Abstracts of Dissertations
Dec 2019 Exit Assessment Exercise

PREDICTORS OF OUTCOME AND MANAGEMENT OF ACUTE PULMONARY EMBOLISM –A SINGLE CENTREEXPERIENCE

Dr Cheung Yat Yu, Department of Medicine & Geriatrics, Princess Margaret Hospital (Dec 2019 Cardiology Exit Assessment Exercise)

Background   Pulmonary embolism (PE) is uncommon but potentially lethal. In view of recent advances in management and scarcity of local data, this study aims to identify the in-patient mortality and predictors of outcome of PE in Hong Kong.

Methods   This is a retrospective chart review of patients with acute PE diagnosed from July 2015 to June 2018 in Princess Margaret Hospital, Hong Kong. Clinical data were retrieved for analysis.

Results   290 patients were included in the study. The high-risk-PE group included fewer ever smokers (11.1% vs 32.2%, $p = 0.009$), but more patients with recent fracture of lower limbs (17.9% vs 4.4%, $p = 0.005$) and immobilisation (66.7% vs 40.6%, $p = 0.002$). The inpatient mortality was 20.7%, which was related to high-risk PE (OR 3.66, $p = 0.008$), ever-smoking status(OR 2.87, $p = 0.005$), leukocytosis(OR 1.08, $p = 0.007$), and use of anticoagulation (OR 0.20, $p = 0.014$).The overall major bleeding complication rate was 24.5%. Diabetes mellitus (HR 1.54, $p = 0.027$), active malignancy (HR 3.55, $p <0.001$), dyspnoea(HR 1.87, $p = 0.001$),leukocytosis (HR 1.03, $p = 0.046$), and recent surgery (HR 0.32, $p < 0.001$)were independent predictors of all-cause mortality.

Conclusion   In-patient mortality of PE and major bleeding complication rate were still high in our locality despite recent advances in management. Prevention of VTE in susceptible populations, i.e.,patients with recent lower limb fractures or immobilisation, risk stratification, and prompt treatment with anticoagulation, were essential to decrease mortality of PE.

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UTILISATION OF THE SIMPLIFIED PULMONARY EMBOLISM SEVERITY INDEX IN PROGNOSTICATION OF PULMONARY EMBOLISM –
A RETROSPECTIVE STUDY IN A LOCOREGIONAL HOSPITAL IN HONG KONG

Dr Lau Ka Hung, Department of Medicine & Geriatrics, Caritas Medical Centre (Dec 2019 Cardiology Exit Assessment Exercise)

Introduction   Pulmonary embolism (PE) is the most severe form of venous thromboembolism (VTE) that can result in significant morbidity and mortality, especially if left untreated. Guidelines suggested the use of clinical scoring systems to stratify patients' risk of mortality, which helps to guide subsequent management strategy. Simplified pulmonary embolism severity index (sPESI) is a well-validated prognostic score that predicts the risk of short term mortality of PE and studies showed that low-risk PE patients could be safely

managed as outpatients. However, local studies on the use of prognostic scores including sPESI in management of PE are lacking.

Method This is a single-centre retrospective cohort study. All patients who were diagnosed with PE and admitted to Caritas Medical Centre between 1st January 2007 to 31st December 2017 were included. The ability of sPESI in predicting 30-day and in-hospital mortality of PE patients was assessed.

Result Totally 267 patients were included in the study, 48 of them had sPESI 0 while 219 had sPESI ≥ 1. SPESI ≥ 1 was associated with increased risk of 30-day mortality ($\chi2$ 7.076, p = 0.008) and in-hospital mortality ($\chi2$ 7.570, p = 0.006). Kaplan Meier analysis showed lower survival rates over 30 days among patients with sPESI ≥ 1.

Conclusion SPESI ≥1 predicted a higher risk of 30-day and in-hospital mortality among patients with acute PE.

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THROMBOCYTOPENIA AFTER TRANSFEMORAL TRANSCATHETER AORTIC VALVE IMPLANTATION

Dr Un Ka Chun, Department of Medicine, Queen Mary Hospital (Dec 2019 Cardiology Exit Assessment Exervise)

Objectives Thrombocytopenia is common after transcatheter aortic valve implantation (TAVI). This study aimed to evaluate the trend of thrombocytopenia, to compare with surgical aortic valve replacement (SAVR) and to look for possible predictors of thrombocytopenia and to correlate with clinical outcomes.

Methods and results Patients undergoing TAVI and SAVR in a single centre were studied. Total of 285 (119 for transfemoral TAVI, 166 for SAVR) patients were analyzed from databases. An early drop in platelet count occurred after TAVI and was overall similar to SAVR. The maximal percentage of reduction was 48.0 ± 15.3%. Most of the patient reached minimal value of platelet counts Day 2 to Day 4 post-operatively. 8.4% of TAVI patient reached severe thrombocytopenia of less than 50×10^9/L at any time point. Multivariate linear regression showed that age (B = -1.07, 95% CI -1.910 – -0.223, P = 0.014), sex (Male, B = 12.6, 95% CI 1.688 – 23.464, P = 0.024) and baseline platelet level (B = 0.488, 95% CI 0.407 – 0.569, P < 0.001) were predictors of minimal platelet count. Post-operative minimum platelet count and percentage drop were not associated with adverse outcome (P = 0.608 and P = 0.067 respectively). Only severe thrombocytopenia $< 50 \times 10^9$/L was shown to be associated with combined adverse outcome (OR 6.24, 95% CI 1.32 – 29.5, P = 0.021).

Conclusions Acquired thrombocytopenia after TAVI is a common phenomenon and its extent is similar to SAVR. Unless severe thrombocytopenia occurs, the platelet drop is often self-limiting and expectant management could be offered.

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SCREENING FOR ANXIETY AND DEPRESSION AMONG ADULT CHINESE PATIENTS WITH ATOPIC DERMATITIS ATTENDING GOVERNMENT DERMATOLOGY CLINICS IN HONG KONG

Dr Au Chi Sum, Department of Health (Dec 2019 Dermatology & Venerology Exit Assessment Exercise)

Background Evidence showed that patients with atopic dermatitis (AD) have higher risk of anxiety and depression. Currently local data in this aspect is lacking.

Objectives To determine the prevalence of anxiety and depression in the local AD

patients. Study the mental health impact and investigate the associated factors of undiagnosed anxiety and depression.

Method   This was a multi-center cross-sectional survey conducted at the dermatology clinics of Department of Health of Hong Kong from Mar 2019 to May 2019. AD was defined by UK Working Party diagnostic criteria. The AD severity of eligible subjects was assessed by the recruiting physicians with SCORAD. Significant anxiety and depression were defined as having score $\geq$ 10 in Generalized Anxiety Disorder 7-Item Scale (GAD-7) and Patient Health Questionnaire Depression Scale (PHQ-9) respectively. Health-related quality of life (HRQoL) was determined by Dermatology Life Quality Index (DLQI).

Results   290 eligible subjects were recruited. The point prevalence of significant anxiety and depression were 22.5% and 24.9% respectively. The lifetime prevalence of significant anxiety and depression was 24.4% and 25.8% respectively. Among subjects without prior history of psychiatric illness, it was found that co-existing allergic conjunctivitis and onset age of AD were significantly associated with anxiety, while SCORAD score and onset age of AD were associated with depression. The degree of impairment of HRQoL as measured by DLQI was similar to previously reported findings.

Conclusion   The prevalence of both anxiety and depression were relatively high compared with international figures. Majority of the affected patients were previously undiagnosed. The associated 7 factors identified may help targeted screening of the high-risk groups.

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A CROSS-SECTIONAL STUDY ON THE RELATIONSHIP BETWEEN ENDOCERVICAL POLYMORPHONUCLEAR CELL COUNTS AND CHLAMYDIAL CERVICITIS IN FEMALE PATIENTS

Dr Lau Ngan Ming, Department of Health (Dec 2019 Dermatology & Venerology Exit Assessment Exercise)

Background   Chlamydial infection is one of the most prevalent sexually transmitted infections worldwide. Early identification and treatment can prevent complications and spread of the condition. The reliability of polymorphonuclear cell (PMN) counts from endocervical smear and the diagnosis of non-specific genital infection (NSGI) as a predictor of chlamydial cervicitis remains uncertain.

Objectives   To investigate the relationship between endocervical PMN counts, NSGI and chlamydial cervicitis. Furthermore, to identify risk factors and cervical signs associated with chlamydial cervicitis.

Methods   The study was conducted in five female Social Hygiene Clinics from August 2018 to May 2019. Medical officer collected clinical information and performed speculum examination. Urethral and endocervical smears were examined for PMN counts under high power field. Chlamydial cervicitis was diagnosed by nucleic acid amplification test.

Results   A total of 556 participants were recruited. After exclusion, statistical analysis was performed on 517 participants. Among them, 16.6% was diagnosed chlamydial cervicitis and 198 (38.3%) fulfilled the criteria of NSGI by endocervical swab. NSGI (OR 4.115; 95% CI 2.244-7.546; $p<0.001$), age $\leq$ 24 (OR 2.000; 95% CI 1.108-3.611; $p=0.022$), *Chlamydial trachomatis* (CT) contact (OR 66.417; 95% CI 18.541-237.912; $p<0.001$), cervical erythema and edema (OR 3.016; 95% CI 1.369-6.642; $p=0.006$) were independently associated with chlamydial cervicitis. The use of NSGI for the detection of chlamydial cervicitis had a positive predictive value (PPV) of 30.3%.

Conclusion   NSGI, young age, CT contact, cervical erythema and edema were independently associated with chlamydial cervicitis. With a low PPV, NSGI had limited

utility for prediction of chlamydial cervicitis in clinical setting.

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A STUDY ON THE EPIDEMIOLOGY AND QUALITY OF LIFE OF PATIENTS WITH MORPHEA ATTENDING THE SOCIAL HYGIENE SERVICE IN HONG KONG

Dr Wong Chi Kin, Department of Health (Dec 2019 Dermatology & Venerology Exit Assessment Exercise)

Introduction   Morphea or localized scleroderma is a rare sclerosing skin disease. It can occur at any sites but certain subtypes have site predilection. Generally patients present with asymptomatic pigmentary and textural changes over the skin without extracutaneous manifestations. Nevertheless, extracutaneous manifestations can occur especially in certain subtypes. Published studies showed that morphea has been associated with impairment in health related quality of life (HRQoL). In this case series, we described the epidemiological characteristics of morphea attending the Social Hygiene Service (SHS) and assessed the HRQoL in morphea patients.

Method   Cases clinically and histologically compatible with morphea were recruited for study from September 2018 to June 2019. Their epidemiological and clinical features were described. The self-reported HRQoL of each case will be assessed through the 36-item short form health survey (SF-36) by completion of questionnaire. SF-36 scores will be compared with literate values and univariate analysis will be performed to look for factors associated with lower SF-36 scores.

Result   Forty-one cases were enrolled into study. Majority (97.6%) were of adult onset, predominantly young to middle aged adulthood. Male to female ratio was 1:2.2. Majority of cases belonged to circumscribed type, followed by generalized type. 34% of cases had active disease 4 weeks prior to enrollment. 14.6% had extracutaneous manifestation. 19.5% had history of autoimmune diseases and antinuclear antibody positivity was found in 41% of cases. All SF-36 scores were lowered compared with normative value of population with 3 of the health domains achieved high statistical significance ($p<0.01$). Univariate analysis showed that lower SF-36 scores were associated with factors at high statistical significance, including non-circumscribed morphea, active diseases within the past 4 weeks prior to enrollment and, cases having 4 or more lesions.

Conclusion   This study described the clinical and epidemiological characteristics of orphea cases attending the Social Hygiene Service. The HRQoL of morphea was generally lower than the general population in Hong Kong. Factors associated with negative impact on HRQoL in morphea include non-circumscribed morphea, active disease in the past 4 weeks or cases having 4 or more lesions.

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A STUDY ON CLINICAL OUTCOMES OF RATHKE'S CLEFT CYST IN PATIENTS WITH OR WITHOUT SURGICAL TREATMENT

Dr Chong Gigi Yui Chi, Integrated Medical Service, Ruttonjee Hospital (Dec 2019 Endocrinology, Diabetes and Metabolism Exit Assessment Exercise)

Introduction   Rathke's cleft cyst (RCC) is a common sellar and/or suprasellar lesion. Increasing diagnosis due to improvement and increased use of imaging has been observed. Most cysts are asymptomatic, while some can cause symptoms and acute complications. Recurrence was noted after surgery. Local data on natural history and treatment of RCC is needed for guidance in the management of this lesion.

Objectives   The primary objective is to investigate the clinical presentation, hormonal dysfunction, imaging characteristics and natural history of RCCs that are managed either conservatively or surgically. Secondary objective is to try to identify factors associated with cyst progression and predictors for cyst recurrence after surgery.

Methods   A retrospective review of 105 patients with the diagnosis of RCC-identified from word search from radiology report from 3 hospitals on Hong Kong Island (Queen Mary Hospital, Pamela Youde Nethersole Eastern Hospital and Ruttonjee Hospital), that were followed up during the period January 1999 to March 2019 was performed. The demographics, clinical data, radiological features, surgical records, histology and outcomes were reviewed and analyzed.

Results   A total of 105 patients were recruited. The mean age at diagnosis was mean age at diagnosis was 49 ± 17 years. The female to male ratio was 1.8:1. Over a median follow-up of 6 years, 68 patients (65%) were managed conservatively while 37 patients (35%)underwent surgery. Incidental finding and headache were the most common presentations for conservative group and surgical group respectively. At presentation, 26%hadeither one or more axis hormonal dysfunction, with hypogonadism and hyperprolactinemia being the most common ones. Imaging features were variable with64.5% of patientshavingT2W hyperintensityin MRI. Pathognomonic feature of intracystic nodule was present in only 22.9%of patients. Comparing patients in surgical group(SC) with conservative group (CG), SC had a higher rate of endocrine dysfunction vs CG (38.9% vs 19.1%, p=0.029).Improvement in visual field defect was noted in 14patients (84.6%) and improvement of headache was noted in15patients(78.9%)after operation. 16 patients (43.2 %) developed one or more new pituitary dysfunction after surgery, with hypocortisolemia and diabetes insipidus being the most common dysfunction. Recurrence after surgery was noted in 60% of patients over a median follow-up of 6.9 years. Mean time of latency to radiologically detectable recurrence was 58 months. Predictors for the recurrence included age ≤ 50 years old at time of surgery (OR 9.54, p=0.025), residual cyst after surgery (OR 7.09,p=0.048) and headache at presentation(OR 7.09, p=0.048).

Among the patients who were managed conservatively at initial presentation, 32.1%of patients developed cyst progression (with increase in size > 2mm), 67.9%with either static or decrease in size of RCC, over a median follow up period of 4.5years.Median time to progression of cyst was 14 months. Only one patient developed new endocrine dysfunction. Initial cyst diameter larger than or equal to 10 mm was associated with higher rate of progression(p=0.01).

Conclusion   RCC is a benign disease, with 2/3 of patients having static or decrease in size of the cyst and rarely giving rise to additional endocrine dysfunction with time employing

observant approach. Surgery is a treatment option to alleviate visual field defect and headache but carries risks of new endocrine deficiencies. Conservative treatment remains a reasonable treatment for patients without symptoms or optic chiasma compression.

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EPIDEMIOLOGY, CLINICAL FEATURES, TREATMENT OUTCOME AND PROGNOSIS OF SPONTANEOUS BACTERIAL PERITONITIS IN A REGIONAL HOSPITAL OF HONG KONG

Dr Huang Hiu Fung, Department of Medicine, Pamela Youde Nethersole Eastern Hospital (Dec 19 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Spontaneous bacterial peritonitis (SBP) is common in cirrhotic patients with high in-hospital mortality. Recent studies from European countries suggested a changing microbiological pattern with increasing frequency of gram-positive and multi-drug resistance (MDR) organisms. However, the corresponding local epidemiological data is scarce.

Objective The primary objective was to study the epidemiology, clinical characteristics, microbiological profile, treatment outcome and prognosis of SBP in a regional hospital in Hong Kong. The secondary objective was to identify the predictive factors of in-hospital mortality in SBP patients.

Methods This is a retrospective study of hospitalised cirrhotic patients with SBP from 1st July 2008 to 30th June 2018 at Pamela Youde Nethersole Eastern Hospital.

Results A total of 116 episodes of SBP in 97 patients with Child-Pugh class B or C cirrhosis were identified. The median age was 66 with male predominance (1.9:1). Fever (44.3%) and abdominal pain (43.3%) were the two most common manifestations. There were positive cultures in 48 episodes (41.4%), mostly grew gram-negative organisms (75.0%). Escherichia coli was the commonest (31.3%) pathogen isolated while MDR organisms were identified in 27.5% of culture-positive episodes. Cefotaxime (55.7%) was the commonest initial antimicrobial therapy. Seventy percent of patients responded to cefotaxime and survived without need of antibiotic escalation. Acute kidney injury (AKI) was the commonest complication (40.2%), followed by hepatic encephalopathy (23.7%). In-hospital mortality rate was 29.9%, mostly liver-related (86.2%). Of 68 patients who survived the first episode of SBP, 14 (20.6%) had recurrence. Estimated survival at 1 year was 33%. A positive blood or ascitic fluid culture (OR=4.0, 95%CI 1.1-15.0, p=0.037), development of AKI (OR=9.9, 95%CI 2.5-39.5, p=0.001) and hepatic encephalopathy (OR=11.4, 95%CI 2.7-47.9, p=0.001) were independent risk factors of in-hospital mortality.

Conclusions SBP was associated with high in-hospital mortality and poor prognosis. Gram-negative organisms were still the predominant causative pathogens but there was a considerable proportion of MDR organisms identified. Cefotaxime was moderately effective as initial antibiotic therapy. A positive blood or ascitic fluid culture, development of AKI and hepatic encephalopathy were predictors of in-hospital mortality.

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SAME DAY VERSUS SPLIT DOSE BOWEL PREPARATION USING PICOPREP® FOR AFTERNOON COLONOSCOPY - AN ENDOSCOPIST BLINDED PROSPECTIVE STUDY

Dr Fung Kok Leung, Department of Medicine & Geriatrics, United Christian Hospital (Dec 19 Gastroenterology & Hepatology Exit Assessment Exercise)

Objective To study efficacy, safety and tolerability of same day bowel preparation

using Picoprep® versus standard split dose regime in the local population.

Methods This is a prospective, randomized, endoscopist blinded non-inferiority study conducted in United Christian Hospital comparing standard split dose Picoprep® and same day Picoprep® for afternoon colonoscopy. Patients with indication for colonoscopy were randomized to conventional split dose group and the new same day group. Bowel cleansing quality was assessed by BBPS. Adverse events were recorded and blood tests were done to exclude electrolyte disturbances.

Results The rate of adequate bowel preparation in same day group is 78.9% while that of split dose group was also 77.9 %. Lower limit of confidence interval for the difference in proportion is -7.9%. Non-inferiority can be established. Rate of symptomatic adverse events were higher in the split dose group but could not reach statistical significance except for proctalgia. Same day bowel preparation carried a significant higher risk of hyponatraemia that can be severe.

Conclusion Same day bowel preparation is non-inferior to split dose regime in terms of bowel cleansing. However, it was associated with a significant higher risk of hyponatraemia. The use of Picoprep® in same day bowel preparation could be considered as an alternative to the split dose regime, but only with close monitoring of the electrolytes level.

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A STUDY ON THE ASSOCIATION OF NON-ALCOHOLIC FATTY LIVER DISEASE AND CHRONIC KIDNEY DISEASE: A CROSS-SECTIONAL STUDY IN A LOCAL REGIONAL HOSPITAL
Dr Wong Oi Yee Kitty, Department of Medicine & Geriatrics, Kwong Wah Hospital (Dec 19 Gastroenterology & Hepatology Exit Assessment Exercise)

Background There is growing evidence suggesting an association between chronic kidney disease (ckd) and non-alcoholic fatty liver disease (nafld). The aim of this study is to Investigate the prevalence of significant liver fibrosis and nafld in ckd patients and The associated risk factors.

Methods Subjects were recruited from the medical out-patient clinic by random selection in Kwong wah hospital. Each ckd patient was paired with a sex and age matched Non-ckd patient. Past medical history was recorded. Anthropometric and Biochemical assessment were done. Liver steatosis and fibrosis were assessed by Ultrasound and transient elastography respectively.

Results The prevalence of significant liver fibrosis in ckd patients was significantly higher Than that in non-ckd patients. (17.9% vs 6%, [p=0.033]). The presence of ckd And raised ast were independent factors associated with significant liver fibrosis. The prevalence of nafld in ckd and non-ckd patients was 25.4% and 38.8% Respectively, with no significant difference between the two groups. The presence of Metabolic syndrome, dm, raised alt and low hdl were independent factors Associated with nafld. The mean nafld fibrosis score for those with nafld In ckd patients was significantly higher than that in non-ckd patients (-0.35

vs -1.70, [p=0.008]).

Conclusion   A high prevalence of significant liver fibrosis was found in ckd patients with almost 1 In 5 ckd patients had significant liver fibrosis. Nafld was found in over a quarter of The ckd patient in the setting of outpatient medical clinic.

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ASSESSMENT OF HIP FRACTURE OUTCOMES IN LOCAL GERIATRIC POPULATION BY THE CLINICAL FRAILTY SCALE

Dr Chan Hoi Kei Iki, Department of Medicine & Geriatrics, United Christian Hospital (Nov 2019 Geriatric Medicine Exit Assessment Exercise)

Introduction   Frailty assessment is important in geriatric care. This study aimed to evaluate the correlation between the Clinical Frailty Scale (CFS) and 1-year mortality, discharge destinations, length of stay, and institutionalization at 1-year in elderly patients with hip fracture.

Methods   This was a retrospective cohort study conducted in United Christian Hospital. From 1st January 2014 to 31st January 2015, 731 patients aged 60 or above admitted for hip fracture were recruited. CFS was recorded based on patients' premorbid status. Chi-square tests were used for categorical variables whereas ANOVA tests were used for scale variables. Multivariate analysis with Cox regression model was used for the analysis on 1-year mortality; and multivariate analysis with logistic regression model was used for the analysis on institutionalization at 1-year.

Results   1-year mortality was 14.4% in the non-frail group (CFS 1-4), 24.6% in the mild-to-moderately frail group (CFS 5-6), and 43.2% in the severely frail group (CFS 7 or above). With the non-frail group as reference, hazard ratios were 1.552 (95% CI=1.071-2.248, p=.020) and 3.157 (95% CI=1.820-5.478, p<.001) when compared with the mild-to-moderately frail group and severely frail group, respectively. Patients in the non-frail group were less likely to be newly institutionalized on discharge compared with the mild-to-moderately frail group (p<.001). No statistical significance could be found regarding the relationship between CFS and length of stay as well as institutionalization at 1-year.

Conclusion   Frailty assessed by CFS correlated with 1-year mortality and institutionalization on discharge in local geriatric hip fracture patients.

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EFFECT OF FRAILTY ON REHABILITATION OUTCOME - A LOCAL DAY REHABILITATION HOSPITAL EXPERIENCE

Dr Wong So Yi, Department of Medicine & Geriatrics, Tung Wah Eastern Hospital (Nov 2019 Geriatric Medicine Exit Assessment Exercise)

Background and objective   Frailty is of up-coming importance in geriatric medicine. It helps us to predict patient outcome. Therefore maintaining or improving elderly's frailty status would be important. It may in turn improve outcomes and quality of life. In this study, we would try to evaluate whether our day rehabilitation center could improve frailty and therefore improve outcomes.

Methods and Results   This is a prospective cohort study. 142 subjects were recruited for the study during Nov 2018 to Mar 2019. With 23 default cases, improvements after rehabilitation and 3 months readmission and mortality were assessed. We found that subjects whose premorbid was robust or mildly frail (with Clinical Frailty Scale, CFS less than or equal to 4) improved more after rehabilitation. Also, patient referred from orthopaedic surgeon usually had better premorbid CFS and they improved more after rehabilitation. Nevertheless, all groups showed significant deterioration in CFS compared to their premorbid. This study failed to show any difference in mortality and readmission rate among different groups.

Conclusion   All groups improved after rehabilitation. Subjects with better premorbid physical health and orthopaedic patients improved more after rehabilitation. This study failed to show any difference on readmission and mortality among difference group due to its small sample size.

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A RETROSPECTIVE REVIEW INVESTIGATING THE USE OF AGE-COMBINED CHARLSON COMORBIDITY INDEX (ACCI) AS A PREDICTOR OF RETURN-OF-SPONTANEOUS-CIRCULATION (ROSC) AND SURVIVAL-TO-DISCHARGE IN GERIATRIC PATIENTS UNDERGOING CARDIOPULMONARY RESUSCITATION (CPR) IN A REGIONAL ACUTE HOSPITAL

Dr Zhu Yi Dan, Department of Medicine, Haven of Hope Hospital (Nov 2019 Geriatric Medicine Exit Assessment Exercise)

Background and Objectives   Age alone is not a single determining factor for the resuscitation decision in geriatric patients. ACCI takes both weighting of age and comorbidities into account. The objective of this review was to investigate the impact of ACCI and other premorbid factors in predicting outcome of CPR in local geriatric patients.

Method   A retrospective review was conducted on all patients aged 65 or older, who underwent CPR in acute medical wards (excluding ICU) in a regional acute hospital from 1/1/2017 to 31/12/2018. The baseline characteristics, CCI and the resuscitation details were assessed. Their relationship with sustained ROSC and survival-to-discharge were studied as follows: categorical variables with Chi-squared test or Fisher's exact test and continuous variables with t-test if normally distributed and Mann-Whitney U test if non-parametric.

Results   394 patients with 262 males and 132 females were included. The mean age is 82.06 ± 8.11 years. ACCI did not significantly predict ROSC. The mean ACCI for patients who survived to discharge and who deceased were 6.71 ± 2.37 and 8.32 ± 2.43 respectively ($p = 0.028$). Survival-to-discharge rate for ACCI 0-5 group, ACCI 6-8 group and ACCI >=9 group were 8.9%, 3.4%, and 2.3% respectively. Similarly, increased CCI score also

significantly predicted mortality. Shockable rhythm was significantly associated with survival-to-discharge. The prognostic value for CCI/ACCI persisted after subgrouping for non-shockable rhythms. Post-operative (within 30 days) was a favourable factor for survival-to-discharge.

Conclusion   Both CCI and ACCI showed usefulness in prognostication of CPR outcome. Age alone is not a prognostic indicator.

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RETROSPECTIVE STUDY ON CLINICAL CHARACTERISTICS AND OUTCOMES OF AUTOIMMUNE HEMOLYTIC ANEMIA IN ADULTS IN A SINGLE CENTER IN HONG KONG

Dr Lam Ching Pong, Department of Medicine, Queen Elizabeth Hospital (Nov 2019 Haematology & Haematological Oncology Exit Assessment Exercise)

Background   Autoimmune hemolytic anemia (AIHA) is an uncommon hematological disease characterized by autoimmune mediated destruction of red blood cells. There are limited number of studies regarding this condition and this study aims to assess the clinical characteristics and outcomes in a center in Hong Kong.

Patients and methods   We retrospectively reviewed 68 patients diagnosed with AIHA from January, 2008 to December, 2017 in Queen Elizabeth Hospital. We analyzed the clinical characteristics, response to first line steroids and outcome.

Results   Among 68 patients, 60.3% have primary AIHA and 39.7% have secondary AIHA. 69.1% have warm type AIHA whereas 27.9% had cold type AIHA. Secondary AIHA occurred more commonly in a younger age group of <65 year (48.1%) as compared with primary AIHA (24.4%). Primary cold agglutinin disease is more commonly associated with reticulocytopenia (44.4% vs. 6.7%) and paraproteinemia (75% vs. 22.7%) than primary warm AIHA. Among those who received frontline corticosteroids, overall responses are 96.9% and 33.3% for primary warm AIHA and cold agglutinin disease respectively. Median duration of steroids was 6.8 months and 69% relapsed with a median time to next treatment of 8 months for primary warm AIHA. Nearly half of the patients with primary AIHA had grade 3 or above infections with none had venous thrombosis occurred. At the time of analysis, after a mean follow up of 36.4 months, 42.6% had died.

Conclusion   AIHA is a heterogeneous disease that carries significant morbidity and mortality and requires experienced attention by clinicians. Most patients with primary warm AIHA responded to frontline corticosteroids but also have a relapse rate.

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TREATMENT OF RELAPSED/REFRACTORY MULTIPLE MYELOMA WITH IXAZOMIB AND DARATUMUMAB, THE REAL-LIFE EXPERIENCE FROM A REGIONAL HOSPITAL

Dr Li Ka Shu Justin, Department of Medicine & Geriatrics, Tuen Mun Hospital (Nov 2019 Haematology & Haematological Oncology Exit Assessment Exercise)

Abstract   There has been a robust development in the management of multiple myeloma (MM), both in the frontline and relapse setting, with many new therapeutic agents and treatment regimens being approved for clinical use in the past decade. This has led to a dramatic improvement in the prognosis and overall survival (OS) for these patients [1-3], especially for those suffering from relapsed/refractory disease whose prognosis has historically been dismal. However, despite such advances, the disease remains incurable for most patients and a vast majority will experience multiple relapses even after achieving a complete response (CR) from the disease. In addition, due to the acquisition of additional genetic mutation and emergence of resistant clones, the disease becomes more resistant with each relapse, resulting in progressively shorter duration of response with each subsequent line

of salvage treatment used [4]. The management of relapsed or refractory multiple myeloma (RRMM) has therefore become a crucial part in the overall care for patients with MM and has been one of the main focuses in ongoing clinical research.

Novel therapeutic agents that have been recently approved for use in treatment of RRMM includes second generation proteasome inhibitors (PIs) e.g. Carfilzomib and Ixazomib; second generation immunomodulatory agents (IMiDs) e.g. Pomalidomide; monoclonal antibodies (MAbs) e.g. Daratumumab and Elotuzumab; histone deacetylase inhibitor e.g. Panobinostat; and most recently, selective inhibitor of nuclear export i.e. Selinexor. They have each been shown in various clinical trials to demonstrate significant clinical activity when used in combination and result in improvements in patient's progression free survival (PFS). The ideal sequence of treatment, however, has not been established as there are currently no direct head-to-head comparison between different combinations and comparison between various trial results are difficult to interpret due to differences in study designs, patient populations and control arms. The choice of treatment is therefore determined by various factors such as patient's comorbidities, nature of relapse, presence of high-risk cytogenetic abnormalities, previous treatment used and its response or refractoriness

Despite the seemingly abundant novel therapeutic options, a significant proportion of patients around the world today may still have no access or are unable to afford using combinations of such novel treatments due to the enormous drug costs and financial difficulties [5]. In Hong Kong, for instance, one of the major reasons that hinder the use of novel therapeutic agents in patients treated in the public sector is financial concern. This is because only a few of these agents are being covered by the safety net provided by the government and not every patient could afford paying for them as self-financed items. With the help of drug company compassionate programs and funding by charitable/non-charitable organizations, the usages of these novel therapeutic agents have been increasing but the experience are still quite limited.

Since these novel agents are still relatively new to use in the local clinical setting, it would be of interest to review the local experience of using these novel therapeutic agents and evaluate their efficacy and safety profile. This dissertation therefore aims to retrospectively review the use of novel therapeutic agents in treatment of RRMM from a regional hospital's experience, focusing mainly on Ixazomib and Daratumumab, which are the two most used novel therapeutic agents in Tuen Mun hospital (TMH). The responses, survival outcome and side effect profile would be analyzed and compared with current literature.

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SYSTEMIC THERAPY TREATMENT OUTCOMES FOR RECURRENT HEPATOCELLULAR CARCINOMAS FOLLOWING LIVER TRANSPLANTS IN HONG KONG
Dr Li Cho Wing, Department of Medicine, Queen Mary Hospital (Dec 2019 Medical Oncology Exit Assessment Exercise)

Background   Liver transplant offers a potential cure for patients with early hepatocellular carcinoma ("HCC"). However, when HCC recurs following liver transplant, the clinical outcome is poor. Recurrences are treated with surgical resection until they are no longer resectable or if disseminated recurrences occur. The use of systemic therapies in this clinical contest is complex because of the organ transplant and immunosuppressive environment, together with potential complex drug interactions between the immunosuppressants and anti-cancer therapies.

Sorafenib was the main treatment of choice before the availability of more options in . All the clinical trials of systemic therapies for advanced HCC excluded patients with any history of organ transplant. There is unlikely to be a prospective clinical trial dedicated in this rare but important clinical setting. The safety and efficacy of the application of systemic medical

therapies in this clinical setting is therefore largely unknown. Hence, retrospective data on real life clinical settings is needed to inform best practices.

Queen Mary Hospital is the only liver transplant centre in the public sector of Hong Kong. We aim to review our clinical experience in this setting and describe the clinical outcomes of Hong Kong Chinese patients with recurrent unresectable hepatocellular carcinoma following liver transplant, treated with systemic medical therapies.

Methodology This paper is a retrospective cross-sectional study of consecutive adult patients with recurrence of HCC following liver transplant for the indication of treatment of HCC in Queen Mary Hospital from January 2005 to January 2018. Demographic data and baseline characteristics were described. The primary outcome of overall survival of the whole population and those treated with sorafenib or other systemic therapies were described. Secondary outcome of adverse events and tolerability of sorafenib were described.

Result Forty three consecutive patients with a recurrence of HCC following liver transplantationtransplant were identified from 2005 to 2018. Among this population (N= 43) the median survival from diagnosis of recurrence was 17 months (CI 11.3, 22.7). Univariate analysis shows that early recurrence within 12 months of transplant was associated with a significantly worse median survival of 10 months CI 8.5, 11.4) compared to 26 months (CI 18.8, 33.2) when recurrences occurred after 12 months from transplant (p< 0.001) [Figure 1] Among those who had sorafenib as the first systemic therapy (N= 34), median survival from recurrence was 14 months (CI 7.3, 20.7).

Conclusion Treatment efficacy and adverse events and tolerability of sorafenib were comparable with those in the setting of advanced HCC without transplant. The overall survival of patients with HCC recurrence following liver transplant was poor, despite treatment with sorefenib. Early recurrence within one year from transplant was the most significant risk factor of poor survival.

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A RETROSPECTIVE OBSERVATIONAL STUDY ON CLINICAL OUTCOMES IN PATIENT ON CONTINUOUS AMBULATORY PERITONEAL DIALYSIS IN CHINESE POPULATION

Dr Ip Tsz Hung, Department of Medicine, Tseung Kwan O Hospital (Dec 2019 Nephrology Exit Assessment Exercise)

Abstract Peritonitis is a major problem in patients treated with continuous ambulatory peritoneal dialysis (CAPD). It is the major cause of mortality and morbidity and also the cause of failure of peritoneal dialysis treatment. Two different dialysis systems are available in Hong Kong for CAPD, namely the Staysafe Balance (SSB) system from the Fresenius Medical Care and Ultrabag (UB) system from the Baxter. But there are scanty evidences comparing the two systems. The aim of this retrospective observational study is to compare the clinical outcomes between the two systems. 419 incident patients starting CAPD (101 in the SSB group and 318 in the UB group) between the periods of 1st January 2010 to 31, December 2017 were included and they were all followed up until 31st December 2018. The primary outcome was peritonitis rate in terms of number of episodes per patient months in the first two years and peritonitis free survival during the follow-up period. There were no significant differences between the two group in the

peritonitis rate, which were 27.78 patient-months per episode in the SSB group and 33.62 patient-months per episode in the UB group (p=0.143). The hazard ratio for peritonitis free survival for the SSB groups after multivariate analysis was 1.25 (0.95-1.63) (p=0.11) which was also not significant. The secondary outcomes including the rate of decline in residual renal function within 2 years of starting CAPD, number of hospitalization within first year, technique survival rate and mortality rate also did not show any significant differences. In conclusion, this trial does not show any superior clinical outcomes in patients using either the UB or SSB system for CAPD.

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LUPUS NEPHRITIS IN CHINESE PATIENTS – SURVIVAL, ORGAN DAMAGE AND PROGNOSTIC DETERMINANTS

Dr Sin Chi Shan Rutherford, Department of Medicine, Tuen Mun Hospital (Dec 2019 Nephrology Exit Assessment Exercise)

Background   Lupus Nephritis (LN) is associated with significant morbidity and mortality in SLE patients. Asian patients are at increased risk of developing LN but data on their clinical course and outcome are lacking. The Systemic Lupus International Collaborating Clinics / American College of Rheumatology (SLICC / ACR) Damage Index (SDI) is a validated tool to quantify organ damage and aid in predicting prognosis. However, few studies have utilized it in an Asian context.

Objective   This study evaluates the risk of death and renal failure in Chinese LN patients. The risk factors for failure and clinical value of SDI are examined.

Methods   The records of LN patients followed in a single centre during 1996 – 2013 are reviewed in detail. The patient survival and renal survival are analyzed by Kaplen-Meier's method.   Clinicopathological characteristics, baseline SDI score, induction outcome and relapses are incorporated into a Cox regression model.

Results   Two hundred and seventy-three LN patients (predominantly Class III or IV LN with or without membranous features) are included.   The mean duration of follow up is 11.8 +/- 5.4 years. The 5, 10, 20-year patient survival are 92.7%, 89.7% and 76.8% espectively. The major causes of death are infection, malignancy and lupus activity. The 5, 10, 20-year renal survival rate are 89.4%, 85.1% and 72.8% respectively. Female sex, younger age, complete remission and preserved baseline renal function are associated with better renal outcome. Patients with SLICC / ACR damage index larger than 0 upon LN diagnosis has worse overall and renal survival.

Conclusion   The morbidity and mortality of LN patients remain high. The SLICC / ACR damage index can be a useful adjunct to clinical parameters to predict outcome.

MYOFIBRILLAR MYOPATHY 5: CLINICAL, MORPHOLOGICAL AND GENETIC STUDIES OF A COHORT OF HONG KONG CHINESE PATIENTS WITH NOVEL PATHOGENIC FLNC NONSENSE MUTATION

Dr Gao Yuan, Department of Medicine, Queen Mary Hospital (Nov 2019 Neurology Exit Assessment Exercise)

Abstract Myofibrillar myopathy type 5 (MFM5) is a rare autosomal dominant genetic myopathy caused by mutation of FLNC gene encoding filamin-C, one of the Z-disk associated proteins, that helps in maintaining myofibril assembly, remodeling and maintenance. The clinical manifestation of MFM5 varies corresponding to the difference of FLNC mutation types and locations. Although myofibrillar myopathy can be characteristically recognized by muscle histopathological analyses, the precise molecular etiology cannot be readily discerned without genetic testing. Although series of myofibrillar myopathy cohorts have been reported in American , German, Italian and French populations, no Chinese population cohort data is currently available. In this study, we identified a cohort of Hong Kong Chinese MFM5 patients with genetic confirmation of a novel FLNC heterozygous c.8129G>A (p.Trp2710Ter) nonsense pathogenic mutation. Clinical, radiological, histopathological and genetic studies of these symptomatic MFM5 patients were conducted across different generations within these families. Comparison was made with other reported Caucasian myofibrillar myopathy cohorts. In our study, majority of MFM5 patients had symptoms onset over 40 years old. Weakness of lower limb proximal muscles was firstly presented, and it progressed slowly to affect both distal and upper limb muscles. Large fiber axonal peripheral neuropathy, restrictive lung disease and cardiac dysfunction were observed concomitant manifestations in MFM5 patients. Although MFM5 exhibited heterogenous clinical manifestations even among affected members in the same family, its muscle magnetic resonance imaging (MRI) pattern was consistent and muscle biopsy histopathological findings were characteristic. The utilization of muscle ultrasound-MRI fusion muscle biopsy yielded high accuracy and reduced surgical complications. Genetic testing by next-generation sequencing (NGS) targeting myopathy-related genes detected a novel FLNC heterozygous c.8129G>A nonsense mutation in the exon 48 at dimerization domain of filamin- C, it formed a premature termination codon and resulted in mRNA translation termination and protein truncation. Recurrent presence of this FLNC nonsense mutation among different unrelated families implied its founder effect among Hong Kong Chinese populations. Understanding the clinical, morphological and genetic characteristics of MFM5 in Chinese populations helped in early recognition and diagnosis of the disease, understanding disease mechanisms and promoting exploration of potential therapeutics.

CROSS-SECTIONAL STUDY ON PREVALENCE OF ANXIETY AND ITS CORRELATES IN FAMILY CAREGIVERS OF PATIENTS WITH ADVANCED CANCER

Dr Chan Lut Ming, Department of Medicine, Haven of Hope Hospital (Dec 2019 Palliative Medicine Exit Assessment Exercise)

Objectives   To assess the prevalence of anxiety and to identify its correlates in family caregivers of patients with advanced cancer receiving palliative care.

Method   This is a prospective cross-sectional study of prevalence of anxiety in family caregivers of patients with advanced cancer admitted to the palliative care ward. The Generalized Anxiety Disorder seven-item scale (GAD-7) will be used as the screening instrument. Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ-9), Psychological Well-being Scale for Family Caregivers (PWS-C), Chinese version of the Modified Caregiver Strain Index (C-M-CSI); and patient's characteristics, caregiver's characteristics including physical and psychosocial status and their perception of patient's condition are assessed for correlation with caregiver's anxiety.

Results   Among 70 recruited family caregivers, 16 (22.9%) were screened positive for anxiety by GAD-7 ($\geq$10). No correlation was found between caregivers' anxiety with patients' demographics, past medical history, performance status and symptom severity. Being female, depression, poor social support, lower life meaning and higher emotional distress of PWS-C, overall caregiver's burden (C-M-CSI), feeling of anxiety towards patient's approaching death and perceived inadequate psychological support are associated with higher anxiety level. By multiple linear regression, PHQ-9 (Total), caregiver's feeling of anxiety towards patient's approaching death and caregiver sex are found to be significant predictors of GAD-7 total score.

Conclusions   One-fifth of family caregivers were screened to have anxiety. A structured screening of anxiety and its correlates in family caregivers should be considered in routine practice.

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INCIDENCE AND CLINICAL CHARACTERISTICS OF LATE-ONSET NONINFECTIOUS PULMONARY COMPLICATIONS (LONIPCS) FOLLOWING ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT (HSCT) IN HONG KONG.

Dr Chan Shung Kay Samuel, Department of Medicine, Queen Mary Hospital (Dec 2019 Respiratory Medicine Exit Assessment Exercise)

Abstract   Late onset non-infectious pulmonary complications (LONIPCs) are a recognized entity of disease that temper the survival of patients receiving allogeneic hematopoietic stem cell transplant (HSCT) with curative intent. This is a first territory-wide audit of LONIPCs in Hong Kong consisting of 240 consecutive patients that received allogeneic HSCT for the first time between 2011 and 2013. We have assessed their clinical features and identified risk factors. We observed a significantly higher 5-year overall survival of 59.3% comparing to 10-15% in the literature16. Chronic graft-versus-host disease of the skin (aHR 4.66; 95% CI 1.82 to11.9; p=0.001), and the decline in low mid-forced expiratory flow rate (FEF25-75) by day 100 (aHR 0.97; 95% CI 0.96 to 0.99; p<0.05) were the strongest predictors in our analysis; however the adequacy and sensitivity of lung function test as screening tool for early LONIPCs remain in question.

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