

## **Abstracts of Dissertations June 2008 Exit Assessment Exercise**

### **A STUDY OF THE DERMOSCOPIC FEATURES OF PIGMENTED BASAL CELL CARCINOMA IN HONG KONG CHINESE**

Dr Chan Gavin Jehim, Social Hygiene Service, Centre for Health Protection, Department of Health (June 2008 Dermatology and Venereology Exit Assessment Exercise)

**Background** A dermoscopic method based on the absence of a pigment network and the presence of at least one of six positive criteria has been described for the diagnosis of pigmented basal cell carcinoma (BCC).

**Objective** To evaluate the usefulness of the proposed dermoscopic method for the diagnosis of pigmented BCC in Hong Kong Chinese.

**Settings** Three dermatology clinics in Hong Kong.

**Methods** A retrospective analysis of dermoscopic images of 155 pigmented skin lesions (PSLs) including 33 pigmented BCCs recruited over a period of 14 months from January 2007 to February 2008 was performed by two blinded observers. The sensitivity, specificity, positive and negative likelihood ratio; and intra- and interobserver agreement on each criterion of the proposed dermoscopic method were evaluated. The accuracy of combining dermoscopy with the probability of BCC based on examination of clinical digital photographs for the diagnosis of pigmented BCC was also evaluated.

**Results** The proposed dermoscopic method had an overall sensitivity of 97.0%, specificity of 93.4%, a positive likelihood ratio of 14.8 and a negative likelihood ratio of 0.03. There was excellent intraobserver and interobserver agreement ( $\kappa=0.94$  and  $\kappa=0.90$  respectively;  $p<0.001$  for both). The combination of dermoscopy with photography-based predictions of clinical probability of BCC demonstrated a modest improvement in diagnostic accuracy for the noninvasive diagnosis of BCC.

**Conclusion** The proposed dermoscopic method is highly sensitive and specific for the diagnosis of pigmented BCC in patients of Chinese ethnicity. Dermoscopy is a useful adjunct to the clinical evaluation for the noninvasive diagnosis of pigmented BCC.

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### **CARRIAGE OF GENITOTROPIC HUMAN PAPILOMAVIRUSES ON EXTRAGENITAL SITES OF PATIENTS WITH GENITAL WARTS: IMPLICATION ON NON-GENITAL ROUTE OF TRANSMISSION**

Dr Chan Yee Ki, Social Hygiene Service, Department of Health (June 2008 Dermatology & Venereology Exit Assessment Exercise)

**Objective** 1) To determine whether patients with genital warts carry the genitotropic human papillomavirus (HPV) DNAs on their hands and fingers. 2) To determine the prevalence of genitotropic HPV DNAs on hands and fingers of individuals with or without genital warts in a group of patients with sexually

transmitted diseases. 3) To compare the HPV genotypes detected from genital warts or genital area with the HPV genotypes detected on hands and fingers. 4) To determine the risk factors of carrying the genitotropic HPV DNAs on hands and fingers.

**Patients and Methods** A total of 163 female patients with different types of sexually transmitted diseases were recruited. Among these patients, 90 patients had genital warts and 73 patients had other types of sexually transmitted diseases but without genital warts. Separate cytobrushes were taken from the surface of genital warts or genital surface and hands and fingers. The cytobrushes were then moistened with buffered saline in the collection tubes and then examined for the presence of HPV DNA by polymerase chain reaction. The study subjects' time of last hand washing was recorded. Demographic data, sexual history, sexual practice, barrier contraceptive method and habit such as smoking were retrieved from patient's clinical notes.

**Results** Among those patients with genital warts, HPV DNAs could be detected in 19 out of 90 patients' hands and fingers (21.1%) including both the compatible types and unidentified types due to insufficient DNA. The same types of HPV DNAs were 4 identified in both the genital warts, hands and fingers in 10 patients (11.1%). In contrast to those patients without genital warts, HPV DNAs were only found in 4 out of 73 patients' hands and fingers (5.5%) including both the compatible types and unidentified types due to insufficient DNA. The same types of HPV DNAs were found in 1 out of 73 patients' external genitalia, hands and fingers (1.4%). By multivariate logistic regression analysis of the possible risk factors, a significant higher detection of positive HPV DNAs was found on hands and fingers in patients with genital warts compared with those without genital warts after adjustment of the other risk factors ( $p < 0.008$ , OR 4.61). The same types of HPV DNAs detected on hands and fingers were also found to have significant difference between patients with or without genital warts ( $p < 0.038$ , OR 9). No significant difference was found in variables such as number of lifetime sexual partners, sexual practice, condom usage, smoking, HPV DNAs belong to high risk types or not and the last time of hand washing before collection of hands and fingers samples. The most prevalent types of HPV DNAs were HPV 11 and HPV 6.

**Conclusion** Hands-genital contact might act as an alternative route of transmission apart from the well known genital route of transmission.

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## **EFFECT OF DOPAMINE AGONIST WITHDRAWAL IN PROLACTINOMA**

Dr Chan Hiu Yan, Department of Medicine, Queen Elizabeth Hospital (May 2008  
Endocrinology, Diabetes and Metabolism Exit Assessment Exercise)

Therapy with dopamine agonists such as Bromocriptine and Cabergoline is a well-established first-line therapy in most cases of prolactinoma. There is however no consensus on the optimal duration of therapy; whether they should be given lifelong, or withdrawn after a period of treatment in selected groups of patients.

We conducted a prospective study to evaluate the clinical, biochemical and radiological remission rates after withdrawal of bromocriptine or cabergoline in stable

patients with prolactinoma, and to identify factors that are associated with remission. 24 patients participated in the study. At 24 weeks, 7 patients had symptom recurrence, 14 had elevated prolactin levels, and 2 had slightly pituitary enlargement on imaging. The biochemical remission rate, as defined by normal prolactin levels, was 42%. A higher cumulative dose of Bromocriptine ( $p=0.01$ ), higher starting dose of Bromocriptine ( $p=0.03$ ), longer duration of Bromocriptine treatment ( $p=0.058$ ), lower prolactin level before withdrawal ( $p=0.02$ ), lower pre-withdrawal nadir prolactin level ( $p=0.02$ ), and absence if a history of amenorrhea ( $p=0.03$ ) were associated with a higher remission rate.

These preliminary data suggest that, with careful monitoring, it is quite safe to withdraw dopamine agonists in patients who have been treated for at least one year, especially in those with mild disease and good prior response to dopamine agonist therapy.

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## **MANAGEMENT OF ADRENAL INCIDENTALOMAS**

Dr Ng Wan Sze Vanessa, Department of Medicine and Therapeutics, Prince of Wales Hospital (May 2008 Endocrinology, Diabetes and Metabolism Exit Assessment Exercise)

Adrenal incidentaloma is an increasingly encountered clinical problem. It is important to assess the functional status and malignant potential of every adrenal incidentaloma.

In this study, we reviewed 139 (53 males, 86 females) Chinese patients with adrenal incidentalomas who presented to the Prince of Wales Hospital in Hong Kong between June 2000 and June 2007. The mean age of patients at the time of diagnosis was  $57.4 \pm 14.9$  years. Sixty-six (47.5%) patients had their adrenal lesions located on the left side while 18 (12.9%) patients had bilateral lesions. The median size of the incidentalomas was 2.5cm (inter-quartile range 1.8-4.0cm). Sixty-one (44%) cases were benign non-functional adrenal adenomas while 52 (37%) were functional adenomas secreting excess cortisol, aldosterone or catecholamine. Fifteen (11%) patients had malignant lesions. Under univariate and subsequent multivariate logistic regression analyses among different baseline clinical characteristics, younger age, presence of hypertension and larger size of the lesions are important predictors of functional adrenal incidentalomas. However, only the size of an adrenal incidentaloma is a significant predictor of its malignant potential.

Under the Receiver operating characteristic (ROC) curve analysis, adrenal incidentalomas of size 3.25cm will give the optimal cutoff value in differentiating malignant adrenal lesions from benign non-functional or functional adrenal adenomas. The area under curve with such a cutoff is 0.87 (95% CI 0.77-0.9) with sensitivity of 85% and specificity of 77%. Under similar ROC curve analysis, adrenal incidentalomas of size 5.40cm will give the optimal cutoff value in differentiating primary adrenal carcinomas from benign non-functional or functional adenomas. The area under curve with such a cutoff is 0.97 (95% CI 0.94-1.00) with sensitivity of 100% and specificity of 95%. None of the non-functional lesions became functional or malignant during a median follow up duration of 30.2 months (inter-quartile range 18.2-52.1). Only 3 out of 61 non-functional lesions showed significant change in size during subsequent follow up. With the advancement of radiological imaging and hormonal evaluation, functional or malignant adrenal incidentalomas can be detected at an earlier stage and patients can be benefited from early surgical

interventions if indicated.

In conclusion, it is important to determine the functional status and malignant potential of every adrenal incidentaloma

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## **A PROSPECTIVE STUDY ON THE EFFECTS OF HYDROCORTISONE REGIMENS ON QUALITY OF LIFE AND METABOLIC PARAMETERS IN HYPOPITUITARY PATIENTS**

Dr Wong Fung Kwan Gida, Department of Medicine, Queen Elizabeth Hospital (May 2008 Endocrinology, Diabetes and Metabolism Exit Assessment Exercise)

**Background** Patients with adrenal insufficiency require glucocorticoid replacement therapy. Given life-long, over-replacement or under-replacement of even modest degrees may be associated with undesirable effects; however, the optimal dosage and schedule for glucocorticoid replacement have not been well studied. In this dissertation, I undertook to review the literature in this area and discuss the results of my own pilot study in 10 patients with secondary adrenal insufficiency.

**Objectives** The objectives of the study were 1. to explore the impact of four different regimes of hydrocortisone replacement on the quality of life, biochemical profile and surrogate parameters; 2. to determine if one of these regimes is most optimal for glucocorticoid replacement; and 3. to assess if cortisol level measurements can be used to monitor the status and adequacy of the glucocorticoid replacement therapy.

**Study design** In the four regimes, hydrocortisone was administered at different daily doses and frequencies. In schedule 1, hydrocortisone was given as doses of 10 mg om and 10 mg pm; in schedule 2, it was given as 20 mg om; in schedule 3, as 10 mg om; and in schedule 4, as 20 mg om and 10 mg pm.

Each regime was given for at least 2 weeks before the subject was assessed. The principal outcome parameter was quality of life as assessed by a SF-36 questionnaire that had been validated among Hong Kong Chinese. Other outcome parameters were clinical features including body mass index, waist-to-hip ratio and blood pressure, laboratory parameters including fasting glucose and insulin, lipid profiles, fasting serum and urine calcium, and eosinophil count. Urinary free cortisol and serum cortisol were measured to enable correlation between these and the outcome parameters.

**Results and conclusion** Our results showed that, of the four regimes, schedule 1 appeared to have the best outcome, producing the highest physical functioning scores ( $p < 0.05$ ) on SF-36. Schedule 4 was associated with significantly higher fasting HDL and HDL/TC levels ( $p = 0.00$  and  $p = 0.01$  respectively), and schedule 3 with significantly higher percentage of eosinophil counts ( $p = 0.00$ ). None of the four schedules could “correct” the SF-36 scores to a level comparable with the norm of our population. Although urine and serum cortisol levels showed good correlation with each other, they did not correlate with the clinical status of the patient.

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## **CHANGES IN CROHN'S DISEASE PHENOTYPE OVER TIME IN THE CHINESE POPULATION**

Dr Chow Kai Lai, Department of Medicine & Therapeutics, Prince of Wales Hospital (June 2008 Gastroenterology & Hepatology Exit Assessment Exercise)

crohn's disease (CD) causes significant morbidity and excess mortality. Phenotypic evolution of CD occurs in Caucasians. Whether phenotypic evolution also takes place among Hong Kong Chinese CD patients remains largely unknown. Additionally, CD with upper gastrointestinal tract involvement is shown to carry excess risk of recurrence in Caucasians but such correlation remains unclear in Chinese. In this report, we present two studies on Hong Kong Chinese with CD diagnosed according to stringent diagnostic criteria. First, a retrospective longitudinal study of consecutive Chinese CD patients was conducted. The evolution of disease behavior and location was evaluated. Our study showed that phenotypic changes in CD also occurred in Chinese patients in the same way as Caucasians. Second, a prospective cohort including 132 Chinese CD patients who were followed for 770 person years was studied. Demographic data including disease behavior and location, details of surgery and hospitalization were collected. Kaplan-Meier method was used to estimate the probabilities of further hospitalization and major surgery followed by Cox proportional hazards regression to determine if clinical variables independently predicted the endpoints. Our study revealed Chinese CD patients had more upper gastrointestinal tract phenotype which predicted the need of subsequent hospitalization.

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## **USE OF PSYCHOTROPIC DRUGS IN PRIVATE AGED HOME RESIDENTS: ASSOCIATIONS WITH COGNITIVE STATUS, FUNCTIONAL STATUS AND THE INCIDENCE OF FALLS**

Dr Chiu Jong Hoh John, Department of Medicine & Geriatrics, Princess Margaret Hospital (June 2008 Geriatric Medicine Exit Assessment Exercise)

**Background:** The use of psychotropic medications is very common in aged home residents in other parts of the world. There are few data and local studies to look into this aspect in Hong Kong.

**Objectives:** To describe the use of regularly administered psychotropic medications in private aged home residents in the Tsuen Wan and Kwai Tsing region of Hong Kong. To study the associations between psychotropic medication use in private aged home residents and their cognitive status, functional status and the incidence of falls.

**Methods:** The study was a retrospective cross-sectional observational assessment of all the residents from 52 private aged homes in the Tsuen Wan and Kwai Tsing region of Hong Kong in January 2007. Demographic data, baseline information, and the history of falls were collected by means of a standardized questionnaire. Data on the use of regularly administered psychotropic medications were retrieved from medical charts. The modified local version of the Abbreviated Mental Test (AMT) and the Patient Assessment Instrument (PAI) developed by Daniel Rudman et al were used to assess the cognitive and functional abilities of residents respectively. These assessments were carried out by trained registered nurses. Additional information was retrieved from hospital records and the Hospital Authority Clinical Management

System.

**Results:** Data from 4621 long-term residents (96.9% of all the residents in the 52 private aged homes) were available for statistical analysis. The residents' mean age was 80.32 (range 22-108; SD 10.594). 62.5% were female residents. The prevalence of dementia for residents who were aged 70 or above was 23.9%. 67.3% of all the residents had an abnormal AMT score. Of the residents, 43.2% were either bed bound or chair bound; 42.2% can walk independently while 14.6% can walk with assistance. The overall PAI score of all the residents was 10 (interquartile range 4-15). There was no statistically significant difference between the residents who had falls requiring hospitalization in the past 12 months and the residents without such falls in terms of the AMT score ( $p=0.225$ ), mobility status ( $p=0.711$ ) and the PAI score ( $p=0.591$ ). 19% of all the residents were taking at least one psychotropic medication. The 3 most commonly prescribed psychotropic medications were risperidone (5%), haloperidol (4.4%) and nicergoline (3.5%). 13.5% of all the residents were taking antipsychotics while 7.6% were taking antidepressants. The use of psychotropic medications was associated with a lower AMT score and a better mobility and functional statuses. The rate of potentially inappropriate psychotropic medication use as defined by the Beers criteria was 1.26%. Residents taking psychotropic medications had a higher risk of falls that required medical attention and hospitalization ( $p=0.015$ ; OR=1.34; 95%CI=1.058-1.697). In addition, residents who were under the treatment of antipsychotics ( $p=0.014$ ; OR=1.39; 95%CI=1.067-1.811) or selective serotonin reuptake inhibitor (SSRI) class of antidepressants ( $p=0.005$ ; OR=1.674; 95%CI=1.164-2.407) experienced more falls that required hospitalization.

**Conclusion:** Use of psychotropic medications in private aged homes is not uncommon in the Tsuen Wan and Kwai Tsing region of Hong Kong. Private aged home residents were generally frail and majority of them had abnormal cognitive function. Psychotropic medications were more commonly used in cognitively abnormal and functionally independent residents. The use of psychotropic medications was associated with an increased risk of falls that required hospitalization.

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### **METFORMIN ASSOCIATED VITAMIN B12 DEFICIENCY IN ELDERLY**

Dr Liu Kin Wah, Department of Medicine & Geriatrics, Shatin Hospital (June 2008 Geriatric Medicine Exit Assessment Exercise)

Geriatricians nowadays are seeing more patients with diabetes mellitus (DM) because of improved life expectancy. DM was closely related to multiple geriatric syndromes, fall, incontinence, cognitive impairment, frailty and depression. The goal of control has been shed light by the United Kingdom Prospective Diabetes Study (UKPDS) and the American Geriatric Society. UKPDS had demonstrated that metformin (a biganide) was equally effective as sulfonylurea for glycaemic control. Also, use of metformin, together with life style intervention, would be initial choice monotherapy in treatment of Type 2 Diabetes according to American Diabetic Association. Isolated reports showed that 30% of patients on bigunide treatment had vitamin B12 deficiency, it was uncertain that if it is diabetes mellitus per sec or its biguanide treatment that was associated with vitamin B12 malabsorption ( Adams JF et al., 1983). Little has been published about the epidemiology, clinical presentations for metformin associated Vitamin B12 deficiency. Knowledge of risk factors (in particular, use of metformin) associated with vitamin B12 deficiency among diabetic elderly can potentially help us

develop screening and preventive strategies.

**Objective** The aim of the study was to examine the prevalence of the Vitamin B12 deficiency in 2 groups of geriatric diabetic patients; one group being treated with metformin, and other group with other pharmacological treatment.

**Methods** Consecutive diabetic patients who attended the Geriatrics Specialist Outpatient clinic Prince of Wales Hospital during the period from September 2005 to June 2006 were recruited into the sample of our study. This clinic provides service to residents in New Territories East of Hong Kong SAR.. Subjects with pernicious anaemia (positive schilling test result or anti-intrinsic factor antibodies), pancreatic exocrine insufficiency, and histories of gastrectomy or small bowel resection were excluded. Epidemiology data on patient's age, sex, duration of diabetes, dosage and duration of metformin treatment were captured. Vitamin B12 assay was arranged when they had routine blood taking for HbA1c level and renal function tests. Serum vitamin B12 levels of <150 pmol/L were defined as definite deficiency, and those <220 pmol/L as possible deficiency respectively.

**Results** One hundred thirty four patient (mean age 80.0 S.D. 6.19, range 61-93) were recruited. The prevalence of definite and possible vitamin B12 deficiency in our sample were 15.0%, 37.3% respectively. Fifty-six subjects (41.8%) were users of metformin. Among metformin users, 28.5% and 51.8% of were found to have definite vitamin B12 deficiency and possible vitamin B12 deficiency respectively. There was significant association between metformin use and definite deficiency and possible deficiency, with odds ratio 7.40 (95% confidence interval, 2.32-23.62 & p=0.001), and odds ratio 2.92 (95% confidence interval, 1.41-6.02 & p= 0.004) respectively. Among the metformin users, higher dosage users (>1500mg per day) had lower vitamin B12 level than the lower dosage users (metformin  $\leq$  1500mg per day).

**Conclusion** Metformin treatment is significantly associated with vitamin B12 deficiency. Baseline vitamin B12 level may need to be checked before commencement of metformin treatment. Regular vitamin B12 monitoring in metformin users is needed. In addition, doctors might need to consider vitamin B12 supplement in patients on metformin treatment.

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## **RETROSPECTIVE REVIEW OF ADULT ACUTE LYMPHOBLASTIC LEUKAEMIA/ LYMPHOMA IN 2 REGIONAL HOSPITALS IN HONG KONG**

Dr Ho Sze Ki Sandy, Department of Medicine & Geriatrics, Princess Margaret Hospital (June 2008 Haematology and Haematological Oncology Exit Assessment Exercise)

To assess the characteristics and prognosis of adult acute lymphoblastic leukaemia (ALL), 73 patients aged 16 to 78 from 2 regional hospitals in Hong Kong were retrospectively analyzed. Their median age was 37, male to female ratio 6:4. The diagnosis was B-ALL in 50 (68%) patients and T-ALL in 23 cases (32%). Philadelphia chromosome was found in 16 out of 34 (47%) patients in which conventional cytogenetics, polymerase chain reaction (PCR) or fluorescence-in-situ hybridization (FISH) was performed.. Overall complete remission (CR) rate was 84% (61 out of 73). 51 out of 57 patients (89%) having Modified German protocol

(MGP) and 4 out of 4 cases (100%) with HyperCVAD protocol achieved CR. The only patient's characteristics that remained independently significant in affecting CR by multivariate analysis was age 60 or above (OR = 10.8; 95% CI, 2.69-43.44; P=0.001). After a mean follow-up of 23.75 months, 48 (66%) patients died and the estimated 5 year survival was 27%. Estimated 1 year progression-free survival (PFS) of the 27 non-transplant patients at their first CR was 23%. Multivariate analysis showed the following factors significantly affecting overall survival (OS): age less than 60 (P = 0.019; relative risk 5.97; 95% CI = 1.34-26.53), normal cytogenetics (P = 0.041; relative risk 2.89; 95% CI = 1.04 – 7.97), achievement of CR (P = 0.080; relative risk 3.04; 95% CI = 0.87-10.59) and haematopoietic stem cell transplant (HSCT) (P = 0.001; relative risk 5.03; 95% CI = 1.99-12.67). The only prognostic factor that affected PFS in univariate analysis was the diagnosis of B or T-ALL subtype (P=0.078).

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## **DIFFUSE LARGE B CELL LYMPHOMA IN THE ERA OF MONOCLONAL ANTIBODY AT TWO REGIONAL HOSPITALS IN HONG KONG: EPIDEMIOLOGY, RISK FACTORS, TREATMENT, AND CLINICAL OUTCOMES**

Dr. Lam Yim Kwan, Department of Medicine and Geriatrics, United Christian Hospital (June 2008 Haematology and Haematological Oncology Exit Assessment Exercise)

**Background.** The addition of Rituximab to CHOP (Cyclophosphamide, Adriamycin, Vincristine, Prednisolone) has made a marked improvement in the outcome of diffuse large B cell lymphoma (DLBCL). However, local data of DLBCL in the era of Rituximab are lacking.

**Objectives.** To analyze the epidemiology, prognostic factors and outcome of local Chinese patients with DLBCL after and before the addition of Rituximab to chemotherapy

**Design.** A retrospective study was conducted from year 2001 to 2007. Adult patients with de novo DLBCL treated in Medical Departments of two regional hospitals who received CHOP or CEOP (replaced Doxorubicin with Epirubicin in CHOP) were identified. Clinical data were reviewed and analyzed.

**Results.** Ninety-seven patients with median age of 63 years (range 20-83) were identified. Fifty-three patients were male. Sixty-four percent of patients presented in stages III & IV. Forty-six patients received Rituximab plus chemotherapy (R-chemo). At 2 years, the estimated event free survival (EFS) and overall survival was significant higher among patients treated with R-chemo compared to chemotherapy alone (chemo-alone) (36.5% vs. 20.3%, p=0.024) and 66.5% vs. 42.2%, p=0.035), respectively. Rituximab reduced the risk of treatment failure by 50% (HR 0.50, 95% CI 0.29-0.84, p=0.01). In R-chemo group, the complete remission and overall response rate were 71.1% and 87%, respectively. Advanced stage and albumin  $\leq$  35g/dL were predictive for decreased EFS (p=0.003 and 0.001, respectively). International prognostic index (IPI) remained predictive in R-chemo group (p=0.02).



**Conclusion.** Patients with DLBCL treated with Rituximab plus chemotherapy showed better response rate and EFS than Chemotherapy alone. IPI remained predictive in the Rituximab era.

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### **FACTORS ASSOCIATED WITH POOR OUTCOMES IN EXTENDED-SPECTRUM B-LACTAMASE (ESBL) PRODUCING ENTEROBACTERIACEAE BLOODSTREAM INFECTIONS**

Dr Lui Chung Yan, Grace, Department of Medicine and Therapeutics, Prince of Wales Hospital (June 2008 Infectious Disease Exit Assessment Exercise)

**Background** ESBL-producing *Enterobacteriaceae* bloodstream infection (BSI) is an important problem worldwide. Factors associated with poor outcomes, including choices of empirical antibiotics, are uncertain. This study was performed to evaluate the epidemiology and clinical outcomes of BSI caused by ESBL-producing *Enterobacteriaceae*, and to assess prognostic factors for mortality.

**Methods** A retrospective study was performed. All consecutive adult patients with ESBL-producing *Escherichia coli* or *Klebsiella* BSI admitted to the Prince of Wales Hospital during a 3-year period (2004-2006) were studied. Patients' charts (for clinical data and antibiotic regime) and laboratory data on antibiotic susceptibility were reviewed. Cox proportional hazard models were performed to determine independent factors associated with 30-day all-cause mortality.

**Results** One hundred and eighty-nine episodes of BSI were studied: mean age was  $67.2 \pm 18.5$  years, 54% male, 92% nosocomial/healthcare-associated infections, 8% community-acquired, and 84% caused by *E. coli*. Most BSIs were secondary to urinary (42.9%) or intra-abdominal (34.4%) infections. 19% required intensive care, and 30-day all-cause mortality was 25.9%.

Eighty-seven (47.5%) patients received empirical susceptible antibiotics ( $\beta$ -lactam/ $\beta$ -lactamase inhibitor 55.2%, carbapenem 33.3%, cephalosporin 6.9%, and aminoglycoside 4.6%). Univariate analysis showed that malignancy, non-urinary source of bacteremia, APACHE II score and ICU admission were associated with 30-day mortality. On multivariate analysis, malignancy (aHR 3.8, 95% CI 2.0 – 7.3,  $p < 0.001$ ), APACHE II score (aHR 1.10, 95% CI 1.05 – 1.15,  $p < 0.001$ ) and the use of non-susceptible empirical antibiotics (aHR 2.3, 95% CI 1.2 – 4.4,  $p = 0.017$ ) independently predicted higher 30-day all-cause mortality

**Conclusion** ESBL-producing *Enterobacteriaceae* BSI is associated with poor outcomes. Susceptible empirical antimicrobial therapy is important in improving outcomes.

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### **THE PREVALENCE OF DEPRESSION AND COGNITIVE IMPAIRMENT IN CHINESE PARKINSON'S DISEASE PATIENTS**

Dr Cheung Ka Yin, Department of Medicine & Geriatrics, United Christian Hospital (June 2008 Neurology Exit Assessment Exercise)

**Background.** For historical background, Parkinson's disease (PD) has been well

recognized as a neurodegenerative disease, which mainly presents with motor symptoms. The cardinal features include tremor, rigidity, bradykinesia and postural instability. Until recently, it has been found that non-motor symptoms (NMS) of the disease are of at least equal importance in the management of patients with Parkinson's disease. These include depression, cognitive impairment, anxiety, sleep disturbance, psychosis. The prevalence and pathophysiology of the non-motor aspects of PD were extensively studied in other countries. Among them, it was reported that up to 10-45% of PD patients would have depression. Dementia occurred in up to 40% of PD patients, which was six times higher than those in the general population. These symptoms contributed significantly to patients' morbidity, quality of life, and institutionalization to long term care homes. Knowledge about local prevalence of such symptoms among our PD patients is necessary in order to allow early recognition of them and appropriate management.

**Objective.** To study the prevalence of cognitive impairment and depression among Parkinson's disease patients in a regional hospital in Hong Kong.

**Method.** This was a prospective questionnaire survey to determine the prevalence of depression and cognitive impairment among our PD patients. During the predefined study period (Oct 07 to Mar 08), all eligible PD patients visiting the Movement clinic of the United Christian Hospital were recruited. All patients who met the idiopathic PD diagnostic criteria of UK PDS and were able to give the consent were included. A short interview was conducted. Five different screening questionnaires were used including Geriatric Depression Scale-15 (GDS-15), Hamilton Depression Rating Scale-17 (HDRS-17), Mini-Mental State Examination (MMSE), Frontal Assessment Battery (FAB) and Non-Motor symptoms questionnaire (NMSQuest) of Parkinson's disease.

**Results.** One hundred and eleven patients completed the interviews and questionnaires. The mean age was 67 (SD = 9) years old and 68.5% were male patients. The duration of illness was  $6.5 \pm 5$  years. Summation of the UPDRS II & III was  $26.6 \pm 15.3$  and modified Hoehn and Yahr Score was 2.5 (IQR 1-2.5). The prevalence of depression screened by HDRS-17 ( $\geq 10$ ) was 25.2% while screened by GDS-15 ( $\geq 8$ ) was 43.2% in Chinese PD. The prevalence of dementia screened by MMSE ( $\geq 22$  in educated &  $\geq 18$  in non-educated) was 11.7% and that of the frontal lobe dysfunction screened by FAB ( $\geq 12$ ) was 47.7%. The mean NMS score was  $8.5 - 6 - \pm 5$ . There was apparent association of the total NMS scores across different stages of the motor severity. Depression, frontal lobe dysfunction, dementia and other NMS were significantly correlated with the motor severity of PD.

**Conclusion.** Depression and cognitive impairment in addition to NMS are highly prevalent in Chinese PD patients. In order to improve the quality of life in our patients, early recognition of these symptoms is essential.

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## **EXCESSIVE DAYTIME SLEEPINESS IN LOCAL PARKINSON'S DISEASE PATIENTS AND ITS DISEASE SPECIFIC RISK FACTORS**

Dr Yiu Kwai Ping, Department of Medicine and Geriatrics, Kwong Wah Hospital (June 2008 Neurology Exit Assessment Exercise)

**Background** Neurologists usually focus on the motor symptoms and the complications of Parkinson's disease (PD), but the non-motor problems like excessive

daytime sleepiness are often ignored by both the patients and doctors. In fact, daytime sleepiness is common. It affects the quality of life and may prone the patients to accidents. However, local data on excessive daytime sleepiness and its predictive factors are lacking as the results may be different between Caucasian and Asian populations. There is no clear consensus about the predictive factors despite previous studies. It is anticipated that better patient care can be provided when the predictive factors are better understood.

**Objective** In this study, the occurrence rate of excessive daytime sleepiness by Epworth sleepiness scale (ESS) in Parkinson's disease (PD) patients in Kwong Wah Hospital is compared with age- and sex-matched non-PD patients. The predictive factors for excessive daytime sleepiness among the Parkinson's disease patients are evaluated.

**Methods** The study was performed in the neuromedical outpatient clinic of Kwong Wah Hospital from October to December 2007. It comprised of 99 Parkinson's disease patients and 103 non-PD patients as the control with their age and gender matched. Epworth sleepiness scale was employed to screen for excessive daytime sleepiness in the structured questionnaires during the interview. The univariate and multivariate analyses were used in analyzing the association between variables and excessive daytime sleepiness.

**Results** The mean Epworth sleepiness scale (ESS) of Parkinson's disease (PD) patient group was  $9.89 \pm 3.73$  whereas as that of the control group was  $4.69 \pm 3.27$  ( $p=0.000$ ). 56.6 % of Parkinson's disease patients and 11.7% of the controls ( $p=0.000$ ) have ESS more than or equal to 10. There were total 9 variables including age, PD duration, PD severity, levodopa dose, sleep quality score, sleep time, sleep latency, number of awakening per night and PD sleepiness scale showing a significant correlation with the parameter of excessive daytime sleepiness. By the multivariate logistic regression analyses, PD severity, levodopa dose, sleep quality score and number of awakening per night were found to be the disease specific risk factors for excessive daytime sleepiness among the Parkinson's disease patients.

**Conclusion** The occurrence rate of excessive daytime sleepiness in Parkinson's disease group is shown to be 56.6%. Therefore, daytime sleepiness is a common problem in local PD patients. Since PD severity, levodopa dosage, sleep quality score and number of awakening per night are significant predictor factors, the excessive daytime sleepiness is multi-factorial and related to the disease pathology itself, medications and sleep problem.

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## **CARDIAC REHABILITATION IN DIABETIC AND NON-DIABETIC CHINESE PATIENTS WITH CORONARY HEART DISEASE – A LOCAL HOSPITAL EXPERIENCE**

Dr. Choi Chun Hung, Division of Rehabilitation Medicine, Department of Medicine & Geriatrics, Tuen Mun Hospital (June 2008 Rehabilitation Exit Assessment Exercise )

**Background** There are limited studies to assess the effectiveness of Cardiac Rehabilitation Programme ( CRP ) to Diabetic and Non-Diabetic patients with Coronary Heart Disease ( CHD ).

**Objectives** To evaluate the baseline characteristics and clinical outcomes of Diabetic and Non-Diabetic patients with CHD and Cardiac Revascularization participating into a phase II CRP. To assess whether Diabetes was predictor for low or moderate Exercise Capacity and changes after the programme.

**Methods** A retrospective observational study of 194 Chinese patients with CHD and cardiac revascularization enrolled in a phase II CRP at a local hospital from October, 2004 to September, 2007. 27 participants ( 74.1% in DM group ) defaulted or incompleted the programme. 167 patients completed ( DM group: n=53, 31.7% vs Non-DM group: n=114, 68.3% ) the 4-8 weeks of programme for analysis.

**Results** At baseline, Diabetics had significant greater mean age, relatively more female and hypertension, higher mean Systolic Blood Pressure ( SBP ) and Fasting Blood Sugar ( FBS ), greater proportion of patients achieving Non-HDL-Cholesterol < 130 mg/dl but significant less Diabetics attained Exercise Capacity  $\geq 5$  METs. There was no significant different in baseline mean Exercise Capacity between two groups.

After the programme, both Diabetics and Non-Diabetics showed significant relative reduction within groups (  $P < 0.05$  ) in SBP ( -6.4% vs -3% ), FBS ( -16.3% vs -15% ), LDL-Cholesterol ( -14% vs -21% ), current smokers ( -80.0 % vs -55.6% ), proportion of patients achieving METs < 4 ( -78.6 % vs -87% ), and significant relative increase within groups in Triglycerides ( 44.6% vs 28.3% ), mean Exercise Capacity in METs ( 29.4% vs 35.1% ), and proportion of patients attaining METs  $\geq 5$  ( 70.8% vs 41.1% ). Non-Diabetics had additional significant relative reduction within group (  $P < 0.05$  ) in Body Mass Index ( -2.4% ), Waist Circumference in Male ( -1.3% ) and overall genders ( -1.5% ), Total Cholesterol ( -10.9% ), HDL-Cholesterol ( -5.8%, ) and Non-HDL-cholesterol ( -13.0% ), significant relative increase within group in proportion of patients with Blood Pressure < 140/90mmHg ( 15.3% ), Total Cholesterol < 200 mg/dl ( 20.3% ), LDL-Cholesterol < 100 mg/dl ( 74.5% ), Non-HDL-Cholesterol < 130 mg/dl ( 51.8% ), and significant relative reduction within group in proportion of patients with Obesity or Overweight ( -9.6% ), and HDL-Cholesterol > 40 mg/dl ( -13.7% ). Diabetic group had significantly lower mean Exercise Capacity improvement on exit (  $6.6 \pm 2.0$  vs  $7.7 \pm 2.0$  METs,  $P = 0.001$  ) and less absolute changes after the programme on univariate analysis compared with Non-Diabetic group (  $1.47 \pm 1.10$  vs  $2.01 \pm 1.33$  METs,  $P = 0.011$  ).

Multivariate analyses showed that Diabetes was the only independent predictor for Exercise Capacity changes after the programme (standardized coefficient=0.180, 95%CI: 0.059 - 0.926,  $P = 0.026$  ) but not significantly associated with Exercise Capacity < 4 METs or  $\geq 5$  METs at entry and exit.

**Conclusions** Both Diabetic and Non-Diabetic patients benefited the phase II CRP. Diabetics had higher default or incompleation rate, less overall cardiovascular risks reduction and mean exercise capacity improvement. Diabetes was the only independent predictor for exercise capacity changes after the programme.

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## **THE PREVALENCE OF MOOD PROBLEMS AND ITS ASSOCIATED FACTORS IN PATIENTS WITH CORONARY ARTERY DISEASE IN A LOCAL CARDIAC REHABILITATION CENTER**

Dr Fong Ching Han, Department of Medicine and Geriatrics, Tuen Mun Hospital (June 2008 Rehabilitation Exit Assessment Exercise)

**Objectives** Depression is associated with increased mortality, angina, arrhythmias, re-hospitalization and prolonged disability in patients with ischaemic heart disease. Anxiety which apart from its correlation with depression, is itself another predictor of cardiac events. Due to its impact to cardiac outcome, it is well recommended that efforts should be paid to identify and treat any mood problems in patients with coronary artery disease. The purpose of this study is to estimate the prevalence of mood problems in patients with coronary artery disease joining our New Territories West Cluster phase II cardiac rehabilitation program (CRP) and to identify any associated factors for the mood problems.

**Study design** Retrospective descriptive study.

**Methods** One hundred and thirty-five patients enrolled in the phase II CRP and fulfilled the inclusion criteria. The scores of Hospital Anxiety and Depression Scale (HADS) were reviewed to assess the prevalence of mood problems. Score changes before and after the program were compared and the associated factors were identified.

**Results** Out of the 135 patients, 21 (15.6%) patients were screened to have anxiety and 18 (13.3%) were depressed at entry into the CRP. After completion of the program, the proportion of patient having anxiety and depression were reduced to 11.1% (15 patients) and 12.6% (17 patients) respectively though it did not reach statistical significance. However, there was a significant reduction in the mean HADS-Anxiety (A) sub-scale score from  $4.1 \pm 3.6$  to  $3.2 \pm 3.0$ , with a decrease of  $0.9 \pm 3.2$  (p 0.003) and the mean HADS-Depression (D) sub-scale score from  $3.9 \pm 2.9$  to  $3.3 \pm 2.9$  with a change of  $-0.6 \pm 2.9$  (p 0.02), as well as the mean total HADS score from  $8.0 \pm 6.1$  to  $6.6 \pm 5.5$ , with a decrease of  $1.4 \pm 5.5$  (p 0.003). It was found that patients with poor quality of life as measured by SF-36, especially in the domains of general health (p 0.001), vitality (p 0.000), mental health (p 0.000) and role-emotional (p 0.000) was associated with mood problems.

**Conclusions** As anxiety and depression are common in cardiac patients and they are the risk factors for the poor cardiac outcomes, screening of mood problems is advisable. Comprehensive cardiac rehabilitation program incorporating measures addressing the mood problems may have a positive impact on patient's mood and thus cardiac outcomes.

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## **DETECTION OF SUBCLINICAL SYNOVITIS IN PATIENTS WITH RHEUMATOID ARTHRITIS IN CLINICAL REMISSION**

Dr Yuen Ka Yan Catherine, Department of Medicine, Queen Mary Hospital (June 2008 Rheumatology Exit Assessment Exercise)

**Objectives** To detect the prevalence of subclinical synovitis in patients with rheumatoid arthritis (RA) in clinical remission by musculoskeletal ultrasonography (USG) and to define possible predictors for the presence of subclinical synovitis.

**Methods** 37 RA patients receiving disease modifying anti-rheumatic drugs (DMARDs) with disease in clinical remission were recruited. They were subject to clinical, laboratory, functional status or quality of life and radiographic evaluation at baseline. Disease Activity Score 28-joint assessment (DAS-28) was calculated.

Musculoskeletal USG including both gray-scale and power doppler techniques to the dorsal aspect of both wrists and all metacarpophalangeal joints was performed on each subject.

**Results** 9 out 37 RA patients with clinical remission were found to have increased power doppler signal by USG, signifying the presence of subclinical synovitis, the prevalence rate being 24.3%. The continuous DAS-28 with 3 variables version using C-reactive protein (DAS-28 CRP v3) was the only independent predictor for the presence of USG detected subclinical synovitis in the multivariate analysis with the odds ratio (OR) of 8.158,  $p=0.052$ . The cut off value of DAS-28 CRP v3 was found to be 2.32 with the sensitivity of 66.7% and specificity of 78.6% for the presence of USG detected subclinical synovitis.

**Conclusion** Musculoskeletal USG is more sensitive than clinical assessment to detect subclinical synovitis. USG with gray-scale and power doppler in combination with clinical assessment allows more accurate evaluation of the disease status, especially for the definition of true remission. DAS-28 CRP v3 may be used as a guide to stratify those relatively higher risk stable RA patients for proceeding to musculoskeletal USG examination to delineate the true disease status and to optimize maintenance therapy.

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