024), insomnia (mean rank=35.47 vs 27.02, U=247, p=0.041), and limb numbness (mean rank=34.71 vs 27.34, U=260, p=0.044). Palliative performance scale showed significant negative correlation with HADS-D score (r=-0.308, p=0.018), while the number of symptoms (r=0.458, p<0.001), and total symptom score (r=0.398, p=0.002) were positively correlated with HADS-D score.

CONCLUSION   The prevalence of symptoms of depression and anxiety in patients with end stage renal disease receiving palliative care was 29.3% and 5.2 % respectively. Patients with depressive symptom had poorer quality of life. The severity of depressive symptom was associated with functional status, physical symptoms including pruritus, fatigue, dry mouth, loss of appetite, insomnia, cough, limb numbness, number of symptoms and the total symptom severity score.

^^^^^^^^^

THE EFFICACY OF INDUCED SPUTUM IN DIAGNOSING PULMONARY

TUBERCULOSIS IN SUSPECTED CASES WITH INADEQUATE SPUTUM SAMPLE OR NEGATIVE AFB (ACID-FAST BACILLI) SMEAR: 4 YEAR EXPERIENCE FROM A REGIONAL ACUTE HOSPITAL IN HONG KONG

Dr Kwong Kin Keung, Department of Medicine & Geriatrics, Princess Margaret Hospital (December 2014 Respiratory Medicine Exit Assessment Exercise)

Background Tuberculosis (TB) is an old disease that is still of public health importance both globally and locally. However, up to 20-30% patients with pulmonary tuberculosis do not produce adequate sputum for diagnosis. Sputum induction has been reported to improve the diagnostic yield in this group of patients. Incorporating the newer generation of Nucleic Acid Amplification assays (Cobas Taqman MTB PCR) to the sample may help further.

Objectives To determine the efficacy of sputum induction in suspected TB cases with inadequate sputum sample or negative acid-fast bacilli (AFB) smear and to identify the patient groups that sputum induction may result in early diagnosis

Methods This is a retrospective cross-sectional study in Princess Margaret Hospital. Patients who underwent sputum induction for suspected pulmonary tuberculosis from July 2009 to June 2013 in infectious disease center (IDC）are recruited. Data on patients' age, gender, co-existing lung disease, immuno-competence, symptomatology, chest X-ray involvement, number of negative AFB smear before sputum induction and their subsequent progresses were retrieved and analyzed.

Results There were a total of 224 patients with sputum induction performed during the study period. Adequate sputum samples were obtained in 221 patients (98.6%）. Fifty-eight patients were diagnosed pulmonary tuberculosis, of which fifty-five were culture positive subsequently. Sputum induction has a sensitivity and specificity of 67.2% and 99.4%, respectively. The positive predictive value and negative predictive value are 97.5% and 89.0%, respectively. Twenty-eight (48.2%）of the TB patients were smear or PCR positive after the procedure which precluded them from further invasive procedures. Bronchoscopy was performed in twenty (66.7%）of the remaining thirty patients with a diagnostic yield of 65.0%. Univariate analysis showed that when patient could not produce any sputum before sputum induction were strongly associated with a positive result from the procedure (OR = 6.154, p = 0.003). The procedure is safe and well-tolerated among all age groups and those with mild to moderate airflow obstruction without causing significant bronchospasm.

Conclusion This study has reaffirmed the efficacy of sputum induction in a regional acute hospital in Hong Kong. When performed with PCR test, the procedure has a satisfactory diagnostic yield, low operating cost and high tolerability in patients with suspected pulmonary tuberculosis but inadequate sputum sample or negative AFB smear, especially for the former. It should be considered before proceeding to bronchoscopy provided high quality airborne isolation room and trained physiotherapist are available.

^^^^^^^^^

THE USE OF STOP-BANG QUESTIONNAIRE IN SCREENING OBSTRUCTIVE SLEEP APNEA IN A REGIONAL HOSPITAL IN HONG KONG

Dr Shek Lam Hin, Department of Medicine & Geriatrics, Caritas Medical Centre (December 2014 Respiratory Medicine Exit Assessment Exercise)

Objective To assess the Chinese version of STOP-Bang questionnaire, an eight-point acronym questionnaire in screening for obstructive sleeps apnea (OSA) of different severity,

especially for patients with at least moderate obstructive sleep apnea. Also, to re-assess if a new set of cut-off values including body mass index (BMI), neck circumference and age can better classify the high-risk population.

Methods Patients referred to Caritas Medical Centre Sleep Clinic and for suspected OSA. All patients who had undergone overnight diagnostic polysomnography (PSG) were invited to complete the questionnaire and the results were compared to the polysomnography results.

Results One hundred and thirty patients recruited from 1st September 2013 to 31st May 2014 received PSG and all had completed the questionnaire. One hundred and fifteen patients (88.5%) were classified as high-risk of OSA by the questionnaire, i.e. scored three or above out of eight. Seventy patients (53.8%) were diagnosed at least moderate OSA. The sensitivities of the STOP-Bang questionnaire in screening for patients with OSA, moderate OSA and severe OSA were 93%, 94.3% and 96.8% respectively. The negative predictive value of the questionnaire for moderate and severe OSA was 73.3% and 93.3% respectively. Alteration of the cut-off point of the high-risk score of the questionnaire and individual score cut-off (BMI, neck circumference and age) did not demonstrate significant changes to the results. The probability of patients to have OSA and moderate OSA increased with the higher STOP-Bang score.

Conclusion The study population was of high pretest probability, in this study, we could prove the Chinese version of STOP-Bang questionnaire a sensitive screening tool for patients with OSA of different severities. Alteration of cut-off values of the questions did not improve the predictability of the questionnaire.

^^^^^^^^^^

CLINICAL CHARACTERISTICS AND OUTCOMES IN PATIENTS WITH PLEURAL INFECTION REQUIRING DRAINAGE: A RETROSPECTIVE COHORT STUDY

Dr Yiu Hung Chan, Department of Medicine, Yan Chai Hospital (December 2014 Respiratory Medicine Exit Assessment Exercise)

Background Community acquired pneumonia is a common disease in HK. Pleural effusion develops in 36-57% patients with pneumonia, of which 10% are complicated or reached the stage of empyema. Both require effective drainage. However, physicians often encounter patients with pleural infection in different stages of the disease and therefore their outcomes could be very heterogeneous.

Study objective To look for clinical characteristics and outcomes in patient with pleural infection requiring drainage

Design Retrospective review in 2 regional hospitals, Princess Margaret Hospital and Yan Chai Hospital over a 72-months period from 2008 to 2013

Data collection The medical notes of patients with principle diagnosis of either empyema or parapneumonic effusion were reviewed. Those fulfilled the criteria of American College of Chest Physicians (ACCP) categories 3 or 4 of parapneumonic effusion were recruited in this study. Clinical, laboratory, disease and treatment data of each patient were extracted from clinical notes.

Clinical outcome This includes mortality, hospitalization period and recovery period.

Results   158 patients were selected in this study. The mean±standard error of mean (SEM) of age was 63.1±15.6. Male gender was more frequent [128 men (81%) versus 30 women (19%)]. 101 patients (63.5%) had underlying co-morbidity. Purulent pleural fluid was found in 86 patients (54.4%). The culture results of pleural effusion were positive in 75 of the 158 patients. A total of 125 micro-organisms were isolated from 75 patients. The most predominant micro-organisms identified were anaerobic bacteria 46.4% (58/125). Mean±SEM of time in diagnosis was 7.9 ±1.33 days & time to intervention was 2.89 ±0.41 days. 110 patients (69.6%) were under care of respiratory specialists. 10 patients (6.3%) underwent surgical intervention. Mean±SEM of hospitalization period was 36.19 ±1.82 days and recovery period was 23.46 ± 1.63 days. 16 patients (10.1%) patient died during index admission.

Probit regression analysis shows that older age (p 0.024), higher CURP-65 score (p 0.029), higher white cell counts (p 0.033) and care not under respiratory specialist (p 0.025) are associated with higher chance of death during index admission. Multiple regression analysis shows that longer time to intervention (p 0.035), growth of anaerobes on pleural fluid (p 0.041) and patient care not under respiratory specialists (p 0.03) are associated with prolonged hospitalization period. Growth of anaerobes (p 0.024) is associated with prolonged recovery period.

Conclusion   Pleural infection occurs frequently in elderly or those with co-morbidities. Both mortality rate and number of patients requiring surgical intervention is low. Patients who are older, with severe clinical presentation (higher CURB-65 score and white cell count) and care not under respiratory specialist are associated with higher chance of died during admission. Anaerobes are the most common organisms identified and are associated with prolonged hospitalization period. Longer time to intervention and care not under respiratory specialist are also associated with longer hospitalization stay. This study shows that clinicians should be more alert if patients present with severe signs of disease. Moreover, timely intervention and care under respiratory specialist is important in management of pleural infection.

^^^^^^^^^^

CLINICAL CHARACTERISTICS AND MANAGEMENT OF BACTERAEMIA IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

Dr Ng Sin Ngai, Department of Medicine, Yan Chai Hospital (December 2014 Rheumatology Exit Assessment Exercise)

Background   Infection is still one of the leading causes of mortality and morbidity in systemic lupus erythematosus (SLE) despite its overall improved survival.   Bacteraemia, an uncommon yet severe type of infection, is significantly linked with mortality and health related cost.

Objectives   To review the characteristics of bacteraemia and to explore the risk factors of short-term and long-term mortality.

Methods   SLE patients with positive bacteria culture in blood samples from 1st January 2001 to 31st December 2013 were included. Data on baseline demographics, clinical and treatment profiles, bacterial culture results, matching with empirical antibiotics and complications were collected and association analyzed with Mann-Whitney U or chi-squared tests. Survival was analyzed by Kaplan-Meier technique and Cox regression hazard model.

Results   Among 54 positive blood cultures in 46 patients, *S. aureus*, *E. coli* and *Salmonella* were the commonest. More virulent pathogens were noted in nosocomial bacteraemia and were associated with longer hospital stay than community-acquired (38 days vs. 18 days, p=0.002). A peak of bacteraemia (18.5%) occurred within the first year of SLE diagnosis. While lymphopenia was very common (94.4%), no more than half of the patients had neutrophilia and high C-reactive protein (CRP) level.   Lupus activity and damage scores and CRP level did not predict survival (p=0.39, 0.74 and 0.33 respectively). Only 17.4% patients were on hydroxychloroquine (HCQ). Around one-third of patients were complicated with acute respiratory distress, disseminated intravascular coagulation or septic shock. These septic complications and steroid augmentation were significant predictors for 30-day and one-year mortality (p<0.05). Matched empirical antibiotic coverage was commoner in 30-day survival group though p=0.07 (53.7% vs. 26.7%).

Conclusion   Bacteraemia, especially nosocomial, in SLE carries high mortality. Improvement strategies should focus on prevention, HCQ use, high index of suspicion, adequate antibiotic coverage and judicious use of steroid.

^^^^^^^^^^

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