Abstracts of Dissertations
December 2011 Exit Assessment Exercise

THE CLINICAL CHARACTERISTICS OF PANDEMIC 2009 INFLUENZA A (H1N1): THE EXPERIENCE OF A REGIONAL HOSPITAL IN HONG KONG

Dr Siu Yuk Leung Seamus, Intensive Care Unit, Princess Margaret Hospital (December 2011 Advanced Internal Medicine Exit Assessment Exercise)

Background In June 11, 2009, the World Health Organization raised its pandemic alert level of pandemic 2009 Influenza A (H1N1) to the highest level, i.e. phase 6, indicating widespread community transmission on at least two continents. This Influrenza pandemic resulted in a significant impact to Hong Kong. This study described the clinical characteristics of patients infected with Pandemic 2009 Influenza A (H1N1) in Princess Margaret Hospital, a referral hospital in Hong Kong.

Methods A retrospective study involving 317 patients with the diagnosis confirmed mainly by reverse transcriptase-polymerase chain reaction of nasopharngeal aspirate or swab was conducted. Their demographic data, clinical course, investigation results, treatment modalities and clinical outcome were reviewed.

Result 317 patients were admitted. The median length of stay in hospital was 5.0 days (IQR4.0). Thirteen of 317 (4.1%) patients required ventilatory support of which 6 (1.9%) needed non-invasive positive pressure ventilation, while 7 (2.2%) required intubation with mechanical ventilation..1.6% of our patients needed ICU care. The overall inpatient mortality was 1.3%. History of diabetes mellitus (DM) ($P<0.05$) and hostel residents ($P<0.005$) were found to associate with increased mortality. The odds ratio of death for DM and hostel residents was 21.8 [95% CI 1.2 to 380.0] and 86.1 [95% CI 4.7 to 1573.7] respectively. 11.7% of our patients were pregnant. None of them required intensive care unit admission or died.

Conclusion Our data showed that most of the H1N1 Influenza A patients ran an uncomplicated clinical course with an inpatient motality rate of 1.3%. It was even lower than that of seasonal flu 5.2%-6%. Diabetic patients and hostel residents were the high risk groups with increased mortality. Strategic public health measures including vaccination programme to target high risk patients should be considered in future.

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THE PREVALENCE OF UNDIAGNOSED ABNORMAL GLUCOSE TOLERANCE AND RELATED CARDIOVASCULAR OUTCOMES IN PATIENTS WITH ACUTE CORONARY SYNDROME WITHOUT PRIOR HISTORY OF DIABETES MELLITUS: A SINGLE CENTRE, LOCAL PROSPECTIVE STUDY

Dr. Cheuk Ming Yan, Department of Medicine, Alice Ho Miu Ling Nethersole Hospital (December 2011 Cardiology Exit Assessment Exercise)

Aims Despite the high prevalence of undiagnosed diabetes mellitus (DM) by assessing fasting plasma glucose (FPG) alone in patients with acute coronary syndrome (ACS) as shown in various studies, the use of oral glucose tolerance test (OGTT) remained limited. The prognostic implication of the unrecognized diabetes

and impaired glucose tolerance (IGT) was studied, but with controversial results. Our study aimed to investigate the local prevalence of the abnormal glucose tolerance (AGT) and its long-term implication in ACS patients.

Method and Results Patients (n=200) with ACS and no previous history of DM were recruited. Their glucometabolic status was evaluated by FPG and OGTT. They were followed up for one year or till death for major cardiovascular events (MACE). The prevalence of AGT was 70.5% (n=141) comprising of impaired glucose tolerance (n=60, 30%), impaired fasting glucose (n=37, 18.5%), and newly diagnosed diabetes (n=12, 6% by FPG, n=32, 16% by OGTT). About 16% of patients with newly diagnosed diabetes and 30% of patients with IGT would be missed by testing FPG alone.

Of the 29 MACE were found, most of which occurred in patients with AGT. Together with ischaemic heart disease, DM (hazard ratio 1.72, p=0.027), but not IGT (hazard ratio 1.11, p=0.782), was found to be a significant risk factor for developing MACE.

Conclusion By testing FPG alone, a significant proportion of ACS patients would have undiagnosed DM and IGT, which are important risk factors for MACE. Identifying such target group of patients at an early stage can render disease progression and the associated MACE.

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DIAGNOSTIC VALUE OF SEGMENTAL LONGITUDINAL STRAIN BY AUTOMATED FUNCTION IMAGING (AFI) IN PATIENTS WITH ACUTE CORONARY SYNDROME

Dr. Cheung Li Li, Department of Medicine, North District Hospital (December 2011 Cardiology Exit Assessment Exercise)

Background Speckle-tracking echocardiography by automated function imaging (AFI) is a novel method for assessment of left ventricular (LV) function and ischemic changes. The aim of this study was to assess the diagnostic value of two-dimensional longitudinal strain in identification of significant coronary artery stenosis in patients with acute coronary syndrome.

Methods Speckle tracking derived strain analysis was performed in patients admitted for acute coronary syndrome. The global and segmental longitudinal strains were analyzed in 78 patients with acute coronary syndrome and 16 normal control subjects.

Results Sixty-seven patients had significant coronary artery stenosis on coronary angiography. Significant differences were observed in all strain parameters between patients with and without coronary artery stenosis. The global longitudinal peak systolic strain (GLPSS) was significantly lower in patients with severe CAD such as left main or triple vessel coronary stenosis. The area under the receiver operating characteristic curve for GLPSS was 0.78and territorial peak systolic strain was 0.76, 0.74 and 0.76 at left anterior descending artery (LAD), left circumflex artery (LCX) and right coronary artery (RCA) respectively. By defining the cut off value of 18%, the sensitivity and specificity of GLPSS for detecting a significant coronary artery stenosis was 80% and 67% respectively.

Conclusion Patients with severe coronary stenosis had significantly lower GLPSS.

In patients with non-ST segment elevation acute coronary syndrome, those with severe coronary artery stenosis had significantly lower longitudinal strain values than those without. Detection of contractile abnormalities by 2D derived myocardial strain may be a useful and noninvasive tool to select patients who may benefit from urgent reperfusion therapy.

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A STUDY ON THE LONG-TERM PERFORMANCE OF IMPLANTABLE PACEMAKER LEADS: COMPARISON BETWEEN AXILLARY, SUBCLAVIAN AND CEPHALIC VENOUS APPROACH

Dr Kwong Nim Pong, Department of Medicine, Yan Chai Hospital (December 2011 Cardiology Exit Assessment Exercise)

Background Venous access is a pre-requisite step in pacemaker implantation. Ideal technique should not only be simple, safe and feasible with high successful rate. Long term lead performance should also be one of the important considerations. It is by no doubt the conventional intrathoracic subclavian venous access was associated with higher incidence of lead failure in previous studies. Lateral approaches especially the axillary vein approach is gaining popularity. It is time to look at the long term result for this technique.

Purpose To investigate the relationship between venous access and long-term pacemaker lead failure (PLF)

Methods: This is a retrospective cohort study. Case records of 409 patients (221 women, mean age 72.2±10.5 years) undergoing pacemaker implantation in 2 hospitals in the period between January 2000 and December 2004 were reviewed. PLF was defined as abnormal impedance and/or high pacing threshold and/or low sensing threshold leading to replacement or abandonment of the lead. PLF rates were compared for leads implanted through different venous access.

Results A total of 681 (273 atrial and 408 ventricular) leads were implanted with contrast-guided axillary vein puncture (AP, 252), subclavian vein puncture (SP, 212) or cephalic vein cut-down (CP, 217). Over a mean follow-up of 73.6±33.1 months, 25 PLF were documented. Four (1.6%) were in AP group, 8 (3.7%) were in CP group and 13 (6.1%) were in the SP group. With Kaplan-Meier analysis, AP results in significantly less PLF than SP (p=0.006) but not CP (p=0.084). Using multivariate analyses, only route of venous access and type of lead fixation mechanism are identified as risk factors predicting PLF. [p = 0.019, hazard ratio 1.96 (CI 1.12-3.43) and p=0.037 hazard ratio 3.69 (CI 1.08-12.61) respectively], but not the other variables (Patient age and sex, cardiac chamber of lead implantation, lead size, lead insulation material).

Conclusions Venous access and lead fixation mechanism are independent predictors of PLF. AP results in less PLF than SP.

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INAPPROPRIATE ICD SHOCKS IN CHINESE PATIENTS: THE NCIDENCE, PREDICTORS AND OUTCOME

Dr Leung Wai Fung, Anders, Department of Medicine and Geriatrics, Tuen Mun Hospital (December 2011 Cardiology Exit Assessment Exercise)

Objective To look into the incidence and predictors of inappropriate implantable cardioverter defibrillator (ICD) shock and evaluate the impact on survival of patient.

Design A single center retrospective observational study

Setting Regional hospital in Hong Kong SAR, China

Background In recent years, implanting ICD under guideline-driven indications is becoming more common. Problems arising from use of ICD are also more frequently seen. Inappropriate ICD shock is one of the more common complications that cardiologists might encounter. Studies have been conducted in Caucasian populations to look into this problem. However, relevant data in this area amongst Chinese patients is lacking. This study was done to provide some information to supplement the management of inappropriate ICD shock in our locality.

Method From May 2001 to May 2010, all patients who received ICD implantations in Tuen Mun Hospital were included in the study. The clinical parameters and occurrence of inappropriate shock as well as patient outcomes were recorded and analyzed.

Result A total of 80 ICD recipients (74% male, mean age 53±15 years) were included in the study. During the study period, 18 patients (22.5%) experienced inappropriate shock. Atrial fibrillation was found to be an independent predictor for the occurrence of inappropriate shock (hazard ratio 8.9, $p < 0.001$). Mortality of all cause was not found to be higher among patients who were shocked inappropriately.
Conclusion Inappropriate ICD shocks were common amongst Chinese ICD recipients and their delivery were best predicted by a history of atrial fibrillation. It was not related to an increase in mortality.

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STUDY ON THE SAFETY AND EFFICACY OF TENECTEPLASE IN THE MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION AS COMPARED TO STREPTOKINASE, A LOCAL HOSPITAL EXPERIENCE
Dr Ma Hon Sum, Department of Medicine, Queen Elizabeth Hospital (December 2011 Cardiology Exit Assessment Exercise)

Background The use of streptokinase in the management of acute myocardial infarction has been well established for long time, especially when primary percutaneous coronary intervention facilities are not available, for which nowadays the preferred treatment option. Tenecteplase, the third generation recombinant plasminogen activator, has been used for years in the United States and European countries2 3. It was not until 2009, the Hospital Authority finally introduce this newer agent to Hong Kong for the management of acute thrombotic myocardial infarction. However, there is no local data on the efficacy and safety on the use of tenecteplase in Hong Kong. The primary objective of this study is on the efficacy and safety with this new thrombolytic agent. The secondary objective is to study the effect of this agent on the mortality.

Methods and patients Patients who were admitted to the Department of Medicine, Queen Elizabeth Hospital between January 2009 and December 2010, presented with symptoms of chest pain and electrocardiogram evidence of myocardial infarction

were reviewed. Those given with thrombolytics were recruited for the study. We investigate on the safety of the thrombolytic agents, including hypotension, bleeding, intracerebral hemorrhage, gastrointestinal bleeding and cerebrovascular accident. We look at the efficacy which is defined by the resolution of ST elevation by 50% on electrocardiogram. We define the secondary outcome by 30- day mortality and composite end points, including reinfarction, congestive heart failure, intracerebral hemorrhage and coronary artery bypass graft surgery.

Results Seventy patients were recruited in 2009 and were given streptokinase. Tenecteplase were given to 81 patients in 2010. Intracranial or intracerebral hemorrhage occurred in 2 patients receiving streptokinase no such complication was observed in the tenecteplase treatment group. Successful thrombolysis was achieved in 48.6% in the streptokinase treatment group and 71.6% in the tenecteplase group. The 30- day mortality was 6 in the streptokinase group and 7 in the tenecteplase group.

Conclusions Tenecteplase is both safe and efficacious in treating acute myocardial infarction in local ethnic Chinese.

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ARRHYTHMIC EVENTS AND CLINICAL PROFILE IN PATIENTS WITH BRUGADA SYNDROME IN HONG KONG

Dr Wong Shung Yee, Department of Medicine, North District Hospital (December 2011 Cardiology Exit Assessment Exercise)

Objectives To study the arrhythmic events and clinical profile of Brugada syndrome in the Hong Kong population

Background Previous studies had demonstrated a high incidence of atrial tachyarrhythmia and ventricular tachyarrhythmia in patients with Brugada syndrome. The present study aimed to investigate whether various clinical parameters may help to predict subjects with high probability to develop those arrhythmic events.

Methods and Results The clinical data of 38 patients (55.6±15.4 years old, 36 male) whom were diagnosed or followed up in 2 hospitals were collected. 15 patients (39.5%) had spontaneous type 1 Brugada electrocardiogram (ECG). 17 patients (44.7%) were symptomatic. Programmed electrical stimulation was performed in 20 patients (52.6%), of which 10 patients were test positive. Implantable cardioverter-defibrillators (ICD) were implanted to 14 patients (36.8%). During a mean follow-up period of 56.7±46.7 months, 3 patients (7.9%) suffered from paroxysmal atrial fibrillation and 3 patients had ventricular tachyarrhythmia requiring defibrillation by the ICD. None of the clinical parameters was associated with further arrhythmic events,. However there is a trend that patients with spontaneous type I Brugada ECG ($p=0.054$) may have a higher risk of having further ventricular tachyarrhythmia, a positive programmed electrical stimulation ($p=0.087$) may suggest higher risk of having any arrhythmic event, and symptomatic patients may have a higher chance of both ventricular event ($p=0.081$) and any arrhythmic event ($p=0.07$). 5 out of 15 patients (33.3%) who received treatment suffered from complications including pneumothorax, subclavian vein thrombosis, inappropriate shocks, device failure and amiodarone related thyrotoxicosis.

Conclusion In this study, low prevalence of atrial fibrillation (7.9%) and ventricular

arrhythmia (7.9%) were detected. None of the clinical parameters were associated with increased risk of arrhythmic events. Treatment related complications are not uncommon among them.

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A LOCAL REVIEW OF THE CLINICAL OUTCOME OF A CASE SERIES OF ALL GUILLAIN-BARRE SYNDROME (GBS) PATIENTS ADMITTED INTO THREE INTENSIVE CARE UNITS (ICUS) IN HONG KONG: A TEN-YEAR MULTI-CENTRE EXPERIENCE

Dr Ng Chung Hoi, Department of Medicine & Geriatrics, Kwong Wah Hospital
(November 2011 Critical Care Medicine Exit Assessment Exercise)

Objectives The aim of the present study was to review the clinical outcome of a case series of all GBS patients admitted into three local ICUs.

Design This was a retrospective case series review.

Settings ICUs in Kwong Wah Hospital (KWH), United Christian Hospital (UCH), and Pamela Youde Nethersole Eastern Hospital (PYNEH) in Hong Kong.

Methods Retrieving data by using the Clinical Information System (CIS) and Clinical Management System (CMS) databases of KWH, UCH, and PYNEH, a retrospective review of the medical records of all patients with a diagnosis of GBS admitted into ICUs of these three hospitals over a ten-year period (from 01/11/2000 to 30/10/2010) was performed. Twenty seven patients fulfilling the inclusion criteria were enrolled into the study. Demographic, clinical, laboratory, and electrodiagnostic study data, treatment modalities, and APACHE II scores after ICU admission were collected. The primary outcome measures included the complication rates, all-cause 28-day ICU mortality, ICU length of stay (LOS), hospital LOS, and neurological recovery upon discharge from hospital.

Results Of the 27 patients recruited, the mean age was 65.3 years +/- 16.0 and males were slightly predominant (55.6%). Nerve conduction velocity study (NCV) was done in 26 patients: eight had pure demyelinating neuropathy (30.8%), eight had mixed demyelinating and axonal neuropathy (30.8%), six had pure axonal neuropathy (23.1%), and four were normal (15.4%). For the clinical presentation: 21 patients presented with classical GBS, five were diagnosed to be the overlapping syndrome of GBS and Miller-Fisher syndrome (MFS), and one was found to be pharyngeal-cervical-brachial (PCB) variant of GBS by neurologists. The mean APACHE II score was 20.2 +/- 8.7. The median ICU LOS was eight days (1-99), and the median hospital LOS was 27 days (7-257). Concerning treatment modalities:16 patients were treated with intravenous immunoglobulin (IVIg) only (59.2%), nine patients received either IVIg and then plasma exchange (PE), or PE and then IVIg (33.3%) because of poor response to the first therapy, one patient was given PE only (3.7%), and one patient was treated with supportive therapy (3.7%) because of mild impairment. Sixteen patients needed mechanical ventilation (59.3%), and eight of them received tracheostomy (29.6%). Respiratory failure (59.3%), chest infection (55.6%), and autonomic dysfunction (40.7%) were the most common complications encountered in this cohort of patients. Overall, five patients died during ICU stay with the mortality rate of 18.5%, and in the ventilated group the mortality rate was 25%. Of the 22 patients discharged from ICU, their neurological status upon discharge from hospital: three patients walked unaided (13.6%), 16 walked with assistance +/- aid

(72.7%), and three remained bedbound (13.6%). Patients with mechanical ventilation (MV) had longer ICU LOS [24.5 days (2-99) vs 5 days (1-8), p = 0.002], and hospital LOS [36 days (8-257) vs 19 days (7-36), p = 0.005] than those without MV. Patients with MV had higher rates of chest infection (87.5% vs 9.1%, p <0.001) and autonomic dysfunction (62.5% vs 9.1%, p = 0.008) than those without MV. Mechanical ventilated patients with tracheostomy had longer ICU LOS [48.1 days (24-99) vs 8.2 days (2-25), p = 0.001], hospital LOS [112 days (38-257) vs 27.5 days (8-34), p = 0.001], and more ventilator days [47 days (22-198) vs 6 days (1-16), p = 0.001] than those without tracheostomy. A coincidence between peak influenza activity/influenza-like illness (ILI) and the development of GBS was noted in the present study, both occurring in the spring months.

Conclusion The clinical outcome of GBS patients admitted into three regional ICUs is presented. The present cohort of patients belongs to a more severe group with higher mechanical ventilation requirement and mortality, and most of the survivors are left with residual weakness. For the association between influenza activity/ILI and the development of GBS, and that between autonomic dysfunction and the increased risk of mechanical ventilation, no causal relationship can be shown because of the small retrospective study. A prospective multi-centre study may be needed to verify these in the future.

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DRUG REACTION WITH EOSINOPHILIA AND SYSTEMIC SYMPTOMS (DRESS): A RETROSPECTIVE ANALYSIS OF 21 CASES IN A TERTIARY HOSPITAL

Dr Chan Chun Yin Johnny, Department of Medicine, Queen Mary Hospital
(December 2011 Dermatology & Venereology Exit Assessment Exercise)

Introduction Drug reaction with eosinophilia and systemic symptoms (DRESS) is a severe diosyncratic drug-induced reaction, carrying a mortality of 10%. Owing to the rarity of the syndrome, large-scale studies are limited. Local data including the pattern of causative drugs, clinical and biochemical features are lacking.

Objective To investigate the demographic data, clinical, biochemical and histopathological characteristics, causative agents, treatment and outcome of local cases of DRESS syndrome. An attempt was made to identify any correlation among the clinical and biochemical patterns, outcomes and specific causative drugs.

Main Outcome Measures Clinical, biochemical pattern for specific drugs, treatment strategy, outcome and complications of DRESS syndrome.

Method A retrospective, single-centered study on 21 cases of DRESS syndrome diagnosed between January 2007 and June 2011. Demographic data, pattern of causative drugs, clinical course, biochemical characteristics, histopathologic findings, treatment and outcome of all cases were analyzed.

Results Age of patients ranged from 14 to 77, with no sex predilection. Allopurinol was the most common causative drug, followed by aromatic anti-convulsants and cotrimoxazole. Fever, exanthematous rash and eosinophilia were consistently observed (100%). Lichenoid dermatitis was the commonest histopathological findings. Elevated liver parenchymal enzymes were the most common visceral involvement (91%). Allopurinol was associated with a higher incidence of renal involvement in

DRESS syndrome than other drugs (P<0.01). Cotrimoxazole was associated with persistent erythroderma with generalized psoriasiform eruption and might represent a long term cutaneous complication of DRESS syndrome. Bronchiolitis obliterans with organizing pneumonia (BOOP), alopecia totalis and vitiligo were possible autoimmune complications. The mortality rate was 5% in this local study.

Conclusion Early diagnosis and prompt discontinuation of the offending agent are important in the management of DRESS syndrome. Aggressive treatment with corticosteroid is warranted in selected severe cases to minimize morbidity and mortality. Frequent and close monitoring is necessary due to a multitude of complications, high relapse rate and protracted disease course in DRESS syndrome.

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EFFICACY OF INTRALESIONAL 5-FLUOROURACIL IN TREATMENT OF KELOID SCAR: A RANDOMIZED CONTROLLED TRIAL

Dr Wat Yee Mun Mildred, Social Hygiene Services, Department of Health (December 2011 Dermatology & Venereology Exit Assessment Exercise)

Background Up to the current date**,** there is no universally accepted treatment for keloids and there management remains challenging. Intralesional 5-fluorouracil (5-FU) monotherapy had been shown to improve pathologic scars in previous studies, but controlled trials are lacking.

Aim To compare the efficacies of intralesional 5-FU monotherapy to intralesional triamcinolone acetate (TAC) in treatment of keloid scars

Design Randomized, single-blinded, prospective controlled trial

Methods Eligible patients were randomized to receive either weekly intralesional 5-FU of 50mg/ml or weekly intralesional TAC of 10mg/ml for a total of 12 weeks. Scars volumes and patients' and observers' subjective evaluation were assessed using validated Patient and Observer Scar Assessment Score (POSAS) at weeks 4, 8 and 12.

Results Twenty-six patients completed the 12-week intervention and were randomized equally to both groups. Fifty-four percent in 5-FU group and 77% in TAC group showed more than 50% volume reduction at week 12 (p=0.411). A statistical significant volume reduction from baseline was noted in both 5-FU (mean 53.1%, p=0.001) and TAC group (mean 63.7%, p=0.001) at week 12, which was comparable between both groups. POSAS scoring also demonstrated significant improvement from baseline in both groups. No ulceration or systemic side effects associated with 5-FU except hyperpigmentation, but there was slightly more telangiectasia, atrophy and hypopigmentation with TAC injections.

Conclusions This study demonstrated that intralesional 5-FU monotherapy is an effective and safe treatment for keloid scars, and its effect is comparable to TAC. However, its efficacy as monotherapy is limited and further studies on combination therapy are warranted.

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CUTANEOUS MANIFESTATIONS IN RENAL TRANSPLANT RECIPIENTS IN A REGIONAL HOSPITAL IN HONG KONG

Dr Wong Lai Ping, Social Hygiene Services, Department of Health (December 2011 Dermatology & Venereology Exit Assessment Exercise)

Background After renal transplantation, it is observed that renal transplant recipients (RTR) will have a higher chance to develop various kinds of skin diseases. This is the first study on the cutaneous manifestations in RTR in Hong Kong Chinese.

Objectives
1: Study the clinical spectrum and prevalence of skin diseases in RTR in Hong Kong
2: Study the relationship between prevalence of skin diseases and time from renal transplantation in RTR
3: Study the relationship between age and sex on the prevalence of skin diseases in RTR
4: Comparison of skin disease spectrum between RTR in Hong Kong and studies in other countries

Method RTR who were ≥18 years old with functional allograft and on immunosuppressive therapy were recruited from a regional hospital in Hong Kong. Age- and sex-matched subjects who had no renal transplant and not on immunosuppressants were recruited as controls. Dermatological examination was performed for 98 RTR and 98 controls.

Results 90 (91.8%) of RTR had one or more than one type of skin lesions detected: 64 (65.3%) had skin infections, 1 (1.0%) had pre-malignant or malignant skin condition, and 67 (68.4%) had non-infective, non-malignant drug-related manifestations. Compared to controls, RTR had higher prevalence of one or more than one type of skin diseases. More RTR developed skin infections and non-infective, non-malignant drug-related cutaneous manifestations than controls.

RTR with transplantation of less than 12 months were more prone to acneiform eruption than RTR with transplantation of more than 12 months.
RTR with transplantation of more than 12 months were more prone to skin infections than RTR with transplantation less than 12 months.

Older RTR were more prone to have warts. Younger RTR were more prone to have acneiform eruption and Cushingoid features.

Male RTR were more prone to develop dermatophytoses, folliculitis, acneiform eruption and sebaceous hyperplasia. Female RTR were more prone to develop hypertrichosis and gingival hyperplasia.

Conclusion RTR in Hong Kong were prone to skin infections and non-infectious, non-malignant drug-related cutaneous manifestations.

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CROSS-SECTIONAL STUDY: THE PREVALENCE OF VITAMIN D DEFICIENCY AND LOW BONE MASS IN PATIENTS ON ANTIEPILEPTIC DRUGS FOR EPILEPSY FROM A LOCAL NEUROLOGY CLINIC
Dr Fok Man Chun Juliana, Department of Medicine & Geriatrics, Kwong Wah Hospital (November 2011 Endocrinology, Diabetes & Metabolism Exit Assessment Exercise)

Background Patients with epilepsy have been found to be at a higher risk of bone disease, including fractures, compared with general population. Chronic antiepileptic drug use may contribute to this risk. Some of the common drugs for epilepsy are potent inducers of hepatic microsomal enzymes leading to abnormal vitamin D metabolism, which is considered one of the chief mechanisms of antiepileptic drug- induced bone disease.

Objectives The aim of this dissertation is to evaluate the prevalence of vitamin D deficiency and low bone mass in patients on antiepileptic drugs for epilepsy from a local neurology clinic, and to determine the predicting factors for vitamin D deficiency and low bone mass in this population.

Setting Neurology Clinic at a district general hospital within Kowloon West Cluster

Design A cross-sectional study of 61 patients on antiepileptic medication for epilepsy from a local neurology clinic. Assessment of calcium intake, sun exposure score, vitamin D status and bone mineral density (BMD) were performed for the subjects.

Results Forty-five (75%) patients out of 60 were vitamin D deficient (25-hydroxyvitamin D $\leq$ 50nmol/L). Mean level of 25-hydroxyvitamin D level (25-OHD) was significantly lower in women (36.5±12.9 nmol/L versus 49.1±18.8 nmol/L in men, p=0.011). Thirty-one out of 53 (58.5%) subjects had osteopenia at any one of the three sites (total hip, femoral neck or lumbar spine) measured but no patient had osteoporosis, according to World Health Organsiation (WHO) criteria. However, there was no association between low bone mass and 25-OHD level. Compared with non-enzyme inducing drug user, chronic enzyme-inducing antiepileptic drug use in young ambulatory men was associated with lower 25-OHD level (43.8±14.7nmol/L versus 61.1±21.9nmol/L, p=0.02) and lower BMD, particularly over the total hip (0.91±0.09 g/cm^2 versus 1.01±0.09 g/cm^2, p=0.03).

Conclusion Vitamin D deficiency is prevalent amongst young Chinese, particularly female, who are put on long term AED therapy. Chronic enzyme-inducing antiepileptic drug use is associated with lower 25-OHD level and BMD in young men.

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RETROSPECTIVE EVALUATION OF A POST-DISCHARGE SUPPORT PROGRAMME IN ELDERLY PATIENTS WITH CONGESTIVE HEART FAILURE AT HIGH RISK OF HOSPITAL READMISSION

Dr Ho Ping Cheong, Department of Medicine and Geriatrics, United Christian Hospital (December 2011 Geriatric Medicine Exit Assessment Exercise)

Objective To evaluate the effectiveness of an integrated discharge support programme on outcomes of health care utilization in heart failure elderly patients at high risk of hospital readmission.

Methods This is a retrospective concurrent matched cohort study of patients admitted with a principal diagnosis of congestive heart failure to a regional hospital in Hong Kong between March and September 2008. The intervention involved pre-discharge planning in hospital, post-discharge telephone follow-up and home visits by designated nurses, early clinic follow up by a senior geriatrician, and psycho-social support to patients and their carers. Home support services were

provided on a need basis by a designated team. Each intervention patient was matched with a control with sex, age within 5 years and High Admission Risk Reduction Programme for the Elderly (HARRPE) score. Outcome measures are unplanned readmissions, length of hospital stay, emergency department attendance, clinic visits, and mortality and institutionalization rate within 6 month of index discharge.

Results The study recruited 87 patients in each of the intervention and control groups. The mean age of the study patients was 82.6±6.24 years, 52% were women. The mean HARRPE score was 3.27±1.74. By 6 months after enrollment, fewer IDSP patients were readmitted (absolute reduction 16.1% in 1 month, p=0.026; 25.3% in 3 months, p=0.000; and 20.7% in 6 months, p=0.000). Fewer IDSP patients had multiple admissions (41.4% vs 65.5%, p=0.001). Admission for CHF was less frequent in the IDSP group (admission per patient 0.85±0.97, vs 1.13±0.89, p=0.007). The IDSP group had shorter length of hospital stay (1163 vs 1520 days, p=0.011). There were fewer hospital days in convalescent hospitals in the intervention group (p=0.007). More patients in the control group had emergency department attendance (223 vs 168 visits, p=0.001) but clinic visits were significantly more frequent in the intervention group (p<0.001). There was no significant difference in mortality and admission to nursing home.

Conclusions This study demonstrates that a geriatrician directed, multidisciplinary post-discharge support programme significantly reduced readmissions, emergence department visits, and shortened length of hospital stay in elderly heart failure patients at high risk for readmission.

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SEPTICEMIA IN ELDERLY - ETIOLOGY, MICROBIOLOGY AND MORTALITY

Dr Liu Yui Kai, Department of Medicine and Geriatric, Kwong Wah Hospital
(December 2011 Geriatric Medicine Exit Assessment Exercise)

Septicemia is a serious, life-threatening condition with the presence of bacteria in blood. It is an important cause of morbidity and mortality, especially in the elderly population.

Various factors, such as the type of microorganism, age, the underlying disease and where the septicemia was acquired, are related to the prognosis of this condition.

A consecutive series of 176 patients aged >/ than 65 years admitted to the department of medicine and geriatric of Kwong Wah hospital from 1st Jan to 30th June 2010 with positive blood culture results were studied retrospectively.

After excluding 42 contaminants, there were 136 episodes of septicemia for analysis. 85 (65%) came from community while the remaining 46 (36%) were from nursing homes.

Median age of the patients was 80 (interquartile range 67 to 93).

133 episodes of septicemia were community acquired while the remaining 3 were osocomial septicemia. 12 out of 131 of the patients were afebrile on presentation while 31 presented with fever alone.

Gram negative bacteria accounted for 64% of the septicemic episodes while gram positive bacteria accounted for 30%.

The most frequent gram negative isolates were Escherichia coli (n=68) and Klebsiella pneumonia (n= 16) while the most frequent gram positive organisms were tapylococcus aureus (n=6) and MRSA (n=6).

The main infectious focus was urinary tract (n=65, 44.8%, followed by abdomen and soft tissues.

High percentage of antibiotic resistant bacteria was noted with a total of 28 cases of ESBL strain infection (E Coli 24, Klebsiella 4) & 6 cases of MRSA.

The mortality rate was 17.6 % (n=23). (words 254)

**Bacteremia is not equivalent to septicemia whereas bacteremia means presence of bacteremia in blood while septicemia is a condition resulting from the deleterious effects of bacteremia. This study is on septicemia where both blood cultures results and clinical conditions are taken into consideration. Some of the reference studies or statistics used bacteremia as eqivalent to septicemia when interpreted in the context of the text.

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CORRELATION OF GENOTYPIC AND PHENOTYPIC FEATURES OF HAEMOGLOBIN H DISEASE IN HONG KONG CHINESE

Dr Chan Hoi Yan, Department of Medicine, Pamela Youde Nethersole Eastern Hospital (November 2011 Haematology and Haematological Oncology Exit Assessment Exercise)

Background The alpha thalassaemias are one of the most common inherited disorders of haemoglobin (Hb) synthesis in Southeast Asia. Deletions or mutations of three of the four alpha globin genes located on chromosome 16 give rise to Hb H disease, an intermediate clinical form of alpha thalassaemia. Hb H disease shows a wide spectrum of clinical phenotypes, ranging from asymptomatic to transfusion-dependent anaemia. The clinical variability is contributed by the wide genetic heterogeneity as well as environmental factors. We studied the clinical features and the α-globin gene abnormalities in Hong Kong Chinese patients with Hb H disease, and the genotype-phenotype correlation as well as the effects of iron overload in these patients.

Methods The clinicopathological features including haematological parameters, serum ferritin levels, liver function and endocrine functions of adult Chinese patients with Hb H disease were studied in a single hospital in Hong Kong from January 1995 to July 2010. Genotypic analysis of the two pair of α-globin genes was performed. Cardiac/liver magnetic resonance imaging studies were performed in a subset of patients enrolled in oral chelator therapy study.

Results Hb H disease in 82 of the 95 patients (86%) was due to the deletional type and 13 patients (14%) had the non-deletional type. All patients with deletional type were compound heterozygous for two α-globin gene deletion of the Southeast Asia

type and a single α-globin gene deletion on the other chromosome: -3.7-kb rightward deletion (64%), and 4.2-kb leftward deletion (21%). In patients with non-deletional type of Hb H disease, the Quong Sze variant accounted for the majority, followed by hemoglobin Constant Spring. The present study demonstrated correlation between genotype and phenotype of Hb H disease in Chinese. Patients with the non-deletional type of Hb H disease had more severe anaemia, larger spleen size, higher serum ferritin levels and were more likely to require transfusions. Raised serum ferritin and the presence of hepatic iron overload were common among adult Hb H patients who were not transfusion dependent. Age, transfusion and genotype are among the factors that affect iron overload in these patients.

Conclusions In Chinese patients with HbH disease, most have relatively mild anaemia and do not require regular transfusion. The majority of patients have the deletional type of disease and they have milder clinical phenotype than those with the non-deletional type.

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PRIMARY IMMUNE THROMBOCYTOPENIA IN ADULT PATIENTS: EXPERIENCE OF TUEN MUN HOSPITAL FROM 2001 TO 2011

Dr Lai Ho Kei, Department of Medicine & Geriatrics, Tuen Mun Hospital (November 2011 Haematology and Haematological Oncology Exit Assessment Exercise)

Background Primary immune thrombocytopenia, also known as idiopathic thrombocytopenic purpura (ITP), is a common cause for thrombocytopenia. Patients with ITP are at increased risk of bleeding. Some may develop a secondary condition such as connective tissue disease. There are few local reports on patients with ITP.

Objectives To review the demographics, clinical and laboratory characteristics, therapy response, disease- and therapy-related complications and long-term outcomes of local patients with ITP.

Methods This is a retrospective study. Adult patients diagnosed to have ITP between 2001 and 2011 at the Special Hematology clinic of Tuen Mun Hospital were reviewed. The study also included patients who had known history of ITP diagnosed by other experts and was referred to the clinic during the study period. Patients' medical records were retrospectively reviewed.

Results One hundred and sixty-five patients were included in the study. The median age of patients at diagnosis was 42.5 years. Female-to-male ratio was 3:1. The patients had severe thrombocytopenia, with the median platelet count at diagnosis being 8 x 10^9/L (range: 1 – 96). The median follow-up duration was 27.4 months. One hundred and twenty-six patients received initial corticosteroid therapy, with complete response (CR) rate and post-CR relapse rate being 46.8% (59/126) and 27.1% (16/59), respectively. Non-responders (refractory or steroid dependent) and patients with relapse were observed or treated with additional therapy, such as splenectomy or rituximab. Twenty-seven patients underwent splenectomy, with CR and post-CR relapse rates being 70.4% (19/27) and 5.3% (1/19), respectively. Eleven patients received rituximab, with CR and post-CR relapse rates being 45.5% (5/11) and 40% (2/5), respectively. Eleven (21.2%) of 52 patients tested for Helicobacter pylori were positive. Among nine patients who had confirmed successful H. pylori eradication, two (2/9 or 22.2%) patients had CR for ITP. Among patients whom

outcomes were known at the end of data collection (n=123), 39.0% were in CR, 40.7% remained in chronic phase of ITP, 12.2% had developed a secondary diagnosis (most commonly SLE or lupus-like disease), 4.9% died of ITP-related causes (all were therapy-related infections) and 3.3% died of unrelated causes.

Conclusion Local patients with ITP had a relatively benign disease course. Only selected patients should be treated. Treatment options included corticosteroid, rituximab, H. pylori eradication and splenectomy. For patients with symptomatic chronic ITP not responding to these treatments, novel thrombopoietin receptor agonists may be considered.

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REVIEW OF TARGETED THERAPY IN ADVANCED ADENOCARCINOMA OF LUNG AND MAPPING OF EPIDERMAL GROWTH FACTOR RECEPTOR MUTATIONS IN ADENOCARCINOMA

Dr Lam Yim Kwan, Department of Medicine and Geriatrics, United Christian Hospital
(December 2011 Medical Oncology Exit Assessment Exercise)

Background Lung cancer remains one of the most fatal malignancies. Recent development in cancer genomics and molecular targeted therapy leads to a paradigm shift in management of advanced stage non-small cell lung cancer. EGFR TKI such as gefitinib has been established as a standard therapy for lung cancer patient harboring activated EGFR mutations. Tumor response is over 70% and median time to progression is significantly prolonged. However, almost all patients eventually develop resistance (median time to progression of 10 to 14 months) and EGFR exon 20 T790M mutation was found in about 50% of tumors with clinical "acquired resistance". De novo T790M mutation has also been detected in tumors from patients with no prior exposure to EGFR TKI. They responded favorably to TKI in co-existence of activating EGFR mutation at exon 19/21. Heterogeneous distribution of EGFR mutations has been suggested as one of the causes of resistance to EGFR tyrosine kinase inhibitors (EGFR TKIs). However, this hypothesis remains to be confirmed.

Objectives We investigate the distribution and heterogenicity of activating *EGFR* mutations in patients with resectable lung cancer and determine if exon 20 T790M mutation is pre-existing in treatment naïve patients.

Hypothesis We hypothesize that cancer cells harboring exon 20 T790M coexist in small quantity with cancer cells harboring activating EGFR mutation (exon 19 and 21) within a tumor prior to therapy. EGFR TKI inhibits cancers with activating EGFR mutation, and eventually, tumor cells harboring exon 20 T790M become dominant and resistant to EGFR TKI.

Method Asian, non-smoking, treatment naïve patients with resectable adenocarcinoma of lung are identified preoperatively. If the tumor is confirmed to harbour activating EGFR mutation, the entire tumor specimen will be cut into smaller blocks. DNA of each block will be extracted and tested independently for activating EGFR mutations and exon 20 T790M mutation by direct sequencing, hybridization probes or peptide nucleic acid-locked nucleic acid (PNA-LNP) clamp methods.

Results Total of eleven Chinese patients with adenocarcinoma of lung harboring EGFR mutations were enrolled. Eight samples were from female patients and three

from male patients. Median age was 61 years old (range 54-61). All patients had good performance status. Five patients (45%) had disease stage 1 diseases, two (18%) stage II, two (18%) stage III and one (9%) stage IV. Majority of patients received lobectomy. Eight patients had L858R mutations, one had exon 19 deletion and two had exon 20 insertions. One tumor sample with L858R mutation was dissected into 71 blocks and coexisting wild type EGFR were found in 6 blocks by direct sequencing and hybridization probe. T790M EGFR mutations were all negative in 71 blocks. The results of different detection methods including direct sequencing, PNA LNA clamp and hybridization probes were highly concordant (100%) in all tumor blocks.
In the trans-sectional tumor blocks in seven samples, multiple blocks of individual tumor were mapped for their *EGFR* mutation status by direct sequencing. The results suggested homogeneity of activated EGFR mutation exon 19/21 within a pulmonary adenocarcinoma. This study showed co-existence of resistant mutation (exon 20 T790M) with activating EGFR mutation (exon 19/21) in three cases.

Conclusion Pulmonary adenocarcinoma is heterogenous and may harbour both activating and wild type EGFR mutation. Resistant EGFR mutation exon 20 T790M is present in small portion of tumors with activating EGFR mutation prior to exposure to EGFR TKI. The above information will aid to formulate future strategy on management of acquired resistance to EGFR TKI.

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TIMING OF INITIATION OF PERITONEAL DIALYSIS AND MORTALITY IN A LOCAL HOSPITAL

Dr Lau Wai Yan, Department of Medicine, Alice Ho Miu Ling Nethersole Hospital
(December 2011 Nephrology Exit Assessment Exercise)

Background/Aims Optimal timing of initiation of peritoneal dialysis (PD) remains controversial. This retrospective study attempts to determine the relationship between time of initiation of dialysis and mortality. Other end-points include percentage reduction of residual renal function, anaemic control and hospitalization rate.
Methods Patients received PD during 1 Jan 2003 – 31 Dec 2005 were divided into 'high clearance' and 'low clearance' group according to their creatinine clearance level before start of PD.

Results Total 194 adult patients were studied. The baseline mean creatinine clearance in the 'high clearance' and 'low clearance' group were 10.00 ± 2.09 mL/min and 4.46 ± 1.60 mL/min respectively ($p<0.0001$). The 1-year survival was 94.9% in both groups. The 3-year and 5-year survivals in 'high clearance' group were 80.4% and 60.8% respectively, while in the 'low clearance' group were 73.2% and 56.7% respectively ($p=0.242$ and $p=0.417$). Significantly fewer patients in the 'high clearance' group required temporary haemodialysis support ($p=0.002$) and intermittent PD support ($p<0.0001$) before start of home-based PD. The duration of the temporary in-center dialysis support was also significantly shorter in the 'high clearance' group ($p=0.032$). Moreover, significantly fewer patients in the 'high clearance' group required hospitalization ($p=0.040$) and the residual renal function was better preserved in the 'high clearance' group in the first year ($p=0.036$). No difference between groups was observed for anaemic control.

Conclusions Our results suggest early start of dialysis associated with better morbidity in first year but no significant impact on survival. Larger studies are

warranted to confirm the findings.

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CORTICOSTEROIDS TREATMENT IN PERITONEAL DIALYSIS PATIENTS AT RISK OF DEVELOPING ENCAPSULATING PERITONEAL SCLEROSIS AFTER DIALYSIS CATHETER REMOVAL

Dr Wong Yuk Yi, Department of Medicine & Geriatrics, Kwong Wah Hospital
(December 2011 Nephrology Exit Assessment Exercise)

Background Persistent intra-abdominal collection and inflammation are common in peritoneal dialysis (PD) patients after Tenckhoff (TK) catheter removal for refractory peritonitis. These patients are at increased risk for encapsulating peritoneal sclerosis (EPS). We aim to identify the risk factors for the condition, and clinical outcome in response to corticosteroids treatment.

Method We retrospectively reviewed 39 patients who had persistent sterile intra-abdominal collections and elevated inflammatory markers after 3 weeks of TK catheter removal for refractory peritonitis in our centre from January 2005 to December 2011. Twenty-three similar patients served as controls when they did not have intra-abdominal collections nor features of inflammation.

Results Of the 151 TK catheters removed during the above period, 87 were due to refractory peritonitis. Twenty patients who had early mortality due to uncontrolled intra-abdominal sepsis were excluded from the study. Thirty-nine patients had persistent intra-abdominal collections and inflammation were regarded as "high risk" for the development of EPS, with 22 patients treated with corticosteroids. Duration of PD (71.56 ± 43.27 vs. 42.30 ± 29.87 months, p= 0.03) and dialysate / plasma serum creatinine ratio (0.768 ± 0.141 vs. 0.616 ± 0.091, p= 0.004) were significant risk factors for the development of "high risk" conditions, where a significantly higher 6-point CT score (7.69 ± 2.98 vs. 1.00 ± 1.00, p<0.001) was observed. The "high risk" group has poorer survival when compared with the control group (164.5 ± 37.0 vs. 178.0 ± 9.4 days, 95% CI -26.08, -0.98, p=0.035). An improvement in 6 months mortality (18% vs. 59%, p=0.038) was observed with corticosteroid treatment.

Conclusion Persistent intra-abdominal collection and inflammation after TK catheter removal were associated with an increased mortality, which might represent an early form of EPS. CT scan was a useful tool in the diagnosis of the condition. Corticosteroids may be useful to abort the progression to EPS.

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OUTCOMES OF MILD OR IMPROVING ACUTE ISCHEMIC STROKE WITH OR WITHOUT INTRAVENOUS THROMBOLYSIS

Dr Chan Lung Tat Andrew, Department of Medicine, Queen Elizabeth Hospital
(November 2011 Neurology Exit Assessment Exercise)

Background Mild or improving acute ischemic stroke (MIAIS) patients who present to an emergency department within three hours are commonly excluded from the use of intravenous (IV) tissue plasminogen activator (TPA). They present a therapeutic dilemma as variable outcomes are noted in previous studies. Yet, a significant proportion of these patients either remains dependent at hospital discharge or dies during hospital admission. Despite TPA service has been established for a

few years in Hong Kong, little is known about the outcomes of MIAIS patients in Hong Kong. As the underlying stroke pathogenesis of local patients may be different from the Caucasian cohort, local data may serve as a reference for decision making process.

Objective To analyze the outcomes of MIAIS patients who presented within 3 hours of symptom onset.

Methods A retrospective descriptive study using the TPA activation registry of the Emergency Department of a regional hospital during the period from December 2008 to November 2010 was performed.

Results There were altogether 209 patients in the registry. Fifty-five (40.7%) out of 135 acute ischemic stroke patients received IV TPA. Eighty patients were ineligible and half of them were patients with MIAIS. Data of 44 patients with NIHSS score $\leq$5 were analyzed. About one-quarter of the 37 non-TPA patients had unfavorable outcome (mRS$\geq$2) at 3 months and 16% of them could not be discharged home directly. One out of the 7 TPA-treated patients was complicated by symptomatic intracranial hemorrhage according to the ECASS-3 definition.

Conclusions The use of IV TPA in patients with MIAIS is unsupported based on the current study and literature review. However, as a significant proportion of these patients ended up with unfavorable outcomes. More studies are needed to stratify their risks and to substantiate the use of IV TPA in order to further reduce the stroke-related disability in Hong Kong.

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PREDICTION OF CLINICAL OUTCOMES IN SPONTANEOUS INTRACRANIAL HAEMORRHAGE OF BASAL GANGLIA BY DIFFUSION TENSOR IMAGING

Dr Chan Yin Cheung Phillip, Department of Medicine, Queen Elizabeth Hospital
(November 2011 Neurology Exit Assessment Exercise)

Background Basal ganglia is one of the commonest sites of spontaneous intracranial haemorrhage. However, the degree of motor recovery of these patients varies considerably, from ongoing paralysis to rapid improvement to normal motor power within days. The possible explanation for this observation is the degree of motor fibers tract damage on the capsular motor fibers secondary to the haematoma. For those who have complete disruption of motor fibre tract, they will carry a worse prognosis. On the other hand, if the motor tract is just displaced by the haematoma, patients will usually enjoy a satisfactory recovery.

Diffusion tensor imaging (DTI), an emerging technique in magnetic resonance imaging, has shown its capacity to demonstrate the integrity of various fibre tracts including corticospinal tract. Recent studies have reported its ability to predict the motor outcome in stroke patients in the very early stage by using the fractional anisotropy (FA) ratio (rFA=FA affected side/unaffected side). We performed DTI in 9 patients with basal ganglia haemorrhage admitted to Queen Elizabeth Hospital within 72 hours after the onset. We measured the rFA values at basal ganglia, cerebral peduncle and pontine levels and assessed their correlation with subsequent motor and functional outcomes.

Results We demonstrated a significant correlation between baseline rFA at the basal ganglia (BG) level and paresis grading at 3 months. However, we were unable to show any statistically significant correlation between rFA and motor outcomes at the other two levels. It was likely related to small sample size of patients. We also demonstrated that patients who had rFA > 0.8 would enjoy good motor and functional outcomes, which was in line with the findings of other literatures.

Conclusion DTI is valuable in predicting good motor outcome. However, from a pragmatic point of view, a prognostic tool with high negative predictive value will be even more valuable as it can help stratifying patients into different target groups with different goals of rehabilitation. Further studies are required to assess the superiority of negative prediction on motor and functional outcomes over other measures like clinical assessment and electrophysiological studies.

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IS IT JUSTIFIED TO PERFORM INTRAOPERATIVE NEUROPHYSIOLOGICAL MONITORING OF CAROTID ENDARTERECTOMIES?

Dr Lo Wai Ting Joyce, Department of Medicine, Queen Elizabeth Hospital
(November 2011 Neurology Exit Assessment Exercise)

Carotid endarterectomy reduces the risk of recurrent stroke in symptomatic and asymptomatic patients with haemodynamically significant carotid stenosis when compared to medical treatment, but the benefit is dependent on a low perioperative stroke and mortality rate. The use of intraoperative monitoring aims to decrease the incident of perioperative stroke by detecting hypoperfusion during operation, and guide decision on the need for shunt placement to reduce the risk of cerebral ischaemia. But it is also resource demanding.

Methods of intraoperative monitoring include the use of transcranial Doppler (TCD) to monitor middle cerebral artery blood flow velocities, electroencephalography (EEG), stump pressure measurement, somatosensory evoked potentials, and clinically monitoring for changes in mental status if the operation is performed under local anaesthesia.

This is a review of our experience with intraoperative monitoring in the 52 carotid endarterectomies performed in our hospital since the start of the service from the year 1997 to June 2011, 37 with both EEG and TCD monitoring, and 15 with EEG monitoring only. The decision for shunt insertion is guided by both the EEG and TCD monitoring results. The perioperative outcome of these patients will be presented. Three patients (5.8%) had significant intraoperative EEG / TCD changes which resulted in change of the practice of the surgeons, with no perioperative stroke developed. Two patients suffered from immediate postoperative stroke which were not massive perfusion related stroke ipsilateral to the clamped ICA. This review will also include a discussion on the current opinion on the utility and drawbacks of different monitoring methods, and other options to decrease the risk of perioperative stroke.

We conclude that it is justified for intraoperative monitoring to be done in our hospital to decrease the risk of stroke for carotid endarterectomies performed under general anaesthesia, since it is shown to be useful to prevent perioperative stroke due to haemodynamic insufficiency from clamping of the carotid artery during surgery.

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PREVALENCE OF HOPELESSNESS AND ITS CLINICAL CORRELATES AMONGST CHINESE PATIENTS WITH ADVANCED CANCERS: CROSS SECTIONAL STUDY IN A PALLIATIVE CARE UNIT

Dr Li Cho Wing, Palliative Medical Unit, Grantham Hospital (December 2011 Palliative Medicine Exit Assessment Exercise)

Study Design The study adopted a cross-sectional study design. Consecutive sample of Chinese patients with advanced cancers admitting to Grantham Hospital Palliative Medical Unit were recruited from September 2010 to December 2010. The primary outcome, level of hopelessness, was measured by the Chinese version of Beck Hopelessness Scale (BHS). Symptoms and their severity were recorded. Psychiatric co-morbidities including depression and anxiety were measured by the Hospital Anxiety and Depression Scale.

Results The mean score of Beck Hopelessness Scale was 8.89 (N=44, SD = 5.63). 25% (N=11) and 18.2% (N=8) of patients had moderate level and severe level of hopelessness respectively. BHS was significantly positively correlated with depressive mood (r=0.396 , p=0.008), anxiety mood. (r=0.493, p=0.003), poor appetite (r=0.348, p=0.021), sense of poor wellbeing (r=0.424, p=0.004) and shortness of breath (0.542, $p<0.001$).

Conclusion Patients with advanced cancer who were referred for palliative care had high level of hopelessness. Depression, anxiety, poor appetite and breathlessness were significantly associated with high level of hopelessness. We should pay more attention to patients who displayed these physical and psychological symptoms. Further psycho-spiritual intervention should be developed.

Implications This study aims to determine the prevalence of hopelessness amongst Hong Kong Chinese cancer patients referred for in-patient palliative care, and to determine clinical factors that are associated with hopelessness. This may help identify risk factors of high level of hopelessness. This will also form a baseline for further development of hope-based psychological care programs for our patients.

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SLEEP DISTURBANCE IN CHINESE PALLIATIVE CARE PATIENTS AND ITS IMPACT ON QUALITY OF LIFE

Dr Mok Ka Wai Alice, Department of Medicine & Geriatrics, Shatin Hospital (December 2011 Palliative Medicine Exit Assessment Exercise)

Background Sleep disturbance is a common distress faced by patients with advanced cancers. Current understanding of this problem in hospitalized patients within the local setting is limited.

Objective This study aims to evaluate the prevalence and severity of insomnia in advanced cancer patients being admitted to a palliative unit. Factors correlated with insomnia and the associations of insomnia with the quality of life in these patients are also investigated.

Method A consecutive sample of patients admitted to a palliative unit were

approached for consent to the study. Patients were interviewed to complete the Pittsburgh Sleep Quality Index (PSQI), the Hospital Anxiety and Depression Scale (HADS), and the McGill Quality of Life Questionnaire – Hong Kong (MQOL-HK). Physical symptoms were assessed using Support Team Assessment Schedule (STAS). Other clinical and sociodemographic background information were retrieved from medical records. Patients with PSQI ≥ 5 were considered to be suffering from poor sleep quality.

Results 80 patients were recruited into the study. The mean PSQI was 8.38 (± 5.58). 65% of the sample was suffering from poor sleep. Sleep quality correlated significantly with physical symptoms of fatigue (p=0.002), nausea (p=0.044) and vomiting (p=0.024) as well as psychological components of anxiety (p=0.013) and depression (p=0.002 with HADS; p=0.000 with GDS). Among all the associated factors, depression was shown to be the most significant contributing factor to insomnia. Significant associations were found between sleep quality and the overall quality of life. The physical (p=0.006) and the existential (p=0.003) domains of the quality of life measures showed the strongest correlation with sleep quality.

Conclusion This study confirms that insomnia is a significant condition among hospitalized patients with advanced cancers. The results underscore the importance of assessment to detect sleep problems especially when correlated conditions are identified. It is imperative to manage insomnia aggressively with the aim to improve the quality of life in these patients.

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A PILOT RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY OF PHENOL, BOTULINUM TOXIN TYPE A INJECTION AND GAIT TRAINING IN POST STROKE REHABILITATION

Dr Leung Ching Man, Department of Medicine, Tung Wah Hospital (December 2011 Rehabilitation Exit Assessment Exercise)

Background and objective Published studies had shown that treatment with botulinum toxin type A or phenol reduced spasticity in the lower limbs in stroke patients but they had not convincingly demonstrated the ability to enhance function. This study aimed to determine whether the treatment of spasticity by phenol and/or botulinum toxin type A injection could enhance the training effect obtained from gait training in chronic stroke patients with motor function limited by spasticity.

Method This was a pilot randomized, double-blind, placebo-controlled study. 12 patients with stroke for at least more than six months having persistent lower limb spasticity were recruited. They were randomly assigned into two groups: 1) Treatment group: phenol motor point block and/or botulinum toxin type A injection; 2) Placebo group: normal saline injection; both followed by 8 weeks of gait training. Outcome measures included 1) Gait velocity, 2) Modified Rivermead Mobility Index, 3) 6 Minute Walk Test, 4) Berg's Balance Scale, 5) Modified Functional Ambulatory Category, 6) spasticity measurement for the most affected joint in lower limbs: the modified Modified Ashworth Scale. These were measured at baseline and 2 months.

Results There was statistically significant improvement in gait velocity within the treatment group from 1.5 km/h (interquartile range: 1.05-2.23 km/h) at baseline to 1.95 km/h (interquartile range: 1.38-2.48km/h) at 2 months (p=0.046). However there

were no significant differences between the treatment and placebo groups in gait velocity and other outcome measures.

Conclusions Participants who received 8 weeks of gait training after treatment of spasticity with phenol motor point block and/or botulinum toxin type A injection showed statistically significant improvement in gait velocity. Further researches using larger sample size were warranted to achieve a more confident conclusion about this combined method of rehabilitation in chronic stroke patients.

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EFFECT OF SOMATOSENSORY STIMULATION IN UPPER LIMB MOTOR FUNCTION IN PATIENTS WITH STROKE: A PILOT STUDY

Dr Tam Pui Kit, Department of Medicine, Fung Yiu King Hospital (December 2011 Rehabilitation Exit Assessment Exercise)

Background Somatosensory stimulation refers to use of electrical stimulation below motor threshold in neurorehabilitation setting mainly for promoting motor recovery in patients with neurological disease. Several clinical trials showed that a single 2-hour session of peripheral nerve stimulation (PNS) could improve pinch strength and function of the upper limb in post-stroke patients.

Objective To test whether (1) delivering PNS by portable neurostimulator normally used for transcutaneous electrical nerve stimulation (TENS) and (2) PNS following the protocol used in the published literature could improve pinch strength and function of the affected upper limb in post-stroke patients.
Design: Pilot study with randomized-controlled design

Method 18 patients with subacute stroke were randomly assigned into three groups (n=6 in each group). Each received a single 2 hour session of PNS to the median and ulnar nerve of the affected upper limb. Group A received PNS by portable TENS device (TENS-PNS). Group B received stimulation following published protocol ("conventional PNS"/C-PNS). Group C received sham stimulation (control). Pinch strength, grip strength, Jebsen-Taylor Hand Function Test (JTHFT) and Modified Asworth Scale (MAS) of the elbow and wrist of the affected hand were measured before and after the simulation.

Results Median age of the subjects was 77 years (interquartile range 63-81) and the median time since stroke onset was 36 days (25-75% interquartile range 24-40). Pinch strength increased after stimulation in the TENS-PNS group while that for both C-PNS and control group decreased, and post-hoc Mann-Whitney-Wilcoxon test showed the difference in change of pinch strength was statistically significant when comparing TENS-PNS with C-PNS and with control group (p value 0.045 and 0.036 respectively). There was no statistically significant difference among the three groups concerning grip strength and JTHFT. None of the subjects had significant spasticity before and after stimulation.

Conclusion Peripheral nerve stimulation using portable neurostimulator might improve pinch strength of the affected hand in patients with subacute stroke. Further studies using larger sample size is required to confirm the effect of this modality.

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REVISIT THE INVESTIGATION OF PLEURAL EFFUSION USING LIGHT'S CRITERIA IN A REGIONAL HOSPITAL

Dr Choy Chi Fung, Department of Medicine, Tseung Kwan O Hospital (December 2011 Respiratory Medicine Exit Assessment Exercise)

Background Pleural effusion is a common clinical condition. Light's criteria are frequently employed for distinction of pleural exudates from transudates. This study was carried out to determine the accuracy of Light's criteria. Further analysis of its components was carried out in search of the best single criterion for identification of pleural exudates.

Method A 3-year retrospective study was carried out in a regional public hospital. All adult patients with thoracocentesis performed in the study period were recruited consecutively. After applying exclusion criteria, detailed review was performed on the clinical records of the resulting 336 patients. Accuracy, sensitivity, specificity, likelihood ratios, positive and negative predictive values of Light's criteria and other possible parameters were calculated and compared. Receiver Operator Characteristic curves were constructed for individual parameters for the best single criterion for differentiation.

Results The accuracy of Light's criteria was 90.2%, with sensitivity and specificity of 97.6% and 67.9% respectively. With more components of Light's criteria were fulfilled, the chance of getting correct prediction for exudates becomes higher. Tuberculous and parapneumonic effusion rarely presented with transudative effusion by Light's criteria. As a single criterion for categorization, pleural fluid lactate dehydrogenase level is the best parameter with high sensitivity and accuracy. Comparing with fluid lactate dehydrogenase, Light's criteria were less specific but more sensitive.

Conclusion Light's criteria are the most sensitive method in differentiating pleural effusion, and are superior to currently available diagnostic tests. If single criterion with high sensitivity is used, fluid lactate dehydrogenase level is suggested.

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THE USE OF PLEURAL FLUID ADENOSINE DEAMINASE AND C-REACTIVE PROTEIN IN THE DIAGNOSTIC WORKUP OF TUBERCULOUS PLEURAL EFFUSION

Dr Shing Kam Kwok Donald, Department of Medicine, Haven of Hope Hospital (December 2011 Respiratory Medicine Exit Assessment Exercise)

Topic The use of pleural fluid adenosine deaminase (ADA) and C-reactive protein (CRP) in the diagnostic workup of tuberculous pleural effusion

Background Tuberculous pleural effusion is a diagnostic challenge to physicians. Biomarkers have been developed for diagnostic workup. Pleural fluid ADA level has been widely studied but local clinical study on the currently using Diazyme ADA assay is not available. Pleural fluid CRP level has been shown to be useful in diagnosis of tuberculous pleural effusion. Combined use of these two markers may improve the diagnostic performance.

Methods This was a prospective study. Consecutive patients attended to respiratory units of Haven of Hope Hospital and United Christian Hospital from August 2010 to July 2011 for pleural tapping were recruited. Pleural fluid was sent for ADA and CRP assay in all patients. Records of patient were reviewed for demographic data, clinical

diagnoses and pleural fluid results.

Results 173 patients were recruited, including 38 tuberculous pleural effusion, 58 malignant pleural effusion, 19 parapneumonic pleural effusion, 47 transudative pleural effusion and others. Mean pleural fluid ADA levels were 41.1, 11.0, 17.7 and 5.5 U/L respectively. Optimal cut-off value for diagnosing tuberculous pleural effusion was >18.5 U/L, with sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), positive likelihood ratio (LR+), negative likelihood ratio (LR-), area under curve (AUC) of 94.7%, 90.6%, 75%, 98.3%, 10.1, 0.06, 0.975 (95% CI 0.954-0.996) respectively. Median pleural fluid CRP levels were 21.5, 6.9, 29.7, and 3.3 mg/L respectively. Optimal cut-off value for diagnosing tuberculous pleural effusion was >11.6 mg/L, with sensitivity, specificity, PPV, NPV, LR+, LR-, AUC of 86.8%, 67.7%, 44.6%, 94.5%, 2.7, 0.19, 0.773 (95% CI 0.698-0.848) respectively. Using pleural fluid ADA and CRP together improved the diagnostic performance further, especially when applying to lymphocytic pleural effusion. ADA level and cut-off value were low when compared to historical studies.

Conclusion Pleural fluid ADA is an excellent test for diagnosis of tuberculous pleural effusion. Using pleural fluid ADA and CRP together improved the performance further, especially when applying to lymphocytic pleural effusion.

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THE USE OF ANTI-TNF THERAPIES IN PATIENTS WITH SEVERE ANKYLOSING SPONDYLITIS IN TWO REGIONAL HOSPITALS IN HONG KONG: A RETROSPECTIVE STUDY

Dr Lee Man Leung Patrick, Department of Medicine, Yan Chai Hospital (December 2011 Rheumatology Exit Assessment Exercise)

Objectives To analyze and review the local experience of usage of anti-TNF therapies in patients with severe ankylosing spondylitis in two regional hospitals in Hong Kong, with a focus on the efficacy and adverse effects profile.

Methods Clinical records of AS patients using anti-TNF therapies in Princess Margaret Hospital and Yan Chai Hospital from Jun, 2005 to Jun, 2011 were reviewed. Demographics and clinical characteristics of these patients, their response to anti-TNF therapies including changes in BASDAI and inflammatory markers were investigated among the anti-TNFs. Adverse effects of anti-TNF therapies were recorded.

Results During the study period, there were 53 patients with severe AS on anti-TNF therapies. Out of these 53 patients, 18 patients switched from one anti-TNF to other anti-TNF for various reasons. For those 20 patients who used Infliximab, mean BASDAI decreased from 7.12±1.33 to 3.89±1.63 (45.4%Δ) at week 16; for those 37 patients who were put on Etanercept, mean BASDAI decreased from7.1±1.18 to 3.97±1.61 (44.1%Δ); Mean BASDAI decreased from 7.0±1.45 to 4.48±1.61 (36.0%Δ) for 9 patients using Adalimumab; Mean BASDAI decreased from 7.07±1.45 to 4.18±1.97 (40.9%Δ)for 11 patients using Golimumab after 16 weeks of treatment. Significant reductions in inflammatory markers were also noted. Severe adverse effects were rare with two serious infections and one malignancy. 38 patients (71.7%) were still on anti-TNF therapies at the end.

Conclusion All four anti-TNF therapies are efficacious in patients with severe ankylosing spondylitis, with minimal adverse effects.

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IMPACT OF SERUM URIC ACID AND USE OF ALLOPURINOL ON CARDIOVASCULAR DISEASES

Dr O'Young Kit Ying Cecilia, Department of Medicine & Geriatrics, Caritas Medical Centre (December 2011 Rheumatology Exit Assessment Exercise)

Background The association between hyperuricemia and cardiovascular diseases had been documented for decades. Recently, there is also evidence which suggested that allopurinol may be beneficial in terms of cardiovascular outcome. However, the precise role of hyperuricemia in cardiovascular diseases and whether lowering its level by allopurinol may prevent cardiovascular outcome is still undetermined.

Objective To examine the impact of serum uric acid level and the use of allopurinol on cardiovascular and all-cause mortality and cardiovascular events.

Methods A retrospective cohort study of 377 patients was conducted in a regional hospital, Caritas Medical Centre. The association with cardiovascular and all-cause mortality and significant cardiovascular events were compared according to different serum uric acid levels and the use of allopurinol.

Results A total of 56 deaths were identified, of which 19 (34.9%) were attributed to cardiovascular diseases. Hyperuricemia was significantly associated with hypertension and chronic renal failure ($p<0.05$). Multivariate Cox regression analysis showed that there was an increased risk of cardiovascular mortality by 0.4% for every unit (μmol/L) increase of serum uric acid level (HR 1.004 95% CI 1.001-1.006 p= 0.004), after adjusting for age, renal function, pre-existing ischemic heart disease and congestive heart failure, and the use of betablockers. Subgroup analysis showed that this association was stronger in female (HR 1.008 95% CI 1.002-1.014 p= 0.012) and in patients with hypertension (HR 1.005 95% CI 1.002-1.007 p= 0.000). The use of allopurinol did not have significant association with cardiovascular and all-cause mortality and significant cardiovascular events.

Conclusion Hyperuricemia is one of the significant predictive factors for cardiovascular mortality in our patients, while we were not able to demonstrate the possible beneficial effects of allopurinol in terms of cardiovascular mortality or events.

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A CROSS-SECTIONAL STUDY ON PRESCRIBING PRACTICE OF ALLOPURINOL FOR PATIENTS WITH CHRONIC GOUTY ARTHRITIS AND THE FACTORS AFFECTING CLINICAL OUTCOMES (A REGIONAL HOSPITAL STUDY)

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Introduction Gouty arthritis is the commonest inflammatory arthritis. International guidelines recommend maintaining serum urate ≤ 0.36mmol/l for preventing acute attacks and complications. Allopurinol is the most widely applied urate-lowering drug. However, Western studies showed most patients do not achieve the target serum urate level and poor drug compliance is common, whereas local data is sparse.

Objectives Based on the "treat-to-target" principle, the primary aim is to evaluate the quality of care using allopurinol to treat chronic gouty arthritis. Secondly, it is to

demonstrate the clinical outcomes or benefits from target achievement, in terms of the numbers of gouty attack and medical consultations together with the patient global assessment. The third objective is to review patient's awareness and compliance to the allopurinol treatment.

Methods Patients receiving allopurinol for gout were randomly selected from the specialist out-patient clinic of the Pamela Youde Nethersole Eastern Hospital, by the use of the Hospital Authority *Clinical Data Analysis and Report System*. The study period was from 1st March 2011 till 31st July 2011. Each recruited patient was requested to complete a questionnaire and to receive a fasting blood test for serum uric acid and creatinine level with a verbal consent.

Patients' demographics and clinical characteristics (such as age, gender, economic status, co-morbidities, frequencies of gouty attack, disease awareness, compliance), doctors' factors (frequency of follow up and blood monitoring, drug prescription practice) were analyzed.

Statistical Analysis Student's T-test was used to analyze continuous variables. Spearman's correlation coefficient test and multiple linear regressions were used to determine factors that affect clinical outcomes.

Results 212 patients were recruited. The target serum urate level was achieved in only 37.9% of patients. 58% patients did not receive any serum uric acid test within recent one year and up to 25.5% of patients did not receive any blood test for urate for five or more years. 68.7% patients were having satisfactory compliance to allopurinol. Patients with gout had multiple comorbidities, especially hypertension and chronic renal failure. Those with target level achieved were on higher dose of allopurinol (mean daily dosage: 162mg versus 133mg, $p=0.002$) and they required less medical consultations for gouty attacks within latest half year (0.32times versus 3.05times, $p=0.050$) and had less cases of tophaceous gout. They also required less colchicine and steroids. Correlation test confirmed the positive correlation between high serum uric acid level and requirement of more frequent medical consultation. Multiple linear regressions showed good drug compliance was negatively associated with the number of acute flares and presence of tophi was associated with increasing number of gouty attacks.

Conclusions The local care for chronic gouty arthritis seems below international standard. Physicians appeared conservative to maximize allopurinol dose. Target achievement shows correlations with better clinical outcomes.

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