Abstracts of Dissertations
December 2016 Exit Assessment Exercise

AN AUDIT ON THE COMPLIANCE WITH THE 2012 SURVIVING SEPSIS CAMPAIGN GUIDELINE IN PATIENTS ADMITTED TO THE INTENSIVE CARE UNIT WITH SEPSIS IN A REGIONAL HOSPITAL IN HONG KONG

Dr Leung Yuen Ling Erica, Department of Medicine, Tseung Kwan O Hospital (Advanced Internal Medicine December 2016 Exit Assessment Exercise)

Objective The global incidence of sepsis is increasing due to improved and earlier recognition, but mortality from sepsis still remains high. Local data on the management according to the Surviving Sepsis Campaign 2012 guideline is lacking. Hence, this study looks at the epidemiology, patient characteristics and management of septic patients according to the Surviving Sepsis Campaign 2012 guideline in those admitted to intensive care unit (ICU) in a regional hospital in Hong Kong.

Methods Clinical records of all patients admitted to ICU of Tseung Kwan O Hospital from 1st January to 30th June, 2014 were screened. Those who fulfilled 2 out of 4 criteria of the systemic inflammatory syndrome (SIRS) plus a documented or suspected infection before or on admission to ICU and 18 years or older were recruited.

Results There were 108 patients who fulfilled the inclusion criteria, corresponding to a incidence of 32%. There were 62% males with a mean age of 63.6 years. Most patients (34.3%) were diagnosed in emergency department and the majority (46%) were transferred to ICU within 3hrs of diagnosis, whereas 44% were transferred >6hrs after diagnosis and 10% were transferred between 3-6hrs. Most common source of infection was respiratory (26%), then blood (15.7%) and urinary tract (7%). Three-hour bundle compliance: lactate 0%, blood culture before antibiotics 56%, administration of antibiotics (100%) and administer intravenous fluids volume to 30ml/kg (21%). Six-hour compliance: vasopressor use (89%), central venous pressure monitoring (68%), central venous oxygen saturation measurement (0%). The hospital mortality rate was 26.8%.

Conclusion The mortality of sepsis is high. Compliance to the 2 bundles falls below expectations and more effort is needed to boost adherence, as the interventions: early blood cultures before antibiotics, early administration of broad spectrum antibiotics and use of CVP monitoring have been proven in other studies to improve survival.

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METFORMIN-ASSOCIATED LACTIC ACIDOSIS REQUIRING INTENSIVE CARE IN A REGIONAL HOSPITAL IN HONG KONG AND PREDICTIVE FACTORS FOR MORTALITY

Dr Lun Chung Tat, Department of Medicine, Alice Ho Miu Ling Nethersole Hospital (November 2016 Critical Care Medicine Exit Assessment Exercise)

Background Metformin-associated lactic acidosis is a severe condition associated with high mortality. However, the factors for mortality were inconsistent in previous studies. Although renal replacement therapy (RRT) is a common practice in treating the condition, the relationship between the timing of commencement of RRT and survival has not been investigated.

Method This is a 5-year retrospective case series in patients with metformin-associated lactic acidosis in a regional hospital in Hong Kong. The primary outcome is to identify factors associated with intensive care unit (ICU) mortality, specifically to investigate the relationship between mortality and time from admission to renal replacement therapy (RRT). The secondary outcomes are to investigate the characteristics and outcomes of patients with

different precipitating factors and to identify factors for duration of RRT dependency.

Results Fifty-nine patients were eligible for analysis. Compared with the 54 survivors, the 5 non-survivors had higher APACHE IV scores, APACHEIV predicted mortality risk, temperature, heart rates and PaCO2 levels, and lower first 24 hr urine volume and serum albumin. They were more likely to be on mechanical ventilation and suffer from sepsis. They had a higher dosage of nor-adrenaline infusion and longer time from hospital admission to commencement of renal replacement therapy.

The Receiver operating characteristics (ROC) curve of the time from admission to RRT for prediction of mortality had an area under curve of 0.776 (p=0.043). Sensitivity and specificity would both be 80% if the cut-off was set at 765.5 minutes from admission to RRT.

When comparing patients with different precipitating factors, patients with sepsis were found to have higher heart rates, PaCO2levels, APACHE IV risk, SOFA score and median nor-adrenaline infusion dosages. They had higher rates of mechanical ventilation and ICU mortality and longer duration of RRT dependence (p=0.026). Patients with baseline serum creatinine level greater than 150μmol/Lin male or 140μmol/Lin female had longer RRT dependence compared with those with lower serum creatinine level. (p=0.005)

Conclusion Our study identified factors associated with mortality in metformin-associated lactic acidosis, including time from admission to commencement of RRT. Further prospective studies may be necessary to determine the optimal timing of initiation of RRT for metformin-associated lactic acidosis in future.

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THE USE OF CONTINUOUS GLUCOSE MONITORING (CGM) IN DIABETIC PATIENTS – LITERATURE REVIEW AND A LOCAL RETROSPECTIVE STUDY

Dr Hui Wai Shan, Department of Medicine, Alice Ho Miu Ling Nethersole Hospital
(November 2016 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Continuous glucose monitoring (CGM) is a technology that provides a continuous measure of interstitial glucose values. It gives a more complete picture of glucose trends and classified into two types: real-time CGM and professional CGM.

We reviewed the CGM technology, its clinical applications, pros and cons. We performed a retrospective case-control study on one of the CGM clinical applications, in which, we investigate the effects of using retrospective download data from professional CGM to guide treatment modification for our type 2 diabetes mellitus (T2DM) patients. We identified all 58 adult T2DM patients that received professional CGM in the period between 2014 and 2015 in our Diabetes nurse specialist clinic of the Alice Ho Miu Ling Nethersole Hospital. A control group matched with age, sex, baseline insulin regime and insulin type was selected from same clinic in same period but without professional CGM.

The CGM group received significantly more change in insulin regime (39.7% of patients in CGM group VS 6.9% in control group) and non-insulin drug treatment (24.1% of patients in CGM group VS 3.4% in control group). We found a significant HbA1c reduction of 0.70 $\pm$ 1.08% from 9.70 $\pm$ 1.00% to 9.00 $\pm$ 0.95% ($p < 0.001$) in CGM group, compared with a non-significant HbA1c reduction of 0.16 $\pm$ 0.81% from 9.64 $\pm$ 1.13% to 9.48 $\pm$ 1.25% ($p = 0.146$) in control group. After adjustments of baseline HbA1c, DM duration and BMI of both groups, CGM group still showed significantly better HbA1c reduction ($p = 0.002$). When analysis was done according to indication subgroups (i.e. hyperglycemia or hypoglycemia and fluctuating glycemia); and intensity of baseline treatment regimen, significant HbA1c reduction was again observed in CGM group. A higher baseline HbA1c was associated with greater HbA1c reduction, in which, there was a 1.19% HbA1c reduction for baseline HbA1c of > 10% ($p < 0.001$), compared with a HbA1c reduction of 0.37% for baseline HbA1c of </= 10% in CGM group. The CGM group had significant reduction in the number of non-severe

hypoglycemia (p = 0.025), but control group did not (p = 0.698). This significant reduction was particularly seen in the hypoglycemia and fluctuating glycemia subgroup (p = 0.026) and in those with more intensive baseline treatment regime (p = 0.024). Both groups did not significantly reduce the number of severe hypoglycemia but overall number of events was small.

Professional CGM may be a useful tool to improve glycemic control in our local T2DM patients.

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THE PREVALENCE OF ASYMPTOMATIC CARRIAGE OF *CLOSTRIDIUM DIFFICILE* IN AN INSTITUTIONALIZED POPULATION UPON HOSPITALIZATION AND THE RISK OF DEVELOPING PSEUDOMEMBRANOUS COLITIS

Dr Choi Wai Lok, Department of Medicine & Geriatrics, United Christian Hospital
(December 2016 Gastroenterology & Hepatology Exit Assessment Exercise)

Background Clostridium difficile (*C.difficile*) is an increasing health care burden. Institutionalized population was postulated to have a higher carriage of *C.difficile.* There was no local data on the prevalence of its carrier rate. Newer evidence suggested that *C.difficile* carriage may confer higher risk of subsequent infection. Its prevalence had infection control implications.

Objectives To find out the prevalence and risk factors of *C.difficile* carriage in residents of long term care facilities upon hospitalization. To study the risk of acquiring it during hospitalization and the risk of developing pseudomembranous colitis in 6 months.

Methods This was a prospective observational cohort study carried out in a regional hospital. Long-term care facility residents admitted to two acute geriatric wards for any causes were recruited from December 2015 to February 2016. Rectal swabs were obtained for *C.difficile* culture within 48 hours. Toxigenicity was confirmed by polymerase chain reaction analysis. Rectal swabs were repeated after discharge. Subjects were followed up for 6 months. Risk factors and background demographics and association with *C.difficile* carriage and infection were studied.

Results The carriage of toxigenic *C.difficile* upon hospitalization in this population was 10.4%. No significant risk factors of toxigenic *C.difficile* carriage upon admission could be identified. Mobility was associated with toxigenic *C.difficile* positivity after a single admission and acquisition of it. The majority (94.1%) of toxigenic *C.difficile* carriers remained asymptomatic. No difference in *C.difficile* infection risk was found between carriers and non-carriers.

Conclusion The carriage of toxigenic *C.difficile* upon hospitalization in this population was 10.4%.

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EVALUATION OF PERFORMANCE OF PRE-ENDOSCOPIC ROCKALL SCORE, GLASGOW BLATCHFORD SCORE AND AIMS65 SCORE IN PREDICTING OUTCOMES IN PATIENTS ADMITTED FOR ACUTE CORONARY SYNDROME COMPLICATED WITH ACUTE UPPER GASTROINTESTINAL BLEEDING

Dr Sakhrani Navin, Department of Medicine and Geriatrics, United Christian Hospital
(December 2016 Gastroenterology and Hepatology Exit Assessment Exercise)

Background Patients who suffer from acute coronary syndrome (ACS) complicated with acute upper gastrointestinal bleeding (UGIB) have high risk of morbidity and mortality. Aprognostic tool predicting outcomes in this group of patients is currently lacking.

Aims This study aimed to evaluate the performance of pre-endoscopic Rockall score (RS), endoscopic intervention and other outcomes in patients with ACS complicated with UGIB.

Methods In this retrospective cohort study, eligible patient were identified with ICD-9 code. Demographic and clinical data were analyzed. Pre-endoscopic RS, GBS and AIMS65 score were calculated for all subjects. Primary outcome was the need for endoscopic intervention. Secondary outcomes were inpatient mortality, 30-day mortality, rebleeding and need for blood transfusion. Area under receiver-operating characteristic (AUROC) was calculated for each score against each outcome.

Results Of the 170 recruited patients, 140 (82.4%) patients proceeded to oesophagogastroduodenoscopy; 29 (20.7%) patients required endoscopic intervention for hemostasis. The pre-endoscopic RS, GBS and AIMS65 showed fair performances (AUROC=0.74 vs 0.77 vs 0.75) in predicting need for endoscopic intervention with no statistical significant difference. The 3 scoring systems performed well in predicting inpatient mortality and 30-day mortality. AIMS65 performed well in predicting rebleeding. Only GBS showed fair performance in predicting transfusion requirement.

Conclusions Pre-endoscopic RS, GBS and AIMS65 score exhibited only fair performances in predicting need for endoscopic intervention in patients admitted for ACS complicated with UGIB. A new scoring system specifically designed for this special group of patient is urgently needed.

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IS IT TIME TO CHANGE OUR FIRST LINE *HELICOBACTER PYLORI* ERADICATION THERAPY? CLINICAL TRIAL: LEVOFLOXACIN-CONTAINING TRIPLE THERAPY VERSUS CLARITHROMYCIN-CONTAINING TRIPLE THERAPY IN HONG KONG –A SINGLE CENTRE, DOUBLE BLINDED STUDY

Dr Wong Hang Hoi, Michael, Department of Medicine & Geriatrics, United Christian Hospital (December 2016 Gastroenterology and Hepatology Exit Assessment Exercise)

Background Studies worldwide have demonstrated the rising prevalence of clarithromycin resistant strains, resulting in decline of eradication rate for *Helicobacter pylori* infection. We proposed a 7-day levofloxacin-based triple therapy as an alternative in our locality. The primary aim of this study was to compare a 7-day levofloxacin-based triple therapy with the standard 7-day clarithromycin-based triple therapy for the eradication of *H. pylori* infection in patients naïve to treatment in Hong Kong. The trial was designed as a non-inferiority trial

Methods A prospective, single-centre, double-blinded, randomized controlled trial was conducted in United Christian Hospital in Hong Kong. 220 consecutive *H. pylori* positive patients were recruited and randomly assigned to receive either 1 week of LAP (levofloxacin 250mg BD, amoxicillin 1g BD, pantoprazole 40mg BD) or 1 week of CAP (clarithromycin 500mg BD, amoxicillin 1g BD, pantoprazole 40mg BD). Eradication of *H. pylori* was assessed at week 6 post treatment with 13C-urea breath test.

Results Intention-to-treat analysis (ITT) showed that *H. pylori* eradication was achieved in 74.5% and 75.5% of candidates and per protocol analysis (PP), 82.0% and 80.6%, following 7-day triple therapy of LAP and CAP respectively. The eradication rates between the two therapy, either by ITT (p=0.973) or PP (p= 0.796) did not differ.

Conclusions 7-day clarithromycin-based triple therapy remained to be an effective first line *H. pylori* eradication therapy in Hong Kong. On the other hand, 7-day levofloxacin-based regimen has also demonstrated similar efficacy against *H. pylori*, and can be considered as first line *H. pylori* eradication therapy.

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WHAT ARE THE FACTORS ASSOCIATED WITH EARLY ERCP (OR PTBD) IN ACUTE CHOLANGITIS PATIENTS?

Dr Yeung Wing Yin, Department of Medicine and Geriatrics, Caritas Medical Centre (December 2016 Gastroenterology and Hepatology Exit Assessment Exercise)

Background / Aim The severity of acute cholangitis varies from mild to severe. Antibiotic alone may not be sufficient in severe cholangitis and early biliary drainage may be required. The objective of this study is to identify the factors associated with early biliary drainage (ERCP or PTBD) in subjects with acute cholangitis.

Methods This is a retrospective study of 298 subjects who fulfilled the definite diagnosis of acute cholangitis based on the Tokyo Guideline 2013 (TG 13) between year 2010 and 2013, and were admitted to the Department of Medicine and Geriatrics of a district public hospital. Early biliary drainage (ERCP or PTBD) was defined as the procedure being performed within 48 hours after admission. Factors associated with early ERCP (or PTBD) were determined by multivariate regression analysis.

Results Multivariate analysis identified six variables (younger age [p=0.001], systolic blood pressure lower than 100 mmHg [p=0.034], body temperature higher than or equal to 39°C [p=0.013], decrease in conscious level [p=0.036], elevated urea [p=0.034] and admission during weekdays [p=0.037]) as independent factors associated with early ERCP (or PTBD) in these subjects with acute cholangitis. Length of stay was shorter in the early ERCP (or PTBD) group but there was no difference in the rate of persistent organ failure and mortality rate between the early and the delayed biliary drainage groups

Conclusions Six independent variables were found to be associated with early (within 48 hours of admission) ERCP (or PTBD) in acute cholangitis patients managed in the Medical wards of a district public hospital.

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OUTCOMES OF HOME DWELLING ELDERLY PATIENTS WITH HIP FRACTURE AFTER DISCHARGE FROM A REHABILITATION HOSPITAL--INSTITUTIONALIZATION, MORTALITY AND RECURRENT FALLS. A RETROSPECTIVE STUDY

Dr Wong Sze Man, Department of Medicine, Haven of Hope Hospital (November 2016 Geriatric Medicine Exit Assessment Exercise)

Background and aim Hip fracture is common among the elderly population. Hip fracture results in large impact to the elderly including institutionalization and mortality. This study aims at determining the rate of institutionalization of home dwelling elderly patients suffered hip fracture. Also, factors which would help to predict the need of institutional care are explored. Moreover, exploring the post discharge fall and fracture rate, and the mortality rate at one year will help to understand more on the outcomes of hip fracture in home dwelling elderly patient.

Methods This was a retrospective study on patients with fracture hip discharged from a rehabilitation hospital. Home dwelling patients aged 65 years old or above who sustained from hip fracture were eligible. The study period was January 2013 to September 2014. Patient's case notes were reviewed and data were collected for analysis.

Results A total of 201 home dwelling patients with fracture hip were included in this study. In which 26.9% was discharged to an old aged home. Older age, living alone and lower mobility score upon discharge from the rehabilitation hospital were the significant factors associated with institutionalization. 12.4% of all patients died within one year since discharged from the rehabilitation hospital.

Conclusion Hip fracture has large impact on elderly patients in terms of institutionalization

and mortality. Several factors were found to be associated with institutionalization which is useful in discharge planning. Further study including factors of carer may uncover more factors that contribute to institutionalization.

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EFFECT OF HYPERDIPLOIDY ON PROGNOSIS IN MYELOMA PATIENTS WITH ADVERSE CYTOGENETICS IN A TERTIARY REFERRAL CENTRE IN HONG KONG

Dr Mak Wing San, Department of Medicine, Queen Elizabeth Hospital (November 2016 Haematology & Haematological Oncology Exit Assessment Exercise)

Purpose In patients with myeloma, how concurrent cytogenetic aberrations interact with each other remains largely unknown. We hypothesized that hyperdiploidy, which was found to confer favorable prognosis, could modulate the adverse effects of poor-risk cytogenetic changes including t(4;14), t(14;16), and del(17p).

Patients and Methods We analyzed 78 newly diagnosed myeloma patients using conventional karyotyping and fluorescence in-situ hybridization (FISH). Patients were screened for deletion 1p, 1q gain, t(4;14), t(14;16), monosomy 13/deletion 13q, deletion 17p, and trisomies 5, 9, and 15. Correlation of cytogenetic abnormalities with survival was established by univariate and multivariate analyses.

Results High-risk FISH was observed in 30.8% in this cohort of 78 patients. The presence of high-risk FISH significantly worsened OS (29.1 months vs not reached, p=0.035) but not EFS. We further grouped patients with high-risk FISH and hyperdiploidy as a category (n=4), and found that their median OS was not significantly different from that of standard-risk patients (median OS in both groups not reached, p=0.58). Despite this might suggest that the existence of hyperdiploidy could abrogate the poor prognosis conferred by adverse FISH, no conclusion can be drawn due to the small number of patients in the overlapping group. Multivariate analysis found that only abnormal karyotype identified patients with poor overall survival.

Conclusion These findings suggest that hyperdiploidy may impart a more favorable prognosis on myeloma patients with high-risk FISH, but interpretation is limited due to the small number of patients in the overlapping group. This has important implications in further risk-stratifying myeloma patients with concurrent genomic aberrations.

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A RETROSPECTIVE STUDY ON CLINICAL OUTCOME OF ASSISTED CAPD IN ELDERLY POPULATION, A LOCAL CENTER EXPERIENCE

Dr Luk Yee Andrew, Department of Medicine and Geriatrics, Tuen Mun Hospital (December 2016 Nephrology Exit Assessment Exercise)

Background With advances in healthcare, the proportion of elderly in the end stage renal failure (ESRF) population is growing rapidly. Majority of elderly ESRF patients in Hong Kong are put on peritoneal dialysis (PD) under the PD first policy. Significant number of elderly PD patients requires assistance in PD, either by home helper or nursing home staff. There have been studies indicating that chronic peritoneal dialysis is a successful dialysis option for elderly patients with end stage renal disease. However local and overseas data on clinical outcome in self, home helper and nursing home CAPD in elderly ESRF population is scarce.

Study Objective My study aim is to investigate clinical characteristics and compare the outcome of elderly PD patients with different methods of assistance in CAPD (1. Self CAPD, 2. Home helper CAPD, 3. Nursing home CAPD). The result would offer us more data about

the outcome and survival of dialysis which could be used during pre-dialysis renal assessment. This may provide the patients and family members more concrete estimation of survival prospect after initiation of CAPD to facilitate better dialysis planning.

Methods This is a retrospective analysis studying all patients who were 65 year old or above when continuous ambulatory peritoneal dialysis (CAPD) was started between 1st January 2005 to 31st December 2010 and who were followed up in Tuen Mun Hospital renal unit during the study period. Patient demographic data and blood parameters were collected at the beginning of study. Outcome events including patient survival, cause of death, peritonitis free survival, peritonitis rate, hospitalization rate, technique failure, change in method of assistance and post dialysis blood parameters were reviewed.

Results A total 224 patients were eligible to the study. The mean age of the study cohort was 71.3 +/- 4.5 years. Three different methods of assistance in CAPD shared similar number of patients and their distribution is as follow: Self CAPD 36.6%, Helper CAPD 38.4%, and nursing home CAPD 25.0%. 166 patients (74.1% of total) died within the study period. 36 patients (16% of total) had change in method of assistance in CAPD and 6 patients (2.7% of total) had technique failure within the study period. Infection was the main cause of death among the study cohort, compromising up to 50% of all causes of mortality. Among all infective causes, CAPD peritonitis and pneumonia contributed to a major proportion with 19.9% and 19.3% respectively.

On further analysis of three subgroups (Self CAPD, Helper CAPD and nursing home CAPD), patients on self CAPD (69.9 +/-4.3 years) were younger when compared to helper CAPD group (72.0 +/-4.6 years) and nursing home CAPD group (72.2 +/- 4.2 years) (p= 0.002, scheffe test). No significant difference was identified in prevalence of co-morbidities including diabetes mellitus, stroke, peripheral vascular disease, congestive heart failure, dementia among the three subgroups. 5 year mortality was significantly higher in helper CAPD group (80.2%) and nursing home group (80.4%) when compared to self CAPD group (63.4%) (p=0.021), but there was no difference found in technique failure and peritonitis free survival. Both hospitalization rate and peritonitis rate were highest in the nursing home CAPD group comparing to self CAPD group and helper CAPD group though the p values were marginally above 0.05 (p=0.08 and p=0.1 respectively, scheffe test). Nursing home CAPD group also had higher hospitalization rate due to infection when compared to the self CAPD group (p =0.004, scheffe test). Death due to infection is significantly higher in the helper CAPD group (52.2%) and nursing home CAPD group (57.8%) when compared to self CAPD (39.5%) (p=0.022). CAPD peritonitis and pneumonia comprised of majority of death due to infection.

The median survival of patients on self CAPD, helper CAPD and nursing home CAPD were 56.0 months, 36.8 months and 29.0 months respectively (p =0.001, Log Rank test). The mean peritonitis free survival in self CAPD, helper CAPD and nursing home CAPD were 32.2 +/- 2.6 months, 32.1 +/- 2.7 months and 25.4 +/- 3.1 months respectively, showing nursing home CAPD patients had poorer peritonitis free survival comparing to the 2 other groups though Log Rank test failed to show any statistical significance (p=0.156).

In multivariate analysis, nursing home CAPD patient (HR 1.639 95%CI 1.007-2.407 p=0.037) and helper CAPD patient (HR 1.557 95% CI 1.007 -2.407 p=0.047) had poorer survival when compared to self CAPD patient after adjusting to demographic characteristics. Among various medical comorbidities, diabetes mellitus (HR 1.833 95% CI 1.280-2.771, p=0.001), peripheral vascular disease (HR 5.049 95% CI 2.294-11.110, p<0.001) and stroke (HR 1.711 95% CI 1.084 - 2.771, p=0.001) were independent predictive factor of poor patient survival. Other significant variables associated with worse patient survival included age ≥75 years old, frequent hospitalization, post dialysis anemia (Hemoglobin <8g/dL) and post dialysis hypo/ hypercalcemia (adjusted Calcium <2.1 or >2.6 mmol/L). In multivariate analysis for peritonitis free survival, mode of CAPD was not shown to be a significant predictive factor. Other independent risk factors for poor peritonitis free survival included age above 75 years old, history of stroke and baseline hypoalbuminemia.

Conclusion My result showed that elderly self CAPD patient had better outcome than elderly assisted CAPD patients in terms of mortality and morbidity. Elderly self CAPD patients also had comparable survival when compared to younger CAPD patients, thus self CAPD was a satisfactory dialysis modality for elderly patient. Though elderly helper CAPD patients and elderly nursing home CAPD patients had similar 5 year survival, helper CAPD patients had lower mortality risk and longer median survival duration and they also enjoyed better quality of life while on dialysis as reflected by lower overall hospitalization rate, lower hospitalization rate secondary to infection, lower CAPD peritonitis rate and lower mortality secondary to CAPD peritonitis. Therefore for elderly patients who required assistance in CAPD, helper CAPD should be encouraged when comparing to nursing home CAPD. Lastly home care nurse assisted peritoneal dialysis had been a successful modality for elderly end stage renal failure patients in many overseas countries. In view of current evidence suggesting home based peritoneal dialysis had benefit over nursing home peritoneal dialysis, home care nurse assisted peritoneal dialysis could be another option for the elderly end stage renal failure patients in Hong Kong in the future.

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CLINICAL FEATURES AND NEUROLOGICAL OUTCOMES IN A COHORT OF CHINESE PATIENTS WITH ANTI-GQ1B ANTIBODY SYNDROME: A RETROSPECTIVE STUDY

Dr Wai Tsz Yan, Department of Medicine, North District Hospital (November 2016 Neurology Exit Assessment Exercise)

Background Anti-GQ1b antibody has been found in cases with Miller Fisher syndrome, Guillain-Barre syndrome, Bickerstaff's brainstem encephalitis, acute ophthalmoplegia without ataxia, acute ataxia without ophthalmoplegia and ataxic Guillain-Barre syndrome. The aim of this study is to identify the clinical features, investigation findings and exploring the disease outcome of the spectrum of disease.

Methods Data were collected in patients with Anti-GQ1b antibody syndrome concerning their presenting symptoms, clinical features, cerebrospinal fluid results, nerve conduction studies, electroencephalography findings, imaging findings, treatment choices and outcome in terms of functional disability. Comparison was made between patients with positive anti-GQ1b antibody and those with negative anti-GQ1b antibody, and between those with good outcome and those with poor outcome at 3 months from disease onset.

Results 108 patients with Anti-GQ1b antibody syndrome (by clinical diagnosis) were identified from three regional hospitals, among which 50 patients were serologically tested for their anti-ganglioside antibodies. 32 out of the 50 patients (64%) tested for anti-ganglioside antibodies were serologically positive for anti-GQ1b antibody. Patients with positive anti-GQ1b antibody are more likely to develop Miller Fisher syndrome, acute ophthalmoplegia without ataxia, Bickerstaff's brainstem encephalitis and ataxic Guillain-Barre syndrome, while Guillain-Barre syndrome is more common in the GQ1b-seronegative group. Patients with preceding respiratory infections have a higher chance of developing anti-GQ1b antibodies. The seropositive group presents more commonly with ataxia (72% vs 33%) and ophthalmoplegia (72% vs 17%). Patients generally have a good prognosis in the GQ1b-seropositive group, with 86% and 89% having a Modified Rankin Scale score of 0-2 by 3 months and by 6 months from disease onset respectively. Prognostic factors of poor outcome include presence of limb weakness, respiratory failure, need for ventilatory support, findings of axonal neuropathy and abnormal F wave latencies in nerve conduction studies. Patients with a higher MRS score and a more severe degree of limb weakness at initial presentation also predicts a poorer outcome.

Conclusions Patients with anti-GQ1b antibody in general have good prognosis with

recovery reached by 3-6 months in a majority of cases. Identifying prognostic factors such as limb weakness, respiratory failure and need for ventilatory support predicts poorer outcomes along its disease course.

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PREVALENCE, RISK FACTORS AND OUTCOME IMPACT OF NON-ADHERENCE TO CARDIAC REHABILITATION PROGRAM FOR CORONARY HEART DISEASE PATIENTS IN A LOCAL CARDIAC REHABILITATION CENTRE

Dr. Leung Ho Ching, Department of Medicine and Rehabilitation, Tung Wah Eastern Hospital
(December 2016 Rehabilitation Exit Assessment Exercise)

Background and Objectives Adherence to cardiac rehabilitation (CR) program is associated with reduction in mortality and cardiovascular (CV) related hospital admissions in patients with coronary heart disease (CHD). The objectives of this study are to investigate the prevalence, the predictors and the outcome impact of non-adherence to CR program in CHD patients in Tung Wah Eastern Hospital (TWEH) CR center.

Methods and Results We conducted a retrospective cohort study of 274 subjects (73.4% male, mean age of event 64.0 years) with CHD who had CR program in TWEH CR center between January 2014 and August 2015. Physical, biochemical and psycho-social parameters were recorded at baseline and after CR program. Mortality and CV related hospital admission were recorded at 1 year after the program. 235 patients (85.8%) completed the CR program, and there was no gender difference between the completers and non-completers. The reasons for non-adherence to CR program were lack of motivation, occupation demand, comorbidities and paucity of transportation. Predictors of non-adherence were history of coronary artery bypass grafting (CABG), poor drug compliance and divorce. The first year mortality rate was 5.128% and 0.851% in the non-completers and completers respectively (P=0.039). There was no significant difference on CV related admissions between the two groups. Completers had significant improvement in blood pressure, body weight, body mass index (BMI), waist circumference, exercise capacity, lipid profile, fasting blood sugar (FBS) level, quality of life, anxiety and depression.

Conclusions The non-adherence rate is low (14.2%) in TWEH CR program. Local factors and predictors for non-adherence have been identified, further exploration and remedies to improve CR program adherence are warranted. CR program completion is associated with lower first year mortality, but not associated with CV related admission reduction in our cohort. Extension of recruitment and longer follow-up period may provide more information. This study should have referential value to other CR centers to identify potential non-completers and to improve CR service in Hong Kong.

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PROGNOSTIC FACTORS AND ONE-YEAR REHABILITATION OUTCOME OF OLDER ADULTS WITH HIP FRACTURE

Dr Ma Chung Yee Arisina, Department of Medicine & Geriatrics, United Christian Hospital
(December 2016 Rehabilitation Exit Assessment Exercise)

This is a prospective cohort study, which aims at investigating the prognostic factors for adverse rehabilitation outcomes one year after hip fracture. We studied 1766 geriatric patients who were admitted to United Christian Hospital from January 2012 to December 2014 for hip fracture, and their mean age was 82.2 ± SD 8.0. The 1-year mortality of our patients was 14.7%. Among patient survived at 1year (N=1437), their Modified Barthel Index 20 (MBI) score was significantly lower, compared with their pre-fracture score (14.2 ± SD 6.0 vs. 17.5 ± SD 4.0, $p < 0.01$), 26.7% of them was able to stay in the same MBI functional category. 49.9 % of patients who were able to perform the outdoor activity before became homebound at one year. Older age, pre-morbid Parkinsons disease and dementia, higher pre-fracture Clinical Frailty Scale (CFS) score, discharge to old age home rather than own

home, and longer length of stay in acute hospital were the significant risk factors for poorer MBI at one year.

Cox-regression model analysis showed that men, older age, premorbid COPD and dementia, higher baseline Charlson Comorbidity Index and longer length of stay in acute hospital were related to higher mortality one-year post fracture. On the other hand, 20% of patients who lived at home before hip fracture were institutionalized at one year. Men and older patients, patients with dementia and higher pre-fracture clinical frailty scale, patients live alone before hip fractures, as well as longer stay in acute hospital have a higher probability to become institutionalized.

In conclusion, a significant number of older adults fail to retain their premorbid functional level after hip fracture, and it is significantly affected by various baseline patient characteristics. Comorbidity and frailty assessment is necessary to predict the prognosis of older adults after hip fracture rehabilitation.

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A RETROSPECTIVE OVERVIEW OF CLINICAL FEATURES, DIAGNOSIS, TREATMENT OUTCOME AND RELAPSE RISK OF IgG4 RELATED DISEASE IN HONG KONG: A DATASET OF 108 PATIENTS FROM FOUR REGIONAL HOSPITALS

Dr Tang Chun Pong, Department of Medicine, Pamela Youde Nethersole Eastern Hospital
(November 2016 Rheumatology Exit Assessment Exercise)

Background IgG4 related disease (IgG4RD) is a new fibroinflammatory disease recognized in the past decade. Several diseases like autoimmune pancreatitis and Mikulicuz' syndrome belong to the disease spectrum.

Objective To review the clinical features, management and relapse risk in IgG4RD, and to analyze the association between initial steroid dosage and duration with treatment response and relapse.

Materials and method It was a retrospective study of IgG4RD patients referred to rheumatologists, gastroenterologists and haematologists with serological or histological evidence from 4 regional hospitals in Hong Kong between 1/1/2006 to 30/6/2016. Demographical, serological and histological data were compared and steroid dosage and duration were analyzed for treatment response and relapse risk by multivariate logistic regression.

Results This study include 108 patients. The mean diagnosis age was at 62.8. Male to female ratio was 3:1. Sialadenitis was the commonest (43%), followed by pancreatitis (26%). Most patients (90.4%) had raised serum IgG4 level. Multi organ involvement was associated with twofold increased IgG4 level (86.3%, p=0.007). Lymphoplasmacytic infiltrate and dense fibrosis were classical histological features. The starting prednisolone dose at or above 30mg daily appeared more effective (OR=3.4, p=0.079). Maintenance steroid (HR=0.121, p=0.047, 95%Cl 0.106-0.311) was associated with lower relapse risk while twofold elevated IgG4 level (HR=5.283 p=0.029, 95%Cl 1.187-23.522) and hepatobiliary organ involvement (HR=2.164, p=0.095, 95%Cl 0.873-5.365) were associated with higher relapse risk.

Conclusion IgG4RD patients with twofold elevated IgG4 or hepatobiliary involvement are at higher relapse risk and low dose maintenance steroid more than 24 weeks is recommended for them.

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