Abstracts of Dissertations
June 2017 Exit Assessment Exercise

HAEMODYNAMIC EFFECTS OF NON-INVASIVE POSITIVE PRESSURE VENTILATION ASSESSED BY TRANSTHORACIC ECHOCARDIOGRAM IN OBSTRUCTIVE SLEEP APNOEA PATIENTS

Dr Au Shek Yin, Department of Medicine & Intensive Care Unit, Alice Ho Miu Ling Nethersole Hospital (June 2017 Cardiology Exit Assessment Exercise)

Background Continuous positive airway pressure (CPAP) ventilation has wide clinical use. Studying the haemodynamic effects and the heart-lung interaction associated with the use of CPAP would allow safe application of positive pressure. It also provides better understanding and interpretation of the change in echocardiographic parameters in patients put on positive pressure ventilation.

Method and study design 107 patients with obstructive sleep apnoea (OSA) put on CPAP being followed up in Alice Ho Miu Ling Nethersole Hospital were recruited as subjects between April 2016 and September 2016. Transthoracic echocardiograms were performed twice on each subject, once before and once 15 minutes after they used their own CPAP machines, and the paired echocardiogram parameters were compared in terms of heart chamber dimensions, left heart systolic function, left heart diastolic function, right heart systolic function, and right heart pressure effect.

Results There were statistically significant reductions, after the application of CPAP, in the heart dimensions, left ventricular (LV) systolic function and right ventricular (RV) systolic function.

There was significant change in parameters reflecting the right heart pressure. With the application of CPAP, there was significant increase in the maximum and the minimum diameter of the inferior vena cava (IVC), and there was also a significant decrease in IVC variability from 44.56 $\pm$ 14.86 % to 36.12 $\pm$ 11.42%. The maximum velocity of tricuspid regurgitation (TRVmax) also decreased significantly from 180.66 $\pm$ 6.95 cm/sec to 142.30 $\pm$ 52.73 cm/sec with the application of CPAP. Such a decrease was observed in both low and high CPAP subgroup.

There was no statistically significant change in the left ventricular diastolic function with the application of CPAP.

Conclusion There were echocardiogram measureable haemodynamic effects after the application of CPAP, and these were largely consistent with physiological prediction. The drop in left ventricular systolic function might mean that the decrease in LV preload might be predominant over change in LV afterload or LV compliance.

Despite statistical significance, the magnitude of change in the echo parameters with the application of CPAP was mostly small to yield important clinical implications. Yet, this could suggest the safety of positive pressure ventilation in relatively healthier subjects. Further studies, however, may be required to evaluate whether these effects would be exaggerated or not in those with marginal baseline heart function.

The clinically significant increase in the inferior vena cava diameter and the decrease in its variability meant that it would not be accurate to use these parameters to predict right atrial (RA) pressure under CPAP. Alternative methods to predict RA pressure would be recommended. There was also significant decrease in TRVmax. Therefore, the true trans-tricuspid valve pressure gradient should be higher than that estimated by the Bernoulli's equation in subjects put on CPAP. Alternative method, including right heart catheterization, to estimate RV pressure would be recommended in patients put on positive pressure ventilation.

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CLINICAL PATHWAY IN HEART FAILURE EFFECTIVELY INCREASES THE UTILIZATION OF EVIDENCE BASED HEART FAILURE MEDICATIONS RESULTING IN BETTER PATIENT OUTCOME, A SINGLE CENTER STUDY

Dr Cheng Yue Hong Victor, Department of Medicine & Geriatrics, Pok Oi Hospital (June 2017 Cardiology Exit Assessment Exercise)

Background The burden of congestive heart failure (CHF) in the modern society of Hong Kong is increasing annually. A local study in 1997 estimated the overall incidence rate per 1000 men and women was 5.7 and 4.8 respectively.1 Patients would benefit from a standardized guideline oriented inpatient hospital care. Clinical pathways for heart failure have been developed, 17 but these models have not been evaluated in the local community setting. Here, we sought to assess the effectiveness of implementation of a clinical heart failure pathway by evaluating the use of heart failure medications, length of stay, rate of readmission in patients with congestive heart failure.

Methods Heart failure pathway was implemented in Pok Oi Hospital since Dec 2015. We retrospectively studied a total of 185 patients (mean age 66.5 ± 10.1) with diagnosis of congestive heart failure in a community hospital between January 2015 and December 2016. Patients were divided into two groups, 93 patients who were mainly managed by the general medical team and 92 patients who were recruited into the pathway, all reviewed by the cardiac team with suggested management. We conducted detailed reviews to determine and compare the use of evidence based heart failure medications, risk factors control status, length of stay and rate of readmission.

Results Baseline characteristics of the two groups were similar. There were significantly more heart failure medications prescribed including angiotensin converting enzyme inhibitor or angiotensin receptor blocker (ACEI / ARB) (59% vs 78%, $p < 0.01$), betablocker (44% vs 68%, $p < 0.01$), aldactone (8% vs 14%, $p < 0.01$), digoxin (7% vs 9%, $p = 0.03$) and warfarin (17% vs 24%, $p = 0.01$) after patients were recruited into the pathway. And lower rate of readmissions was observed after the launch of heart failure pathway with 22% vs 11% in 30-day readmission ($p = 0.03$) and 45% vs 30% in 6-month readmission ($p = 0.04$) for those not enrolled and enrolled respectively.

Conclusion Use of heart failure pathway in the local hospital setting was associated with an increase in use of heart failure medications as well as reduction in heart failure readmission.

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VALIDATION AND CLINICAL USE OF ALIVECOR TO SCREEN UNDETECTED ATRIAL FIBRILLATION IN PATIENTS WITH HIGH CHA2DS2-VASC SCORE IN SPECIALTY OUTPATIENT CLINIC

Dr Leung Sai Chau, Integrated Medical Service, Ruttonjee Hospital (June 2017 Cardiology Exit Assessment Exercise)

Atrial fibrillation (AF) is a common disease with increased risk of ischemic stroke. Despite its high prevalence, it is often under-diagnosed as most patients are asymptomatic. Smartphone technological is an emerging modality in AF screening. The aim of this study is to validate the utility of AliveCor for AF detection and to screen the incidence of subclinical AF in patients with CHA2DS2-VASc score ≥ 2 in our geriatric and diabetic clinic.

Methods This study was conducted in 2 phases. In the validation phase of the study, 200 hospitalized patients were recruited from the acute general medical wards ; Participants were asked to hold the electrodes of AliveCor for 30 seconds to generate a single lead ECG, followed by a standard 12-lead ECG within 15 minutes. The AliveCor automated algorithm was compared with standard 12-lead electrocardiogram (ECG) interpreted by a cardiologist. The result of the 12-lead ECG was considered as the gold standard. The same cardiologist and

a research nurse would review the AliveCor single lead ECG tracing independently to assess inter-observers variation.

In the screening phase of the study, 2036 patients from the geriatric and diabetic clinic who had no known history of AF and CHA2DS2-VASc score ≥ 2 were recruited. AF screening was conducted in the same fashion.

Result The AliveCor was shown to have a high sensitivity (100%) and specificity (97.4%) in AF detection, with positive predictive value and negative predictive value of 83.8% and 100% respectively.

The incidence of newly diagnosed AF was 0.6% (13 out of 2036 patients). History of stroke or transient ischemic attack (OR 4.762, 95% CI 1.515-14.925, P = 0.008) and renal impairment (OR 5.586, 95% CI 1.824-17.241, P = 0.003) were shown to be independent predictors of new onset AF.

Conclusion This study had shown that AliveCor had a high sensitivity (100%) and specificity (97.4%) in AF detection, with high positive predictive value (83.8%) and negative predictive value (100%). The incidence of newly diagnosed AF was 0.6% (13 out of 2036 patients) in geriatric and diabetic clinic. History of stroke or transient ischemic attack and renal impairment were independently associated with AF. It is practical to use AliveCor to screen AF in patients with no known history of AF with high CHA2DS2-VASc score ≥2 in specialty outpatient clinic setting.

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COMPARISON OF RISK SCORES IN PREDICTING OUTCOME OF PATIENTS WITH NON-ST ELEVATION ACUTE CORONARY SYNDROME

Dr Sung Jonathan Gabriel, Department of Medicine & Geriatrics, Tuen Mun Hospital (June 2017 Cardiology Exit Assessment Exercise)

Background Acute coronary syndrome accounts for a significant proportion of emergency department attendance and medical admission. Management of patients with either non-ST elevation myocardial infarction or unstable angina requires accurate and rapid risk stratification for various clinical decisions. Different risk scoring models have been developed with the TIMI score and GRACE score being most commonly employed. The evidence on the relative accuracy of these two risk scoring models for non-ST elevation acute coronary syndrome in the Chinese population is limited.

Method In this observational study, we selected patients with either NSTEMI or unstable angina from a registry of patients presenting with chest pain and consecutively admitted to a tertiary referral centre. The TIMI and GRACE scores of these patients were compared in terms of their predictive capacity for major adverse cardiovascular events rate (MACE) at 30 and 90 days after index admission.

Results 250 subjects with either NSTEMI or unstable angina were selected from a registry of 1180 patients. At the end of the 90-day follow up period, the overall rate of adverse outcome was 32% (80 out of 250)and mortality rate was 21%.Using ROC curves analysis, TIMI score had an AUC of 0.706 at 30 days and GRACE score had an AUC of 0.824 (P = 0.001). At 90 days, TIMI score had an AUC of 0.704whileGRACE scores had an AUC of 0.822 (P = 0.001).

Conclusion Overall both TIMI and GRACE scores could predict MACE rate at 30 and 90 days for patients with either NSTEMI or unstable angina. GRACE score was shown to have better prognostic accuracy than TIMI score at both 30 and 90 days of follow up.

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IMPLANTABLE CARDIOVERTER DEFIBRILLATOR FOR SYSTOLIC HEART

FAILURE- A LOCAL RETROSPECTIVE COHORT STUDY

Dr Sze Shu Yue, Department of Medicine, Queen Mary Hospital (June 2017 Cardiology Exit Assessment Exercise)

Background Patients with systolic heart failure are at increased risk of sudden cardiac death (SCD), implantation of implantable cardioverter defibrillator (ICD) has been shown to reduce the risk of sudden death and mortality in patients with cardiomyopathy. However with advances in treatment of heart failure and interplay with other comorbidities, heart failure patient's outcomes after implantation of ICD have become varied.

Objective To analyse overall mortality and factors associated with mortality in patients with systolic heart failure (Left ventricular ejection fraction(LVEF) <=35%) and to evaluate their outcome after implantation of ICD.

Method We conducted a retrospective cohort analysis. A total of 524 patients diagnosed with systolic heart failure on echocardiogram (LVEF<=35%) from 1st January 2005 to 31st December 2010 in Queen Mary Hospital were included. Data regarding demographics, medications, biochemical results, implantation of cardiac implantable electronic devices, and status of coronary artery disease were collected. 118 patients (22.5%) underwent implantation of ICD. Patients were followed up till death or 30th March, 2017. Clinical endpoints of interest were all-cause mortality, cardiovascular death and sudden cardiac death.

Results The overall annual mortality rate, cardiovascular mortality, and sudden cardiac death rate were 11.7%/year, 7.7%/year and 2.3%/year respectively. Ischaemic cardiomyopathy was associated with higher mortality. Age (Hazard ratio(HR)1.045, P=0.001), hypertension (HR 1.305, P=0.049), previous stroke/transient ischaemic attacks (TIA) (HR 1.584, P=0.019), patients on dialysis (HR 2.123, P=0.014) and creatinine level (HR 1.002, P=0.001) were predictors of higher mortality in patient's with ischaemic cardiomyopathy. In patients with non ischaemic cardiomyopathy, baseline factors such as age (HR 1.040, P=0.001), creatinine level (HR 1.002, P=0.001) were associated with increased risk for mortality. There was a trend towards benefit of ICD with hazard rate 0.691 (0.496-0.961, p=0.028) for ischaemic cardiomyopathy and hazard ratio of 0.470 (0.280-0.787, P=0.004) for non ischaemic cardiomyopathy, but the benefit of ICD didn't reach statistical significance in multivariate analysis.

Conclusion In our cohort of patients with systolic heart failure, ischaemic cardiomyopathy was associated with higher mortality from any cause compared with patient with non-ischaemic cardiomyopathy. Factors including age, hypertension, previous stroke/TIA, creatinine level and patients on renal placement therapy were associated with increased mortality. While in patients who received ICD, there was a trend towards reduction of mortality.

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PREDICTORS AND OUTCOMES OF NO-REFLOW PHENOMENON IN PATIENTS UNDERGOING PRIMARY OR EMERGENCY PERCUTANEOUS CORONARY INTERVENTIONS : A SINGLE-CENTRE RETROSPECTIVE STUDY

Dr Wong Kin Ho, Department of Medicine & Geriatrics, Tuen Mun Hospital (June 2017 Cardiology Exit Assessment Exercise)

Background No-reflow or slow flow phenomenon during primary or emergency percutaneous coronary intervention carries adverse clinical outcomes. This study aimed to evaluate and compare the clinical and procedural characteristics, as well as outcome between patient having no-reflow (TIMI flow 0-1) or slow flow (TIMI flow 2) and normal flow after PCI in the local Hong Kong population. Predictive factors of the phenomenon were sought in order to improve practice.

Methods and Results From 1 September 2013 to 16 June 2016, 235 patients received

primary percutaneous coronary intervention (PCI) or emergency PCI due to acute ST-elevation myocardial infarction. Five patients were excluded according to study protocol. 47 patients (20.4%) had no-reflow and 32 patients (13.9%) had slow flow. Patients with no-reflow had lower systolic blood pressure (120mmHg vs 138mmHg, p=0.023), higher neutrophil count (9.8 vs 6.9 x109/L, p=<0.001), higher random glucose (8.6 vs 8.1mmol/L, p=0.037), lower haemoglobin level (13.5 vs 14.8g/dL, p=0.030), lower estimated glomerular filtration rate (64.6 vs 70.0ml/min, p=0.031), lower left ventricular ejection fraction (LVEF) (40% vs 45%, p=<0.001), longer onset-to-PCI time (604 vs 345min, p=0.003), and longer PCI time (61 vs 39min, p=<0.001). There was also more American Heart Association (AHA) type C lesion in no-reflow group (63.8% vs 32.5%, p=<0.001). Multivariate binary logistic regression identified pre-procedural Thrombolysis in Myocardial Infarction (TIMI) 0-1 flow (OR 6.883, 95%CI 1.263-37.521, p=0.026), LVEF <=40% (OR6.382, 95%CI 2.085-19.536, p=0.001), onset-to-PCI duration >12 hours compared to <=3 hours (OR 6.350, 95%CI 1.220-33.036, p=0.028) or 3-12 hours (OR 5.071, 95%CI 1.054-24.401, p=0.043), AHA type C lesion (OR 2.870, 95% CI 1.060-7.773, p=0.038) and neutrophil count (OR 1.241, 95%CI 1.092-1.411, p=0.001) as independent predictors of no-reflow. After PCI, more patients with no-reflow developed cardiogenic shock (27.7% vs 12.6%, p=0.014), had malignant ventricular arrhythmia (12.8% vs 3.3%, p=0.023), used IABP (17.0% vs 4.7%, p=0.010), received CPR (17.0% vs 4.7%, p=0.010) and were intubated (10.6% vs 1.3%, p=0.009). The peak creatine kinase level was also higher in no-reflow group (3774U/L vs 2863U/L, p=0.022). The 30-day mortality was higher among patients with no-reflow (27.7% vs 10.6%, p=0.004). No-reflow was a significant univariate predictor of 30-day mortality (OR 3.226, 95%CI 1.417-7.346, p=0.005) but did not achieve statistical significance in multivariate analysis (p=0.451).

Conclusion One-fifth of patients with acute STEMI had no-reflow after primary or emergency PCI. Poor pre-procedural coronary blood flow, poor left ventricular ejection fraction and long ischaemia time strongly predicted no-reflow. The occurrence of no-reflow was associated with more cardiogenic shock, malignant ventricular arrhythmia, larger infarct size, and higher 30-day mortality. Larger studies, preferably prospective, are needed to evaluate the predictive power of no-reflow on mortality outcomes.

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RETROSPECTIVE REVIEW OF THE PREVALENCE AND ASSOCIATED RISK FACTORS OF ASYMPTOMATIC GENITAL AND EXTRAGENITAL CHLAMYDIA TRACHOMATIS AND NEISSERIA GONORRHOEAE INFECTIONS IN HIV-INFECTED MEN WHO HAVE SEX WITH MEN

Dr Leung Wai Hung, Social Hygiene Service, Department of Health (June 2017 Dermatology & Venereology Exit Assessment Exercise)

Many overseas studies confirmed the higher prevalence of asymptomatic rectal and pharyngeal GC/CT infections than at urethral sites among MSM. Asymptomatic STI infections enhance HIV transmission to uninfected partners. International guidelines advocate annual screening of sexually active MSM.

Objectives To determine the local prevalence and risk factors of asymptomatic genital and extragenital *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) infections in HIV-infected men who have sex with men (MSM), in order to inform public health control; and to enhance the diagnosis and treatment of asymptomatic CT and GC infections at genital and extragenital sites in HIV-infected MSM.

Method A retrospective review examining clinical and epidemiological data of asymptomatic HIV-infected MSM screened at genital and extragenital GC and CT infections from October, 2013 to April, 2015 at KBITC. The prevalence of GC and CT infections at the rectum, pharynx and urethra are determined. Psychosocial and demographic data collected are analyzed and associated factors evaluated.

Results 828 specimens were collected from 294 patients. Almost one-third (32%) of all subjects were infected by either infection at any one of the three sites. The only factor associated with infection was Chinese ethnicity. The prevalence of infection at any site was 14%. The prevalence of CT was 22% at the rectum, 4% at the pharynx and 5% at the urethra. The prevalence of GC was 11% at the rectum, 5% at the pharynx and 1% at the urethra. Twenty-seven percent were infected by either infection at the rectum.

Conclusion As much as 32% of all subjects were infected at any one site; and the prevalence of rectal CT was as high as 22%. A urine only screening strategy misses more than 70% of GC or CT infections. There exists an enormous gap in service provision to test more patients, test more sites, and to test asymptomatic persons.

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A RETROSPECTIVE STUDY ON THE CLINICOPATHOLOGIC SPECTRUM OF CUTANEOUS ROSAI-DORFMAN DISEASE IN HONG KONG AND ITS RELATIONSHIP WITH IGG4-RELATED SKIN DISEASE

Dr Wu Wai Fuk, Social Hygiene Service, Department of Health (June 2017 Dermatology & Venereology Exit Assessment Exercise)

Background Cutaneous Rosai-Dorfman disease (RDD) is a rare histiocytic disorder that is not well documented in Hong Kong. It includes both purely cutaneous RDD (CRDD) and systemic RDD with cutaneous involvement. The relationship between CRDD and IgG4-related skin disease, a recently described fibroinflammatory condition, remains uncertain and debatable.

Objective We sought to provide an overview on demographic, clinical and histopathological features, therapeutic modalities and clinical course of cutaneous RDD in Hong Kong. We also analyze the relationship between CRDD and IgG4-related skin disease by comparing their clinicopathological and immunohistochemical features.

Methods We conducted an observational case series including 14 patients with cutaneous RDD in our dermatology clinics between 1990 and 2016. Their medical records and skin biopsy specimens were reviewed. In addition, the clinical, histologic, and immunohistochemical features of 13 of our patients with CRDD and 13 cases of IgG4-related skin disease retrieved through a PubMed search were compared and analyzed.

Results All the 14 patients studied were Chinese, with a median age at diagnosis of 50.5 years (range, 31-73 years), and with a female predominance (M/F ratio of 1:1.8). Most patients (13 patients) presented with the papulonodular type of skin lesions, which was characterized by clustering or satellite infiltrated papules and/or nodules that may coalesce into larger nodules or plaques. The limbs were the most commonly affected site, followed by the trunk and face. Multiple skin lesions affecting 2 or more different anatomical sites were observed in 5 patients. One patient had systemic RDD involving nasal mucosa, lymph nodes and skin, while the remaining 13 patients had CRDD without lymphadenopathy or other organs involvement. Six patients had immune-mediated diseases, including uveitis, asthma, hypothyroidism, and paraproteinemia, with uveitis (3 patients) being the most common association. Thirteen out of 14 skin specimens showed dense nodular or diffuse mixed inflammatory infiltrate containing large pale histiocytes, lymphocytes, plasma cells with/without neutrophils or eosinophils. Ten specimens demonstrated the characteristic pattern of alternating pale and dark zones. All specimens showed varying degrees of S-100+ histiocytes and emperipolesis, 8 of which showed only focal emperipolesis. Mild to moderate degree of stromal fibrosis was noted in 4 specimens. Topical steroid or intralesional steroid injection was the most common treatment. The median follow-up was 32 months (range, 6 months to 21 years). Partial or significant regression of lesions was observed in 9 patients regardless of treatment modality. CRDD resembles IgG4-related skin disease in that the morphology of skin lesions is similar and dense lymphoplasmacytic infiltrate is found to occur in both. However, patients with IgG4-related skin disease were significantly older than those of CRDD (median age of 72 vs. 51 years). Male

gender, head and neck skin involvement, other organs involved by IgG4-related disease (IgG4-RD), and blood eosinophilia were significantly more common in IgG4-related skin disease than in CRDD (77% vs. 31%, 85% vs. 38%, 69% vs. 0%, 86% vs. 0%, respectively). In addition, cases of IgG4-related skin disease had significantly greater number of IgG4+ plasma cells/high power field (median count of 175 vs. 67) and IgG4+/IgG+ cell ratio (median ratio of 0.84 vs. 0.39) compared with cases of CRDD.

Limitations The findings of this study are limited by its small sample size, varying duration of follow-up, and retrospective nature. In addition, reporting and publication bias may exist in the published case reports and case series of IgG4-related skin disease.

Conclusions Our study further supports that CRDD is a distinct entity from systemic RDD with regard to its epidemiology and clinical course. The prevalence of uveitis in our CRDD series is much higher than in other recent case series. Our study also provides further evidence that CRDD and IgG4-related skin disease should be regarded as two distinct entities.

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PRIMARY ALDOSTERONISM IN HONG KONG: CLINICAL, BIOCHEMICAL AND RADIOLOGICAL CHARACTERISTICS IN UNILATERAL AND BILATERAL DISEASES

Dr Leung Hoi Tik, Integrated Medical Service, Ruttonjee Hospital (May 2017 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Background Primary aldosteronism is the most common type of secondary hypertension. Accurate subtyping of the disease, in particular identification of aldosterone-producing adenoma (APA) and idiopathic adrenal hyperplasia (IAH) is important so as to direct for specific treatment modalities.

Objectives The primary objective of the study was to study and compare the clinical characteristics and outcomes of patients with APA and IAH in Hong Kong over a 6-year period from 2009 to 2014. The secondary objective was to evaluate the surgical outcome of APA patients who had performed adrenalectomy during this 6-year period.

Methodology This was a retrospective multi-center study recruiting 104 APA patients and 89 IAH patients from 5 major hospitals in Hong Kong (PMH, PYNEH, QMH, RH and TKOH). APA patients were identified using database from Surgical Outcomes Monitoring and Improvement Programme (SOMIP). IAH patients were identified using database from Clinical Data Analysis and Reporting System (CDARS).

Results Comparing the clinical characteristics between APA and IAH groups, patients in APA group were younger than IAH group (mean age 49.6± 9.5 vs. 55.9 ± 8.5 years old, $p<0.001$), had more severe hypokalaemia (median lowest serum potassium level 2.5 [Interquartile range IQR 2.2-2.7] vs. 2.8 [2.6-2.9] mmol/L, $p<0.001$) and higher aldosterone-to-renin ratio (ARR) (median 2914 [1764 – 5128] vs. 1780 [950-2979] pmol/L per ng/ml/h, $p<0.001$). Multivariate analysis showed that age at diagnosis ≤50 years (OR 13.9, $p=0.005$), plasma renin activity (PRA) ≤0.25ng/ml/hr before saline infusion in saline infusion test (SIT) (OR 14.5, $p=0.003$), aldosterone level ≥420 pmol/L after saline infusion in SIT (OR 7.75, $p=0.016$) and aldosterone level ≥565 pmol/L after overnight recumbency in postural stimulation test (PST) (OR 9.8, $p=0.013$) were independent predictors for APA. Using a Clinical Prediction Score by assigning a score of 1.5 each to age at diagnosis ≤50 years or PRA ≤0.25ng/ml/hr before saline infusion in SIT and a score of 1.0 each to aldosterone level ≥420 pmol/L after saline infusion in SIT or aldosterone level ≥565 pmol/L after overnight recumbency in PST, a score of 3 would predict APA with a sensitivity of 74.4% and specificity of 93.2%.

Over a median follow up of 5 years for APA and 6 years for IAH patients, average decrease in systolic blood pressure was 16.9 vs. 14.1 mmHg and diastolic blood pressure was 4.8 vs. 5.9

mmHg respectively. The initial decrease in eGFR by CKD-EPI in first 6-12 months in both groups was maintained by the end of the study at 77.4 vs. 73.8 ml/min/1.73m2 (p= 0.225).

Unilateral adrenalectomy in 104 APA patients resulted in cure of hypokalaemia in almost 100%, cure of hypertension in 48.5%, improvement in hypertension in 88.5 %. Postoperative complications occurred in 7.7% and conversion from laparoscopic to open surgery was required in 3.8%.

Conclusions For patients with primary aldosteronism, a combination of clinical, biochemical and radiological characteristics needs to be analyzed to differentiate APA from IAH in clinical practice. Adrenalectomy was safe and effective in curing hyperaldosteronism in APA.

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FACTORS ASSOCIATED WITH INTRAOPERATIVE BLOOD PRESSURE FLUCTUATIONS IN PHAEOCHROMOCYTOMA / PARAGANGLIOMA RESECTION - A LOCAL RETROSPECTIVE STUDY AND 2 PROSPECTIVE EXPLORATORY CASE STUDIES

Dr Ma Siu Pang, Department of Medicine, Queen Elizabeth Hospital (May 2017 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Background Intra-operative haemodynamic instability is a known risk during phaeochromocytoma /paraganglioma resection. There are few studies on the magnitude of this problem in this era of better surgical and anaesthetic techniques. Identification of pre- and intra-operative risk factors associated with the intra-operative fluctuations in blood pressure (BP) may lead to better proactive management to minimize this problem.

Method and Objective of my studies Study I. A retrospective survey of patients with phaeochromocytoma/paraganglioma resection in Queen Elizabeth Hospital (QEH) between 1/2006 to 12/2016 (n=36), to identify the frequency and degree of intra-operative fluctuations in BP during phaeochromocytoma/paraganglioma resection and identify pre- and intra-operative risk factors associated with such fluctuations. Study II. A prospective detailed exploratory case study of 2 patients during phaeochromocytoma resection, to evaluate the intra-operative changes in plasma catecholamine levels and the association of these with BP fluctuations, and to gain some preliminary insight on the possible role of intraoperative use of Magnesium Sulphate (MgSO4).

Results Intra-operative haemodynamic instability is common. Larger tumour size and symptomatology are risk factors associated with intra-operative haemodynamic BP changes. Intra-operative events commonly associated with hypertensive events are pneumoperitoneum, anaesthetic induction, tumour manipulation, ligation of adrenal vein and positioning. Catecholamine surge is the main cause for intra-operative hypertensive attacks, while intra-operative hypotension are largely iatrogenic. Catecholamines can rise to extremely high levels during tumour manipulation. The use of Magnesium Sulphate was suboptimal in our case as the therapeutic range was not achieved.

Conclusion Intra-operative hypertensive attack remains a challenge. Alpha blockade, especially competitive alpha blockade, may not suffice.

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CLINICAL CHARACTERISTICS, PROGNOSTIC FACTORS AND SURVIVAL OUTCOME OF GASTRIC MUCOSA-ASSOCIATED LYMPHOID TISSUE NON-HODGKIN'S LYMPHOMAS (MALT - NHLS)

Dr Lam Kwan Wai, Department of Medicine & Geriatrics, Princess Margaret Hospital (May 2017 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Gastric MALT lymphoma is closely linked to *H.pylori* infection [1, 2].

Although majority of patients have an indolent clinical course, some would progress to disseminated disease [3]. Currently available publications are mostly conducted in the Caucasian population. Local studies are lacking. With increasing rate of *H.pylori* resistance worldwide, there may be a changing face of this *H.pylori* driven disease. This study aims to analyse the clinical characteristics, prognostic factors and survival outcome of patients with gastric MALT lymphoma in Hong Kong.

Method From January 2003 to December 2015, eighty-four patients with newly diagnosed gastric MALT lymphomas were included. Patient demographics, clinical characteristics, treatment response and survival data were retrospectively analysed.

Results Fifty patients (59.5%) responded to first line treatment with *H.pylori* eradication therapy. Ann Arbor stage I was an independent predictor for clinical remission with first line treatment. Eastern Cooperative Oncology Group Scale (ECOG) performance status more than one, albumin less than 30g/dL and International prognostic index (IPI) more than one were independent prognostic factors for adverse overall survival. Groupe d'Etude des Lymphomes de l'Adulte (GELA) histological grading of responding residual disease (rRD) or no change (NC), and IPI more than one were independent prognostic factors for adverse progression-free survival.

Conclusion Gastric MALT lymphoma is an indolent disease with good prognosis. Ann Arbor stage II to IV was an independent predictor for treatment failure with *H.pylori* eradication therapy. Adverse survival outcome was associated with poor performance status, low albumin level, IPI more than one, and GELA histological grading of rRD/NC.

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THE PREVALENCE OF FUNCTIONAL GASTROINTESTINAL DISORDERS IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA

Dr Lui Abdul Rashid Nok Shun, Department of Medicine & Therapeutics, Prince of Wales Hospital (May 2017 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Functional gastrointestinal disorders (FGIDs) are common and related with significant morbidity. Obstructive sleep apnea (OSA) is an important disease with recent studies suggesting a linkage with the gut. We aim to evaluate the prevalence of FGIDs in patients with OSA as compared with healthy volunteers.

Methods A case control cross-sectional pilot study was conducted in the Prince of Wales Hospital, Hong Kong from October 2013 to April 2017. A total of 60 OSA patients and 60 healthy volunteers were recruited. Questionnaire application to diagnose FGIDs according to Rome III criteria, together with assessing other psychometric parameters was undertaken.

Results The prevalence of functional dyspepsia (FD) was 28.3% and 8.3% (17 vs 5, P = 0.005), and the prevalence of gastro-oesophageal reflux disease (GERD) was 18.3% and 5% (11 vs 3, P = 0.023) in the OSA group and healthy volunteer group respectively. OSA subjects were found to have more anxiety and depressive symptoms, worse sleep quality, and more fatigue compared with healthy volunteers. The diagnosis of OSA (odds ratio 4.93, 95% CI 1.01-24.1, P = 0.049) and depression by HADS (odds ratio 4.91, 95% CI 1.44-16.71, P = 0.011) were shown to be independently associated with functional dyspepsia by multivariate logistic regression.

Conclusion OSA is associated with functional dyspepsia. Sleep disturbances previously attributed to psychological comorbidities in FGID may in fact be due to undiagnosed OSA. A novel treatment strategy for the screening of OSA as part of the management approach in all patients with FGIDs should be considered.

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RISK OF GASTROINTESTINAL BLEEDING IN PATIENTS WITH NON-ST ELEVATION MYOCARDIAL INFARCTION TREATED WITH DOUBLE ANTI-PLATELET AND ANTI-COAGULATION THERAPIES: A RETROSPECTIVE ANALYSIS

Dr Tsang Chiu Chung, Department of Medicine, North District Hospital (May 2017 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Patients with non-ST elevation myocardial infarction (NSTEMI) are treated with double anti-platelet and anti-coagulation therapies. The treatment, however, may increase the risk of gastrointestinal bleeding. Therefore, there is a need to know about the factors which could predict the likelihood of this complication or reduce its risk.

Objective The objective of this retrospective analysis is to study the incidence of gastrointestinal bleeding in patients with NSTEMI and treated with aspirin, clopidogrel and enoxaparin (the combination regime). This study also aimed at identifying any risk factors or protective factors related to this outcome.

Methods From 2007 to 2015, patients who had been admitted to the North District Hospital for NSTEMI and treated with the combination regime were recruited. The primary outcome was the occurrence of clinically overt gastrointestinal bleeding during treatment, or within ten days after stopping enoxaparin.

Results Our study group consisted of 318 patients. Overall, the incidence of clinically overt gastrointestinal bleeding was 1.9% (6/318). Univariate analysis showed that the occurence of cardiogenic shock (P=0.013), intra-aortic balloon pump (IABP) insertion (P=0.003), endotracheal intubation (P=0.008), non-invasive ventilation (NIV) (P=0.010), Intensive Care Unit (ICU) care (P=0.008) and longer length of stay (P=0.006) were significant risk factors. No statistically significant protective factors were identified.

Conclusion The incidence of clinically overt gastrointestinal bleeding in NSTEMI patients treated with aspirin, clopidogrel and enoxaparin was estimated to be 1.9%. Significant risk factors for this outcome include the occurrence of cardiogenic shock, IABP insertion, endotracheal intubation, NIV use, ICU care and longer length of stay.

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IS DELAYED ERCP ASSOCIATED WITH WORSE OUTCOMES IN PATIENTS WITH MILD TO MODERATE ACUTE CHOLANGITIS?

Dr Yiu Ka Ling, Department of Medicine, North District Hospital (May 2017 Gastroenterology & Hepatology Exit Assessment Exercise)

Background The optimal timing for endoscopic retrograde cholangiopancreatography (ERCP) in patients with mild to moderate acute cholangitis is unclear.

Objective To investigate the impact of timing of ERCP on clinical and technical outcomes in patients with mild to moderate acute cholangitis.

Methods A retrospective study was performed for patients who were diagnosed with acute cholangitis and underwent ERCP in North District Hospital from June 2012 to September 2013. They were divided into two groups according the door-to-intervention time, early (<48 hours, n=91) and late group (≥ 48 hours, n=48). Primary outcomes were organ failure and mortality. Secondary outcomes were ICU admission, ICU stay, hospital stay and procedure-related complications.

Results 182 patients were diagnosed with mild to moderate acute cholangitis and had ERCP performed during the study period. There was no significant difference in organ failure,

inpatient mortality and 30-days mortality (P=0.54, 1.0, 1.0 respectively). There were also no differences in procedure-related complication, ICU admission, length of ICU stay (P=0.06, 1.0, 0.69 respectively). Patients in the delayed group was found to have longer hospital stay by 2 days (9 vs 7 days, P=0.01); However, there were more sphincterotomy (P=0.01) and less placement of stent (P=0) in the delayed group. This group of patients also required less follow-up elective ERCP (P=0).

Conclusion For stable patients with mild to moderate acute cholangitis, delayed ERCP was not associated with worse clinical outcomes such as organ failure, ICU admission and mortality. On the other hand, it was associated with less elective readmission for follow-up ERCP.

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EFFICACY OF IMPLEMENTATION OF THE STOPP/START CRITERIA IN CHINESE NURSING HOME OLDER ADULTS: A 12-MONTH PROSPECTIVE COHORT STUDY

Dr Cheng Ka Chun, Department of Medicine, Queen Mary Hospital (May 2017 Geriatric Medicine Exit Assessment Exercise)

Background Potentially inappropriate prescription (PIP) was prevalent among older adults and may lead to adverse outcomes. STOPP/START are evidence-based sets of criteria to identify potentially inappropriate prescriptions in older adults. Whether its implementation is effective to reduce the prevalence of PIP and improve clinical outcomes in local settings is unknown.

Objective To determine the effect on potentially inappropriate prescriptions over time with written recommendations based on STOPP/START criteria and to assess the clinical outcomes of implementing the STOPP/START criteria.

Subject and Method 990 nursing home residents with at least one medication from 13 nursing homes under Hong Kong West Community Geriatric Assessment Team (HKW CGAT) care were recruited. Residents from six nursing homes received enhanced medication screening program based on the STOPP/START criteria were regarded as the intervention group while residents from another seven homes received usual care were regarded as the control group. All participants were followed up at 12 month.

Results 459 residents (46.4%) had at least one PIP according to STOPP/START criteria. 80% of the 281 written recommendations made in the intervention group were followed by the attending CGAT clinician. There was significant reduction in PIP in the intervention group from 56 to 20 PIP per 100 subjects (P<0.001) in the intervention group at 12 month while there was no difference in PIP in the control group at 12 month. The number of residents with at least one accident and emergency department (AED) visits not requiring hospitalization was increased in the control group (P=0.02) while the intervention group remained unchanged. The total number of medication, rates of unscheduled hospitalization, falls and mortality were similar for both groups at 12 month follow up.

Conclusion Enhanced medication screening with written recommendations based on STOPP/START criteria significantly reduced potentially inappropriate prescriptions with an effect maintained at 12 month in Chinese nursing home older adults. Residents with AED visits not requiring hospitalization was increased in the control group but remained unchanged in the intervention group at 12 months. The STOPP/START criteria is a useful tool to improve the quality of prescribing and reduce health care utilization.

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USE OF NOVEL ORAL ANTI-COAGULANT (NOAC) AND ITS OUTCOMES ON THE ELDERLY PATIENTS: A LOCAL STUDY

Dr Lam Sai Tim, Department of Medicine, Pamela Youde Nethersole Eastern Hospital (May

2017 Geriatric Medicine Exit Assessment Exercise)

Background Atrial fibrillation is common in the elderly. Novel oral anti-coagulants (NOACs) are nowadays more and more commonly used as stroke prophylaxis in patients with non-valvular atrial fibrillation and systemic thromboembolism. Elderly patients are known to have a higher risk of bleeding, however the safety profile of NOACs in the older-old (age ≥ 85) in Hong Kong is not known.

Purpose We aim to evaluate if the older-old (age ≥ 85) had a higher bleeding risk when taking NOACs, when compared with the younger-old (age ≥ 65 to <85), and to identify the risk factors for bleeding events in the elderly taking NOACs. Prescription pattern of the NOACs in the elderly was also reviewed.

Methods This was a retrospective cohort study being done in a regional hospital in Hong Kong, Pamela Youde Nethersole Eastern Hospital (PYNEH). The elderly with age ≥ 65 started using NOACs, including Dabigatran, Rivaroxaban and Apixaban in the year 2014 were recruited via the Clinical Data Analysis and Reporting System (CDARS). Relevant information was recorded from the computerized Clinical Management System (CMS), electronic Patient Records (ePR) and medical records, until discontinuation of the drug or 30th June, 2015. Baseline characteristics of patients and the prescription pattern of NOACs were analyzed with descriptive statistics. Older-old (age ≥ 85) group was compared with the younger-old (age 65 to <85) group for the bleeding events, including total bleeding events, major bleeding, minor bleeding, gastrointestinal bleeding and extra-cranial bleeding. Statistical differences between groups were assessed and relative risk was calculated by using Chi-Square test and Fisher's exact test when appropriate for categorical variables, and Mann-Whitney U test for the continuous variables. Kaplan-Meier curve estimator was used to evaluate time to bleeding events.

Results Older-old was associated with a higher risk of gastrointestinal bleeding compared with the younger-old (RR 2.62, 95% CI 1.12-6.12, P=0.027). There was a trend that older-old were at a higher risk of total bleeding events (RR 1.74, 95%CI 0.99 – 3.06, P=0.068). The following risk factors for total bleeding events were identified: History of ischaemic stroke (RR 1.74, 95% CI 1.02 – 2.99, P=0.048), body weight <50kg (RR 2.45, 95% CI 1.15-5.19, P 0.023), being chair- to bed-bound in mobility (RR 2.45, 95% CI 1.20-5.03, P=0.034) and being dependent in daily activities of living (RR 2.62, 95% CI 1.27-5.40), P=0.036). Concurrent use of non-steroidal anti-inflammatory drugs (NSAIDs) or anti-platelet was associated with a higher risk of gastrointestinal bleeding (RR 3.25, 95% CI 1.18-8.95, P=0.034). Body weight, which is an important parameter in calculating creatinine clearance by Cockcroft-Gault equation for the correct dosage of NOAC, was not well documented before starting NOACs. Only 44 patients (31.7%) were prescribed with the correct dosage of NOACs. Inappropriate dosage of NOACs was associated with a higher risk of total bleeding events (RR 2.56, 95%CI 1.12-5.85, P=0.022).

Conclusion The risk of gastrointestinal bleeding was higher in the older-old taking NOACs, when compared with the younger-old. There was also a trend of higher risk in total bleeding events in the older-old. Mobility, functional status and medication history are important when assessing the bleeding risk of NOACs in the elderly. Comprehensive geriatric assessment before prescription of NOACs in the elderly is therefore advised. Awareness about documentation of body weight and calculating the creatinine clearance by Cockcroft-Gault equation for the correct dosage of NOACs should be raised.

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HYPONATREMIA IN HOSPITALIZED OLDER ADULTS: A RETROSPECTIVE COHORT STUDY

Dr Mak Ka Pui, Department of Medicine & Geriatrics, Tai Po Hospital (May 2017 Geriatric Medicine Exit Assessment Exercise)

Background Hyponatremia is a common electrolyte disturbance in hospitalized older patients. The objective of thisretrospective cohort study is firstly to examine whether admission hyponatremia in hospitalized older peopleis associated with higher mortalityat 6 months and 1 year, secondly to look for associated factors of hyponatremia, thirdly to see whether these factors are associated with mortality and lastly to identify SIADH and its etiology in this population.

Method Mortality of the study subjects at 6months and 1 year after the index episode was retrieved from Electronic Patient Record. Demographic data, relevant investigations, comorbid conditions and medications were recorded. The associations of hyponatremia with other factors and mortality were examined by using logistic regression analysis.

Result 91 patients were includedin this cohort study. The severity of hyponatremiawas not associated with 6-month and 1-year mortality. Tube feeding (OR 6.89; 95% CI 1.44 to 32.9; p 0.016) and hypovolemia (OR 6.39; 95% CI 1.12 to 36.45; p 0.037) were associated with lower serum sodium concentration. Albumin level (OR 0.78; 95% CI 0.67 to 0.92; p 0.003) and dementia (OR 4.71; 95% CI 1.15 to 19.21 p 0.031) were associated with 6-month mortality while albumin level (OR 0.88; 95% CI 0.80 to 0.96; p 0.006) and pneumonia (OR 3.56; 95% CI 1.09 to 11.7; p 0.036) were associated with 1-year morality in older patients with hyponatremia. Mild hypothyroidism may be associated with 6-month and 1-year mortality in hyponatremic older adults. 9.9% (n = 9) of patients had SIADH of which the etiology could be idiopathic or multifactorial.

Conclusion The severity of hyponatremiawas not shown to be associated with 6-month and 1-year mortality, implying that it was the underlying diseases contributed to the mortality in these patients.

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USE OF GRIP STRENGTH AND GAIT SPEED IN PREDICTION OF HOSPITALIZATION AND MORTALITY IN VERY FRAIL OR DISABLED OLDER ADULTS

Dr Tse Chit Ming, Department of Medicine & Geriatrics, Pok Oi Hospital (May 2017 Geriatric Medicine Exit Assessment Exercise)

Background Grip strength and gait speed were two important physical parameters for identification of frailty and were independent predictive factors of adverse health outcomes in community-dwelling older adults. Their use among the very frail or disabled older adults was unknown.

Method 188 recently discharged patients were recruited from Pok Oi Hospital Geriatric Day Hospital (GDH). The grip strength, gait speed, demographic data, cognitive function and medical co-morbidities were documented. Univariate and multivariate logistic regression were used to determine whether grip strength and gait speed are predictors of 3-month admission rate and 1-year mortality.

Results Grip strength was independently associated with 1-year mortality in men (odds ratio 0.863, 95% confidence interval 0.755 – 0.987). Grip strength was associated with 1-year mortality in female in multivariate analysis only. It was not associated with 3-month admission rate in both genders. Gait speed was not related to 3-month admission rate or mortality in both genders.

Conclusion Stronger grip strength is an independent protective factor of 1-year all-cause mortality in men among the very frail or disabled patients who attended the geriatric day hospital after recent hospitalization. It is less certain similar association exists in women. The predictive value of grip strength and gait speed in terms of hospital admission is limited in GDH patients.

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IDENTIFYING HIGH-RISK DIFFUSE LARGE B-CELL LYMPHOMA (DLBCL) PATIENTS: RETROSPECTIVE ANALYSIS OF PROGNOSTIC FACTORS AND OUTCOMES IN A REGIONAL HEMATOLOGY CENTER IN HONG KONG

Dr Ho Wing Bing Lydia, Department of Medicine & Geriatrics, Princess Margaret Hospital (May 2017 Haematology & Haematological Oncology Exit Assessment Exercise)

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Background Diffuse large B-cell lymphoma (DLBCL) is potentially curable; however up to 40% patients are relapse and refractory despite standard R-CHOP therapy (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone).

Objectives The aim was to investigate prognostic factors and outcome of DLBCL patients after given R-CEOP (rituximab, cyclophosphamide, epirubicin, vincristine, and prednisone) in this center. This study consisted of three parts: (1) clinical prognostic factors, (2) central nervous system (CNS) relapse and effectiveness of CNS prophylaxis, and (3) the prognostic significance of MYC and BCL2 double-expressor lymphoma (DEL).

Methods Retrospective cohort study with 194 patients for part 1 and part 2, while part 3 involved a subgroup analysis of 47 patients with retrospective MYC and BCL2 immunohistochemical staining done.

Results Part 1 found that the International Prognostic Index (IPI) score, male gender and bulky disease ≥ 10cm were poor prognostic factors. Absolute lymphocyte count, absolute monocyte count and the lymphocyte-monocyte ratio were not associated with outcome. Part 2 showed that elevated lactate dehydrogenase, extranodal sites ≥ 2 and the CNS-IPI score were significantly associated with CNS relapse. High-risk anatomical sites identified were breast, epidural/paravertebral space, adrenal and the bone marrow. Administration of intrathecal methotrexate CNS prophylaxis did not ameliorate the risk of CNS relapse. Part 3 showed that DEL patients had an insignificant trend of inferior events-free survival but no significant difference in overall survival and CNS-progression free survival.

Conclusion This study has identified several prognostic factors of high-risk DLBCL patients in Hong Kong and proposed treatment strategies to improve outcome.

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ELTROMBOPAG IN CHINESE PATIENTS WITH IMMUNE THROMBOCYTOPENIA, A SINGLE CENTRE EXPERIENCE

Dr Tam Ho Chi, Department of Medicine & Therapeutics, Prince of Wales Hospital (May 2017 Haematology & Haematological Oncology Exit Assessment Exercise)

Immune thrombocytopenia (ITP) is an immune disorder with premature platelet destruction by self-reacting antibodies in addition to an impairment of platelet production. A new class of drugs, the thrombopoietin receptor agonists, has been developed for ITP. In international randomized controlled trials, these drugs are documented to have high efficacy and are well tolerated. Long term data specific to Chinese patients are lacking.

In this study, 55 consecutive adult Chinese patients with ITP treated in a tertiary teaching hospital were retrospectively evaluated from the period of March 2005 to September 2016, focusing on the efficacy, safety and tolerability of eltrombopag. The impacts of eltrombopag on concomitant treatments of ITP (e.g. immunosuppressive therapies) were also assessed.

At the time of analysis, patients received eltrombopag for a median duration of 116 weeks (range: 2 to 520 weeks). Forty-nine patients (89.1%) achieved platelet responses ≥30 x 10^9/L and ≥50 x 10^9/L at least once independent of any rescue therapies. Thirty-eight (69.1%) demonstrated complete platelet responses ≥100 x 10^9/L at least once. The median and

maximum continuous duration of response with platelet maintained ≥30 x 10^9/L were 60 weeks and 508 weeks respectively. The incidence of significant bleeding symptoms (WHO grade 2-4) decreased significantly from the baseline of 20.8%, while grade 3/4 bleeding were rare. Thirty-one of the 39 (79%) patients with concomitant immunosuppressive therapies were able to reduce these medications while 16 (41%) had discontinued all of them.

Adverse events were reported in 21 (38.2%) patients during eltrombopag treatment, while 8 (14.5%) patients stopped eltrombopag due to the adverse events. The incidences of thromboembolic event (9.1%), hepatobiliary laboratory abnormalities (5.5%), marrow fibrosis (5.5%) and cataract (0%) were similar to those in international trials.

In conclusion, this study demonstrated that eltrombopag is a safe and effective option for long term treatment of Chinese ITP patients.

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EPIDEMIOLOGY AND CLINICAL FEATURES OF BACTERIAL BLOOD STREAM INFECTION IN HOSPITALIZED HAEMATO-ONCOLOGY PATIENTS: A SINGLE CENTRE RETROSPECTIVE STUDY

Dr Yip Pui Lun, Department of Medicine, Queen Elizabeth Hospital (May 2017 Haematology & Haematological Oncology Exit Assessment Exercise)

Purpose Blood stream infection (BSI) is an important complication in patients with hematological malignancy. The changing epidemiology and emergence of antimicrobial resistance have posed challenges in management of these patients. However, local data in this area is limited. This study is aimed to identify the epidemiologic characteristics of BSI and factors associated with outcome, which include serious complications and mortality

Patients and Methods We retrospectively reviewed 110 episodes of bacteraemia in 75 adult patients with haematological malignancy from January, 2014 to June, 2016 in Queen Elizabeth Hospital. Patients' clinical characteristics and disease conditions were analyzed for their association with microbiological features and outcome.

Results BSI was mainly due to gram-negative organism (78%), *E. Coli* was the commonest isolate (41%), followed by *K. pneumonia*(13%), *P. aeruginosa* (12%) and *S. mitis* (12%). 44% of *E. Coli* and *K. pneumonia* isolated were ESBL-producing and less than half of *S. mitis* (36%) were sensitive to penicillin. Prior exposure to antibiotics and presence of central line were found to be risk factors for ESBL-producing Enterobacteriace BSI in multivariate analysis. All patients with *S. mitis* BSI had acute leukemia and recent cytarabine exposure. Presence of foci of infection and neutropenia were risk factors for development of serious complications, while nosocomial infection, older age and non-CR or non-PR haematological disease status were risk factor for 30-day mortality.

Conclusion Our results confirmed the predominance of Gram-negative bacteria as causative agents of BSI and high frequency of antimicrobial resistance. Antibiotics prescription should be adjusted according to local epidemiology and patients' individual risk factors.

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THE IMMEDIATE AND LONG-TERM OUTCOME OF PATIENTS ADMITTED FOR COMMUNITY-ACQUIRED PNEUMONIA OVER A 12-MONTH-PERIOD WITH DIFFERENT AETIOLOGICAL AGENTS IN A SINGLE ACUTE MEDICAL UNIT

Dr To Ki Wai Heather, Department of Medicine and Therapeutics, Prince of Wales Hospital (June 2017 Infectious Disease Exit Assessment Exercise)

Background Community-acquired pneumonia is a major cause of hospital admission leading to significant disease burden and mortality. Different microbiological aetiologies

may differ in terms of disease severity. The objective of this retrospective study was to review the immediate and long-term outcome of patients admitted for community-acquired pneumonia with reference to different microbiological agents over a one-year period.

Method All patients with the discharged diagnosis of pneumonia admitted within 2015 to the Medical unit of Prince of Wales Hospital, HK, were reviewed for inclusion into the analysis. Data on patient's baseline characteristics, microbiological diagnosis if available, clinical outcomes and empirical choice of antibiotics were collected. The primary outcomes were 30-day and 1-year mortality, and the secondary outcomes were need of intensive care unit admission, ventilatory support and length-of-stay.

Results In total 1916 patients were discharged with the diagnosis of pneumonia, 740 were included into the analysis after reviewing the inclusion and exclusion criteria. 28.1% (n=208) patients had a positive microbiological diagnosis, most commonly viral pneumonia (n=102), followed by bacterial pneumonia (n=70) and mixed etiologies of both bacterial and viral infection (n=18). *Pseudomonas aeruginosa* and Influenza A were the most commonly identified bacterial and viral pathogen respectively. The overall all-cause 30-day mortality was 15.8% and 1-year mortality was 30.0%, which was comparable among all different groups of microbiological aetiologies.

Conclusion Community-acquired pneumonia requiring hospital admission was associated with a high immediate and long-term mortality with regard to different microbiological diagnoses. Advances in diagnostics is likely to improve the outcome through early identification of causative pathogens and better understanding of local epidemiology and resistant pattern.

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TARGETED THERAPY AND NOVEL TREATMENTS IN METASTATIC COLORECTAL CANCER: CURRENT EVIDENCE, AND RECENT ADVANCES IN REFRACTORY DISEASE

Dr Kwok Gin Wai, Department of Medicine, Queen Mary Hospital (June 2017 Medical Oncology Exit Assessment Exercise)

Anti- epidermal growth factor receptor (EGFR) and anti-vascular endothelial growth factor (VEGF) targeted therapy have been incorporated into the European Society of Medical Oncology (ESMO) and National Comprehensive Cancer Network (NCCN) treatment guidelines for metastatic colorectal cancer (mCRC). In this paper, we summarise key findings from phase 3 clinical trials, and look at established predictive and prognostic biomarkers associated with anti-EGFR and anti-VEGF therapy. We explore ongoing efforts to target angiogenesis and novel agents that have established efficacy in refractory disease. In special populations with mCRC, we discuss treatment controversies surrounding anti-angiogenesis and anti-EGFR treatment, and in patients with refractory disease, we report and discuss the efficacy and safety findings of salvage capecitabine, oxaliplatin, and irinotecan (Xeloxiri) in a prospective single arm phase 2 clinical trial.

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A STUDY ON THROMBOEMBOLISM IN PATIENTS WITH PANCREATIC CANCER

Dr Lam Kwan Yu, Department of Clinical Oncology, Prince of Wales Hospital (June 2017 Medical Oncology Exit Assessment Exercise)

Background There have been studies on the association between thromboembolism (TE) and pancreatic cancer in Caucasian patients. This study aims to study the TE in Chinese patients with pancreatic cancer.

Methods This study retrospectively reviewed consecutive patients with confirmed

diagnoses of pancreatic cancers from 2010-2015 in the Prince of Wales Hospital in Hong Kong. Patients with radiologically confirmed TE were identified. Corresponding information related to the type and site of TE were recorded. Predictive factors for the TE were studied by univariate and multivariate analyses.

Results A total of 371 patients with pancreatic cancer were identified. In the cohort, the diagnoses of cancers were made by histology in 225 (60.6%) of them while others were made by radiology. The stage was as follows: 15 (4.0%) stage I; 112 (30.2%) stage II; 47 (12.7%) stage III and 197 (53.1%) stage IV. A total of 55 (14.8%) patients had TE after diagnosis of pancreatic cancer. Of these 55 patients, 33 (60%), 18 (32.7%), and 4 (7.3%) had venous TE, arterial TE, and combined venous and arterial TE, respectively. For patients with TE, 27 (49.1%) were treated with anti-coagulation, and 13 (23.6%) had surgery within 2 years. The median time from surgery to the development of TE was 1.06 years. Patients with metastatic (M1) disease had a higher risk of developing TE (OR 2.21, 95% CI 1.20-4.07, P 0.01), and patients who had surgery within two years of TE had a lower risk of developing TE (OR 0.39, 95% CI 0.20-0.76, P 0.01). Patients with venous, arterial, or both types of TE did not have significantly different overall survival. Poor prognostic factors for overall survival include ECOG ≥2 (HR 2.796, 95% CI 2.172-3.599, P <0.001) and tumour stage (stage IV disease HR 4.912, 95% CI 2.581-9.351, P <0.001). The presence of TE equated to a worse overall survival (HR 1.028, 95% CI 0.755-1.40, P 0.86), which was statistically insignificant.

Conclusions TE was similarly high in Chinese patients with pancreatic cancer. Patients with metastatic disease had a greater risk of developing TE, and those who had surgery within two years had a lower risk of developing TE. Patients with TE had a worse overall survival (which was statistically insignificant) compared to patients without TE.

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CARDIAC CALCIFICATION AND CARDIOVASCULAR DISEASE IN PERITONEAL DIALYSIS PATIENTS – A SINGLE-CENTRE CROSS-SECTIONAL STUDY USING AN ECHOCARDIOGRAPHY-DERIVED CALCIFICATION SCORE

Dr Sin Ho Kwan, Department of Medicine & Geriatrics, Kwong Wah Hospital (June 2017 Nephrology Exit Assessment Exercise)

Background An echocardiography-derived calcification score (ECS) is predictive of major cardiovascular disease (CVD) in the non-dialysis population but its role in dialysis patients is unknown. We examined the relationship between CVD and ECS in peritoneal dialysis (PD) patients.

Methods This single-centre study assessed 125 prevalent PD patients. ECS ranged from 0-8. A higher score meant more calcification. ECS was compared between subjects with CVD including ischemic heart disease (IHD), cerebrovascular disease and peripheral vascular disease (PVD), and those without CVD.

Results 54 subjects had CVD and 71 did not. Subjects with CVD, in particular IHD and cerebrovascular disease, had higher ECS (2 vs 1, p = 0.001) compared to those without CVD. Subjects with CVD were older (69 vs 56 years, p < 0.001) and had more diabetes mellitus (DM) (81.5% vs 45.1%, p < 0.001), lower diastolic blood pressure (72 vs 81 mmHg, p < 0.001), phosphate (1.6 vs 1.9 mmol/L, p = 0.002), albumin (30 vs 32 g/L, p = 0.001), parathyroid hormone (34.4 vs 55.8 pmol/L, p = 0.002), and cholesterol (mmol/L): total (4.5 vs 4.9, p = 0.047), LDL (2.4 vs 2.8, p = 0.019), HDL (0.8 vs 1.1, p = 0.002). On multivariate analysis, both CVD and ECS were independently predicted by the presence of DM and age.

Conclusion PD patients with CVD had higher ECS than those without CVD but ECS does not appear to provide independent diagnostic value for CVD. The clinical significance of ECS in this context requires further study.

Key words Cardiovascular disease, End-stage renal disease, Peritoneal dialysis,

Calcification

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OUTCOMES OF CAROTID ARTERY STENTING FOR RADIATION INDUCED CAROTID STENOSIS WITH AND WITHOUT TEMPORAL LOBE NECROSIS

Dr Chan Chi Him Simon, Department of Medicine, Queen Elizabeth Hospital (May 2017 Neurology Exit Assessment Exercise)

Background There have been limited studies in the evaluation of outcomes of carotid artery stenting (CAS) in radiation induced carotid stenosis. We sought to evaluate the short term and long term outcomes of CAS for radiation induced carotid stenosis through comparing the outcomes of CAS between radiation induced and atherosclerotic carotid stenosis, with a particular interest in the concomitant presence of temporal lobe necrosis (TLN), which has been shown to be associated with radiation induced carotid stenosis as both were mediated by radiation induced vascular injury.

Methods We conducted a retrospective cohort analysis of 32 patients with radiation induced carotid stenosis after radiotherapy for nasopharyngeal carcinoma and 69 patients with atherosclerotic carotid stenosis, who underwent CAS between January, 2011 and December, 2014 in Queen Elizabeth Hospital, a regional hospital in Hong Kong Special Administrative Region providing neurological, neurosurgical and oncological service. Primary outcomes included perioperative complication composite endpoint (including cerebrovascular events, myocardial infarction and all cause mortality), ipsilateral ischaemic stroke or transient ischaemic attack (TIA) beyond 30 days after CAS and a primary composite endpoint of perioperative complication composite endpoint and ipsilateral ischaemic stroke or TIA beyond 30 days after CAS. Secondary outcomes included mortality beyond 30 days after CAS and development of in-stent restenosis (ISR) of greater than or equal to 50% on follow up imaging. Survival analyses of the primary and secondary outcomes comparing between radiation induced and atherosclerotic carotid stenosis and III between radiation induced carotid stenosis with and without TLN were performed.

Results There was a statistically insignificant trend of lower perioperative complication risk (Absolute risk difference -4.5%; Odds ratio 0.521; 95% CI 0.102-2.649; p=0.715), particularly in terms of cerebrovascular events, in radiation induced carotid stenosis and we observed a statistically insignificant trend of higher risk of ipsilateral ischaemic stroke or TIA beyond 30 days after CAS (Absolute risk difference 3.9%; Hazard Ratio 1.432; 95% CI 0.383-5.354; p=0.594) in radiation induced carotid stenosis.
There were no significant differences in the primary composite endpoint (Absolute risk difference 0.8%; Hazard ratio 0.980; 95% CI 0.361-2.657; p=0.980), mortality beyond 30 days after CAS (Absolute risk difference 2.6%; Hazard ratio 1.176; 95% CI 0.394-3.511; p=0.772) and development of ISR of greater than or equal to 50% on follow up imaging (Absolute risk difference 2.6%; Hazard ratio 1.236; 95% CI 0.348-4.385; p=0.743) between radiation induced and atherosclerotic carotid stenosis. Amongst patients with radiation induced carotid stenosis, the concomitant presence of TLN did not have a significant impact on the incidence of primary and secondary outcomes.

Conclusion We observed a statistically insignificant trend of lower perioperative complication risk but higher long term risk of ipsilateral cerebrovascular ischaemic events in CAS for radiation induced carotid stenosis. There were no significant differences in terms of mortality and ISR between CAS for radiation induced and atherosclerotic carotid stenosis. Amongst patients with radiation induced carotid stenosis, the concomitant presence of TLN did not have a significant impact on the incidence of primary and secondary outcomes. Further large scale trials would be required to achieve adequate sample size for determining statistically significant differences in perioperative complication risk and long term risk of ipsilateral cerebrovascular ischaemic events between CAS for radiation induced and atherosclerotic carotid stenosis.

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A REVIEW OF MYOTONIC DYSTROPHY IN HONG KONG

Dr Cheung Chi Fung, Department of Medicine & Geriatrics, Tuen Mun Hospital (May 2017 Neurology Exit Assessment Exercise)

Background Myotonic dystrophy(DM)is the commonest adult onset muscular dystrophy, with multi-systemic involvement and significant morbidity. Clinical characteristics had been well described in western populations and Asian populations such as Japan, Korean, Taiwan and China. However, local data in Hong Kong is scarce.

Objective To describe the clinical characteristics of local DM population and explore the association between CTG repeat size and clinical presentation. We hope the quality of care can be further improved through better understanding of the disease nature.

Methods This was a retrospective study. The clinical records of patients being diagnosed with myotonic dystrophy in seven major hospitals in Hong Kong from the period of June 2006 to September 2016 were reviewed. Only those patients with genetic confirmation or the typical clinical and electrophysiological evidence of DM were included in the analysis.

Results A total of 91 patients were included. The male-to-female ratio was 1:1.2. Sixty-two (68.1%) patients were genetically confirmed DM and all were DM1. Full genetic reports were available in 45 patients. Among them, 1 patient (2.2%) had 50 to 149 CTG repeats, 26 patients (57.8%) had 150-999 CTG repeats and 18 patients (40%) had 1000 or more CTG repeats. The mean age of symptom onset was 33.5±14.5 years old. Baldness was more common in male patients than female patients (70.4% vs 28.0%, p = 0.001), while psychiatric disorders were more frequent in female patients than male patients (18.4% vs 2.0%, p=0.020). CTG repeat size had negative correlation with age of symptom onset (r = -0.337, p = 0.024). Patient with more than or equal to1000CTG repeats tended to develop more systemic complications when compared to those with less than 1000 repeats, especially cataracts (44.4% vs 14.8%, p=0.041), dysphagia (72.2% vs 25.9%, p=0.002), falls (94.4% vs 55.6 %, p = 0.006), thyroid disorders (44.4% vs 14.8%, p=0.041) and mental retardation (27.8% vs 3.7%, p=0.031). Over the 10-year period, 25 patients (27.4%) were dead at the mean age of 55.8±6.9 years old, with chest infection (40%) and sudden death (24%) being the most common causes. Severe proximal weakness (OR 25.50, 95% confidence interval [CI], 4.03-161.01), severe ECG abnormalities (OR 13.83, 95% CI, 2.43-78.71) and thyroid disorder (OR 11.50, 95% CI, 1.81-73.21) were the predictors for all-cause mortality.

Conclusion Myotonic dystrophy is a multi-systemic illness with significant morbidity and mortality. Patients with larger CTG repeats tended to have earlier disease onset and develop more systemic complications. Chest infection and sudden death were the major causes of death. Severe proximal weakness, severe ECG abnormalities and thyroid disorders were the predictors for all-cause mortality. This study can provide important background information to facilitate the development of a structured care model of myotonic dystrophy in Hong Kong.

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AN EPIDEMIOLOGICAL AND OUTCOME STUDY OF GUILLAIN-BARRÉ SYNDROME AND MILLER FISHER SYNDROME IN HONG KONG

Dr Li Man Lung, Department of Medicine & Geriatrics, Tuen Mun Hospital (May 2017 Neurology Exit Assessment Exercise)

Objective In previous studies, acute inflammatory demyelinating polyneuropathy (AIDP) was the predominant form of Guillain-Barré syndrome (GBS) and Miller Fisher syndrome (MFS) was uncommonly found. However, MFS appeared more frequent in recent years. This study aimed to investigate the incidence of subtypes, clinical features, and outcome of GBS and MFS in Hong Kong.

Method A retrospective analysis of medical records of GBS and MFS patients in Tuen Mun

Hospital (TMH) from 2006 -2016 was performed. We classified GBS and MFS into various subtypes according to the clinical and electrophysiological criteria. The corresponding clinical features and investigation findings were used for prognostic analysis according to GBS disability score at 6 month.

Result A total of 75 patients were included for analysis. The male-to-female ratio was 1.88:1. The disease incidence increased with age until 70, after which it declined. Seasonal preponderance was significant in spring and winter (p=0.017). Overall, 30 patients (40%) were diagnosed with AIDP, 3 patients (4%) with paraparetic GBS, 1 patient (1.3%) with bifacial weakness with paraesthesia, 1 patient (1.3%) with acute motor axonal neuropathy (AMAN) and 1 patient (1.3%) with acute motor and sensory axonal neuropathy (AMSAN), 12 patients (16%) with classic MFS, 12 patients (16%) with acute ophthalmoparesis, 4 patients (5.3%) with acute ataxic neuropathy, and 2 patients (2.7%) with GBS/MFS overlap. In summary, MFS group accounted for 28 patients (37.3%). However, when focusing on the period from 2010 to 2015, the number of patients diagnosed with MFS (27 patients, 42.9%) had exceeded AIDP (22 patients, 34.9%). MFS had even become predominant subtypes since 2010. Disability GBS score at nadir ($p<0.001$), dysautonomia, reduced distal compound muscle action potential (CMAP) amplitude (OR: 6.03, p=0.012) and hyponatremia upon admission (OR: 4.43, p=0.021) were significantly associated with functional outcome at 6 month. High GBS disability score at nadir was an independent predictor for poor functional outcome at 6 month.

Conclusions Miller Fisher syndrome revealed a steep rise in incidence since 2010 and has become the major subtype of all GBS spectrum disorders. Disability GBS score at nadir, dysautonomia, reduced distal CMAP amplitude and hyponatremia upon admission were significantly associated with functional outcome at 6 month. Clinical severity at nadir was independently predictive for outcome at 6 month.

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PALLIATIVE CARE NEEDS FOR PATIENTS WITH MALIGNANT BOWEL OBSTRUCTION IN A LOCAL PALLIATIVE CARE UNIT IN HONG KONG

Dr Ho Chun Wing, Integrated Medical Service, Ruttonjee Hospital (June 2017 Palliative Medicine Exit Assessment Exercise)

Introduction Malignant bowel obstruction (MBO) is not uncommon among palliative care patients, and it leads to physical, psychological and spiritual distress.[1,2] Medical palliation, including the use of analgesics, antiemetics, antisecretory drugs and dexamethasone, could reduce gastrointestinal symptoms and improve patient's quality of life (QOL).[3]

Objective To identify the palliative care needs of patients with MBO in terms of symptom burden, course of illness, medical interventions, functional outcome and survival after diagnosis of MBO.

Method This retrospective observational study was performed in a local palliative care unit (PCU) in Hong Kong. Patients who were ethnic Chinese with known malignant disease and MBO under inpatient palliative care from 1st July 2010 to 30th June 2016 were recruited.

Results Among 62 patients with bowel obstruction identified in the study, 32 patients were recruited for analysis. There were 17 males (53%) and 15 females (47%), with mean age of 76.8 +/- 10.8. All recruited patients had intra-abdominal primary cancer. 30 patients (94%) had gastrointestinal cancer, most commonly colorectal cancer as single primary in 25 patients (78%), colorectal and stomach primaries in 1 patient (3%), colorectal and ureteric primaries in 1 patient (3%), stomach cancer in 1 patient (3%), small bowel adenocarcinoma in 1 patient (3%) and gallbladder cancer in 1 patient (3%). 1 patient (3%) had urinary bladder cancer and 1 patient (3%) had gynecological cancer. 22 patients (69%) had metastatic disease upon the diagnosis of MBO. The most common symptoms were fatigue in 31 patients (97%), anorexia in 29 patients (91%), abdominal distension in 27 patients (84%), vomiting in 25 patients

(78%), constipation in 24 patients (75%) and abdominal pain in 23 patients (72%). Of the 23 patients with abdominal pain who received medical palliation, 21 patients (91%) had documented a reduction of pain. Of the 25 patients with vomiting who received medical palliation, 13 patients (52%) were free from vomiting 5 days after medical palliation, and 19 patients (76%) were free from vomiting 3 days before death. Small bowel obstruction (p=0.03) was associated with persistent vomiting despite use of medical palliation for 5 days. Ambulatory status before the MBO episode was associated with discharge from PCU after episode of MBO (p=0.043). The median survival after diagnosis of MBO was 25 days (IQR: 9-51 days).

Conclusion MBO is associated with fatigue and multiple gastrointestinal symptoms. Medical palliation was effective in reducing pain and vomiting caused by MBO. Further studies on psycho-spiritual burden, carers' stress, and quality of life of both patients and carers should be considered.

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PREVALENCE AND RISK FACTORS OF PERSISTENT AIR LEAK IN PATIENTS WITH SECONDARY PNEUMOTHORAX IN A REGIONAL HOSPITAL AND A REVIEW OF THE LITERATURE

Dr Cheng Hei Shun, Department of Medicine, Pamela Youde Nethersole Eastern Hospital
(June 2017 Respiratory Medicine Exit Assessment Exercise)

Background Persistent air leak is an important complication of pneumothorax but risk factors of this phenomenon have not been determined.

Objectives To evaluate the prevalence of persistent air leak in patients with secondary pneumothorax (spontaneous or iatrogenic) and its risk factors, and to review the literature on the subject.

Method A retrospective study was performed in a Hong Kong regional hospital on patients with secondary spontaneous or iatrogenic pneumothorax treated with chest drain from 2009 to 2016. The prevalence of persistent air leak was evaluated. Clinical characteristics, underlying lung condition and clinical outcome of patients with and without persistent air leak were compared. Multiple logistic regression method was used to evaluate the risk factors of persistent air leak.

Results A total of 203 patients with pneumothorax treated with chest drain were analyzed, of whom 139 (68.5%) suffered from secondary spontaneous pneumothorax and 64 (31.5%) from secondary iatrogenic pneumothorax. The prevalence of persistent air leak was 73.4% (more than 2 days), 36.5% (more than 7 days) and 17.7% (more than 14 days). Half of the patients had air leak lasting beyond three days and 39% had air leak beyond five days. Multiple logistic regression showed that initial pneumothorax size measured by Collin's method was independently associated with persistent air leak for more than 2 days (P value: <0.001) and 7 days (P value: 0.006) while bulla was associated with persistent air leak for more than 7 days (P value: 0.043). CT-guided FNA (in iatrogenic pneumothorax) and albumin level were negatively associated with persistent leak. The duration of hospitalization was significantly longer in the persistent air leak group but there was no significant difference in all-cause mortality.

Conclusion Large initial pneumothorax size and presence of bulla are independently associated with persistent air leak of more than 2 days and 7 days in secondary spontaneous pneumothorax and iatrogenic pneumothorax not including those occurring after thoracic surgery. CT-guided FNA and high albumin level are protective factors against persistent air leak.

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A RETROSPECTIVE STUDY ON AMIODARONE PULMONARY TOXICITY IN CHINESE PATIENTS IN HONG KONG

Dr Kwok Wang Chun, Department of Medicine, Queen Mary Hospital (June 2017 Respiratory Medicine Exit Assessment Exercise)

Introduction Amiodarone is one of the most commonly used anti-arrhythmic agents in atrial and ventricular arrhythmias. Amiodarone pulmonary toxicity is a potentially fatal adverse effect associated with amiodarone use. Previous studies on the epidemiology and risk factors for amiodarone pulmonary toxicity showed diverse results.

Objectives To identify clinico-epidemiologic markers associated with amiodarone pulmonary toxicity in a cohort with defined amiodarone exposure.

Methods List of patients taking amiodarone who were managed in Queen Mary Hospital and Grantham Hospital from 2005 to 2015 was retrieved. Those who fulfilled the inclusion criteria were obtained and analyzed on the risk factors associated with amiodarone pulmonary toxicity.

Results A total of 25 cases with amiodarone pulmonary toxicity were identified among 1113 patients taking amiodarone for at least 90 days from 2005 to 2015. The incidence of amiodarone pulmonary toxicity was estimated to be 2.2% The risk factors for amiodarone pulmonary toxicity included increase in age (OR 1.044, 95% CI 1.008 - 1.082, p = 0.016), ventricular arrhythmia (OR 2.757, 95% CI 1.262 – 6.024, p = 0.011), underlying lung disease (OR 3.885, 95% CI 1.584 – 9.528, p = 0.003) and cumulative dose of amiodarone (OR 5.457, 95% CI 1.515 – 19.660 p = 0.009).

Conclusion The incidence of amiodarone pulmonary toxicity in Chinese patients in Hong Kong is estimated to be 2.2% in this study. Age, ventricular arrhythmia, underlying lung disease, and cumulative dose of amiodarone are associated with the development of amiodarone pulmonary toxicity. It is worth conducting a prospective clinical study in future to validate the findings observed in this study.

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THE EVALUATION OF THE ADDITIONAL USE OF BLOOD CULTURE BOTTLE TO THE CULTURE OF PLEURAL FLUID IN PLEURAL INFECTION

Dr Yung Ching Ching, Department of Medicine, Haven of Hope Hospital ((June 2017 Respiratory Medicine Exit Assessment Exercise)

Background and objectives Pleural infection was a major cause of morbidity, hospital admissions and even death. The bacteriology of pleural infection was complex and was continuously changing over time. It was important to identify the causative organisms for guiding treatment. The yield of bacterial culture of pleural fluid was suboptimal using conventional laboratory methods. Some had advocated the use of blood culture bottle that gave an additional yield, supported by the recent study in the United Kingdom which showed an extra yield of 20.8%. The primary objective of this study was to investigate whether inoculating pleural fluid into a pair of blood culture bottles could increase the culture positivity of pleural infection in addition to the use of standard culture in our locality. The secondary objective was to review any change of antibiotic(s) after the identification of causative microbes in pleural fluid.

Study Design and Method A prospective study was conducted on 45 patients with pleural infection at the United Christian Hospital and at the Haven of Hope Hospital in HKSAR, between July 2015 and February 2017. Pleural fluid was inoculated into a pair of blood culture bottles in addition to the use of standard culture. Nine patients were recruited as controls to exclude false positive results.

Results The positive growth rate from the use of standard culture was 15/45 (33.3%). The positive growth rate from the use of either standard culture or blood culture bottle was 19/45 (42.2%). An extra yield of 9% was obtained by the additional pair of blood culture bottle medium. (McNemar's test p=0.125) Among 19 patients with positive pleural fluid culture, 11 patients (57.9%) switched their antibiotics according to the bacterial antibiotic sensitivities.

Conclusion In this study, the additional use of blood culture bottle medium identified more positive culture in pleural infection. However, the approach failed to achieve statistical significance. More than half of patients with positive pleural fluid culture switched their antibiotics according to the bacterial antibiotic sensitivities.

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A STUDY ON THE FACTORS ASSOCIATED WITH RENAL OUTCOMES IN AN INCEPTION COHORT OF BIOPSY-PROVEN LUPUS NEPHRITIS PATIENTS

Dr Ho Tsz Chung, Department of Medicine, Queen Elizabeth Hospital (June 2017 Rheumatology Exit Assessment Exercise)

Background Lupus nephritis causes significant morbidity and mortality in patients with systemic lupus erythematosus, which is commoner in Asian population comparing with Western population1. Identification of the factors associated with remission may help to improve the management and outcome of lupus nephritis and SLE as a whole.

Objectives To study the clinical characteristics, outcome and prognostic factors of biopsy-proven lupus nephritis in a tertiary referral centre.

Methods A total of 115 patients with biopsy-proven lupus nephritis diagnosed between January 2002 and June 2015 were included in this study. Baseline demographics, clinical parameters, histological features of renal biopsy, induction and maintenance immunosuppressive therapies, primary outcome (complete renal response, defined as proteinuria less than 0.5g/day with stable or improved serum creatinine; partial renal response, defined as decrease in proteinuria greater than or equal to 50% but remained in the range of 0.5 to 3g/day, with stable or improved serum creatinine), secondary outcomes (creatinine doubling, end-stage renal failure, renal flares, infections) were reviewed and analyzed. Renal Survival was analyzed by Kaplan-Meier method. Factors associated with primary and secondary outcomes were determined by univariate and multivariate analysis.

Results The mean age of patients at their first renal biopsy was 38 years old. All patients were Chinese except two Filipinos. The majority suffered from class IV and class IV+V lupus nephritis. The median duration of follow-up was 104 months post-biopsy. During the study period from January 2002 to February 2017, 89.6% of all patients reached complete renal response and 93.0% partial or complete renal response. Among those who achieved renal response, 49.5% experienced at least one renal flare. Their first renal flare occurred at the median time of 37.5 months after biopsy (29.3months after attaining renal response). The presence of nephrotic syndrome and the delay of renal biopsy two months or more from the onset of lupus nephritis were negatively associated with complete renal response. Use of hydroxychloroquine was shown to be beneficial in attaining renal response (p=0.02) and preventing renal flare (p=0.01).

By the end of study period, 80% of patients remained in complete or partial renal response and 28.7% of all patients experienced at least one episode of infection requiring hospitalization. Despite the high rate of renal response, twelve patients (10.4%) suffered from end-stage renal disease and ten patients (8.7%) died in our cohort. All patients with end-stage renal disease had class IV lupus nephritis. The presence of end-stage renal disease was associated with increased mortality.

Conclusion Although the majority of patients could attain complete renal response, renal flare was common. Progression into end-stage kidney disease was highly predictive of

mortality. Infection was a common morbidity and a major cause of mortality

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CORRELATION BETWEEN CAPILLAROSCOPIC ABNORMALITIES AND ORGAN DAMAGE IN CHINESE PATIENTS WITH SYSTEMIC SCLEROSIS

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Objective To correlate capillaroscopic abnormalities and the severity of organ damage in Chinese patients with systemic sclerosis (SSc).

Methods Patients who fulfilled the ACR/ EULAR 2013 criteria for SSc were recruited. Physical examination, blood tests for autoantibodies, pulmonary function test and echocardiogram were performed for the participants. Severity of skin involvement was assessed by the modified Rodnan Skin Score (mRSS). Organ damage was assessed by Medsger Disease Severity Scale. Nailfold capillaroscopy was performed by trained nurses blinded to the medical history of patients. Capillaroscopic patterns (early, active and late), capillary parameters (enlarged capillaries, giant capillaries, capillary haemorrhages, capillary density, disorganization of vascular array and capillary ramification) and Microangiopathy Evolution Score (MES) (sum of capillary density, disorganization of vascular array and capillary ramification) were obtained. Correlation between capillaroscopic patterns, capillary parameters and MES score with organ damage was studied by statistical tests.

Results 138 SSc patients were studied (91.3% women; age 57 years (interquartile range (IQR) 49-64). All were ethnic Chinese. The median disease duration was 8 years (IQR 3-12.3 years). There were 98 patients (71%) and 40 patients (29%) suffering from lcSSc and dcSSc respectively. 27 (19.7%) patients had early capillaroscopic pattern, 40 (29.2%) had active and 68 (49.6%) had late pattern. SSc patients with late capillaroscopic pattern suffered from significant general organ system (p=0.03), peripheral vascular system (p=0.02) and lung (p=0.03) damage. Reduction of capillary density correlated significantly with damage of peripheral vascular system (r=0.45P<0.001), skin (r=0.36p<0.001), joint and tendon (r=0.2p=0.02), muscle (r=0.3p<0.01), gastrointestinal tract (r=0.2p=0.02), and lung (r=0.24p=0.01). Capillary density also correlated inversely with mRSS (r=0.36p<0.001), number of digital scars (r=0.33p<0.001) and number of digital ulcers (r=0.34p<0.001). Higher MES score correlated significantly with muscle (r=0.19p=0.03), gastrointestinal tract (r=0.17p=0.048) and lung (r=0.27P<0.01) damage.

Conclusions Capillaroscopic patterns, capillary parameters and MES score correlated with severity of damage in individual organ in Chinese patients with SSc.

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