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### Miscellaneous

#### **SYMPTOM-LIMITED STAIR CLIMBING AS A VALUABLE PREDICTOR OF POSTOPERATIVE CARDIOPULMONARY COMPLICATIONS AFTER THORACIC SURGERY**

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#### **Study objective:**

Thoracotomy is associated with high rate of postoperative cardiopulmonary complications (POCs). We hypothesized that symptom-limited stair climbing predicts POCs after thoracic surgery.

#### **Methods:**

A prospective evaluation of 40 patients undergoing thoracotomy. The 28 men and 12 women completed symptom-limited stair climbing. A separate investigator, blinded to the number of flights of stairs climbed, assessed 30-day actual outcomes for POCs, including pneumonia, atelectasis, mechanical ventilation for > 48 h, reintubation, myocardial infarction, congestive heart failure, arrhythmia, pulmonary embolus, and death within 30 days of surgery. The operations performed included 30 lobectomies, 1 wedge resection, 1 pneumonectomy, and 8 decortications. Results: POCs occurred in 12 of 40 patients (30%). Of those unable to climb one flight of stairs, 85.5% developed a POC. No patient able to climb the maximum of five flights of stairs had a POC. The inability to climb two flights of stairs was associated with a specificity of 92%, negative predictive value of 81% and positive predictive value of 75% for the development of a POC, while the inability to climb the maximum of five flights of stairs was associated with a sensitivity of 100% and negative predictive value of 100% for the development of a POC. The number of days in the hospital postoperatively decreased with a patient's increased ability to climb stairs.

#### **Conclusions:**

Symptom-limited stair climbing offers a simple, inexpensive, valuable means to predict POCs after thoracic surgery

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#### **THE VALUE OF BIOCHEMICAL PARAMETERS OF THE PLEURAL ASPIRATE IN PREDICTING SUCCESS OF CHEMICAL PLEURODESIS IN ADULT PATIENTS WITH MALIGNANT PLEURAL EFFUSION**

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#### **Background:**

About 50 % of pleural effusions are due to malignant diseases and only few patients benefit from a systemic chemotherapy. Pleurodesis was introduced as a palliative option. This study aimed to evaluate the value of biochemical parameters of the pleural aspirate in predicting success of chemical pleurodesis in adult patients with malignant pleural effusion.

#### **Patients and Methods:**

This prospective study was carried out in the Departments of Chest Internal Medicine of El Fayoum University and the New Jeddah Clinic Hospital Kingdom of Saudi Arabia From January 2003, till January 2004. It included 30 adult patients who presented with malignant pleural effusion due to different types of thoracic malignancies that were diagnosed by clinical examination and special investigations (Chest CT scanning and Closed pleurocentesis). Patient ages ranged between 24 and 65 years (mean of  $27 \pm 3.4$  years). There were 25 smokers (83.3 %), and 22 (73.3 %) lived within industrial areas. In all patients, multiple

sessions of closed pleurocentesis were carried out followed by insertion of an intercostal tube connected to underwater seal system. The pleural aspirate was then sent for chemical analysis to detect Glucose, PH, and LDH. When the intercostal tube drainage reached 150 mls per day, pleurodesis was then done either by using Tetracycline (group A= 15 patients), or Bleomycin (group B=15 patients). All patients were then followed up for success of the pleurodesis process which was declared within one month by clinical, radiological measures & when amount of daily pleural drainage dropped down to 150 mls or less.

#### **Results:**

Within one month of follow-up, rates of clinical response to treatment in group A (Tetracycline) were successful in 6 cases (40 %); versus 11 cases in group B (73.3 %). Complete response (CR) occurred in 3 of group A cases (20 %); versus 11 cases (73.3 %) in group B; whereas partial response (PR) occurred in 3 cases of group A; versus 6 cases (40 %) of group B; and treatment failure (TF) occurred in 9 of group A cases (60 %) versus 4 (26.6 %) of group B case. None of our patients died. Morbidity occurred in the form of mild-to-moderate chest pain (lasting only for few days) in 4 of group A cases (26.6 %) versus one patient (6.6 %) in group B cases. Hyperpyrexia occurred to 3 patients (20 %) in group A, versus a single case (6.6 %) in group B cases. Nausea and vomiting occurred in 4 patients of group B cases (26.6 %). The success of the pleurodesis process was closely-associated to a higher glucose and PH levels together with a low LDH level in the pleural fluid. Treatment failure (TF) due to a more-aggressive malignant involvement occurred with very low PH and Glucose value and a markedly-elevated or high LDH result.

#### **Conclusion:**

The success rate of pleurodesis should be assessed in relation to biochemical parameters as LDH, PH, and glucose level in the fluid of MPE. The success of pleurodesis is usually higher when the pleural fluid PH and glucose levels are high & the LDH level is low. A low PH, and glucose level, and a high LDH in MPEs have a poorer outcome of pleurodesis.

### Miscellaneous

#### **INCIDENCE AND SURVIVAL OF PATIENTS WITH DISSEMINATED TUBERCULOSIS WITH AND WITHOUT INVASIVE CANDIDIASIS/CANDIDEMIA**

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Disseminated tuberculosis = dTB

Antitubercular therapy = ATT

Invasive candidiasis/candidemia = ic / c .

#### **Introduction:**

Patients with dTB are invariably immunocompromised and prone for multiple infections. Ic / c is not an uncommon infection in immunocompromised hence a study to evaluate incidence of and survival of these patients .

#### **Methods:**

100 cases of dTB and immunocompromised with signs and symptoms suggestive of ic / c screened by blood / urine from suprapubic aspiration / peritoneal fluid / sputum collected by bronchoalveolar lavage cultures. The diagnosis confirmed if sample positive for yeast cells / culture grows candida species.



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### Results :

5 out of 100 dTB patients had ic / c. 3 of them were HIV positive and had AIDS, 1 was elderly 61 year old who had uncontrolled diabetes leading to immunocompromised state. For comparison randomly choose 15 dTB who did not have ic / c. Exploratory laprotomy (  $p < 0.01$  ) and indwelling catheters (  $p < 0.01$  ) were significantly related risk factors. Presumptive treatment with fluconazole 200 mg I.V. twice a day was given if clinical evidence of candida somewhere else to 14 patients , upon confirmation 3 received micafungin and 2 amphotericin. In the 2 who survived 1 received micafungin other fluconazole for 4 days followed by amphotericin treatment was initiated early due to earlier culture positivity.

### Conclusions:

In patients not responding to ATT it is worth investigating them for ic/c since early treatment can improve prognosis. Exploratory laprotomy and indwelling catheters emerged as the 2 most important risk factors for ic / c in dTB patients

### Public & Private Partnership for DOTS expansion

#### INVOLVING THE PRIVATE SECTOR IN TB CONTROL IN THE CONTEXT OF AN INVIGORATED NATIONAL TB PROGRAM

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### Background:

Since 1996, the Philippine government has been spearheading the efforts in tuberculosis control through the National TB Program(NTP) of the Department of Health (DOH) mainly via the DOTS strategy. This has resulted in significant strides in achieving TB control targets although this has been relatively short until recently. The country's private sector has been viewed as a rich resource in terms of TB patients seen, potential expertise, and possible role as key opinion leaders and advocates.

### Objectives:

This session will highlight various principal strategies employed to ensure private sector involvement in TB control. The formation of a national coalition, the Philippine Coalition Against Tuberculosis (PhiCAT), and its initiatives in cooperation with the DOH will be highlighted. Models will likewise be reviewed in the fields of training, formation and certification of various PPMD units nationwide, ensuring the involvement of radiologists in the country, inclusion of DOTS in the medical and paramedical curricula, and other key endeavors in advocacy and in partnership with the DOH. Results will be provided on how these innovative initiatives created an impact the overall status of TB control in the country. In the end, we hope to give other participant countries potential models which they can potentially adapt in their settings.

### Conclusion:

The Philippines was able to achieve the 70%-85% global targets in TB control in late 2004. Private sector involvement can and should be encouraged and sustained.

### Public & Private Partnership for DOTS expansion

#### HIV/AIDS AWARENESS FOR COMMUNITY THROUGH PEER EDUCATION: AN EXPERIENCE OF BANGLADESH

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### Objectives:

Objective is to address individual's behaviors that place them at risk

of contracting HIV/AIDS and sexually transmitted infection (STI) by educating community adolescents and secondary school girls and boys and targeting activities for high-risk population. HIV/AIDS threaten country's achievements in reducing poverty and raising quality of life. Bangladesh has experienced urbanization characterized by a higher incidence of violence, alarming high rate of divorce and destitution, and a greater prevalence of drug use. Considering situation it is possible that the epidemic could spread to vulnerable groups such as marital partners and newborn children as HIV moves from high-risk group to the general population.

### Methods and Results:

One of the largest NGO in Bangladesh involved in HIV/AIDS Program was able to achieve positive results in short history. To date 38% of all brothels based commercial sex workers in the Program's enrolled in Village Organization. A total of 765,192 individuals participated in the community meetings. Community volunteers communicated with 241,773 community members, with the highest contact during their household visits. Theater show on HIV was staged successfully at 28 upazillas (sub-districts). A total of 63,826 boys and 69,742 girls attended school meetings about HIV/AIDS. In the brothels 50% of all Commercial Sex Workers became members of microfinance; distributed 1115,995 condoms through the brothel based community health workers.

### Conclusion:

All brothels based CSWs need to be enrolled in Village Organization if desired to help these women to become financially stable, which will empower them to demand condom use 100% time.

### TB & HIV

#### EXPOSURE RISK OF NEEDLE STICK AND SHARP DEVICES INJURIES: TWO YEARS LONGITUDINAL STUDY IN THE MAIN REFERRAL HOSPITAL OF TB AND HIV TB IN TEHRAN, IRAN (2007)

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Health care workers are at risk of exposures to patients' blood and body fluids (BBF). Some of these patients may be infected with Hepatitis B, Hepatitis C and HIV.

### Objectives:

To analyze the BBF exposure risk and risk factors among employees of main referral hospital of TB and HIV TB in Tehran, Iran during a 2- year period (2005- 2006).

### Methods:

This is a longitudinal descriptive study, which was done in Massih Daneshvari research and teaching hospital of TB and HIV TB in Tehran. In this main referral hospital 190 nurses, 17 high school practical nurses, 10 operating room technicians, approximately 240 residents... have been employed. 22 BBF cases happened during our two years follow up. Data were analyzed in year 2007.

### Results:

In our study 72.73% of BBF was because of needle stick (18.75% of it was because of recapping of needles in year 2005). This rate was 80% in Taiwan (2006), and 51% in Serbia (2006). Data analysis showed that the greatest among occurred in three groups: 5-10 years job experience, 25-30 years of age, and nurses. In addition 5 hospital workers were injured

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incidentally due to presence of sharp devices in the Landry due to the careless of staff. The total incidence density of BBF exposures was 3.68 per 100 Nurses in year 2005 and 2.63 in year 2006. This rate was 10 and 30 in operating room technicians, 11.76 and Zero in high school practical nurses, and 1.71 and 1.67 in residents during these two years. In Taiwan (2006) this rate was 1.9.

### Conclusion:

This study shows the reduction in the needle stick/sharp device injuries that could be due to the educational short courses offered to the personnel. Most injuries in our study happened in the morning shift (72.73%) compared to night shift (9.9%). This may be due to more working pressure in the morning shift.

### NGO

#### THE ROLE OF MAPTB IN THE DISTRICTS TO STRENGTHEN TUBERCULOSIS AWARENESS AND PREVENTION ACTIVITIES IN PERAK STATE

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Malaysian Association For Prevention Of Tuberculosis (MAPTB) is an important non-governmental organization whose main objective is to complement and supplement the work done by Ministry Of Health, Malaysia and the Government of Malaysia. It is one of the oldest NGOs in Malaysia, formed before the independence of the country.

In Perak all the nine districts have a branch which is supervised by the Perak State branch. All the chairman of the districts are members of the state executive committee. The health, welfare, and education departments are ex-officio members of this committee.

The activities of MAPTB in the districts are many. The most important is giving subsidy to poor and deserving TB patients in the form of TAS (Treatment Allowance Schemes), creating awareness and health education on TB to the community, helping the ministry of health in DOTS (Directly Observed Treatment Short course) services, celebrating World Tuberculosis Day which falls on 24 March every year, organising various fund raising programmes for the association, celebrating festive cheers with the TB patients during the various festivals in Malaysia. The MAPTB also organises various retreats for its members in the form of excursions, seminars, study tours and encouraging members to attend conferences and workshops.

In conclusion the role of MAPTB in the districts is very important in helping the Ministry of Health in achieving the Millennium Development Goals (MDG) in tuberculosis reduction activities.

### Tuberculosis

#### DEATHS DUE TO TUBERCULOSIS IN PERAK-2005

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### Introduction:

Tuberculosis causes more deaths than any other infectious agent in the world and kills almost 2 million people per year. An increase in high risk, immuno-suppressed individuals, particularly those infected with HIV, lead to an increase in TB cases. Directly observed treatment short-course (DOTS) is one of the most cost-effective health intervention available,

which is expected to give a cure rate in excess of 80%. These outcomes are expected to decrease mortality rates, thus detailed epidemiology of TB deaths need to be studied.

### Method:

The information was obtained from the TBIS-10J forms. All deaths that occurred in patients while on treatment for TB is recorded in this form. A total of 101 deaths were documented for the year 2005 and final cause of death was determined after mortality audits are conducted. The cases are then classified as deaths due to tuberculosis or non-TB deaths.

### Results:

For the year 2005, a total of 101 deaths was recorded amongst cases on treatment for TB. 35 deaths were directly due to TB and the remaining 66 cases were classified as non-TB deaths (not directly due to TB). Of the 35 cases, 29(83%) had advanced pulmonary X-ray changes on diagnosis and active tuberculosis. Remaining 6(17%) succumbed to military TB and TB meningitis. Though 25 patients out of the 101 deaths were HIV positive, 21 cases died due to the retroviral disease and other complications, and in 4 of them death was directly due to TB. The prevalence of TB in the age group more than 55 years of age contributed to 20(57%) of the TB deaths. 14(40%) of the patients succumbed to the disease within 14 days of initiating TB treatment, and another 9(25%) within 30 days of TB treatment. Defaulters contributed to only 3(9%) of these TB deaths.

### Conclusion:

The main risk factor for death due to TB was delay in seeking treatment with ongoing transmission of TB in the older age group. Older patients diagnosed with TB have already had extensive lung damage due to TB and thus succumb to the disease. Emphasis should be placed on screening for TB in all primary health care facilities and a well run DOTS program.

### Pulmonary Infection

#### VALIDATION OF CURB-65 SCORE IN HOSPITALIZED PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA IN MALAYSIA

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### Introduction:

Community-acquired pneumonia (CAP) is still a major cause of death and morbidity in Malaysia. CURB-65 is a useful prediction tool for stratification into different management groups. CURB-65 has been validated in other countries and proven useful in stratifying CAP patients into appropriate management groups.

### Objective:

This study was done to validate CURB-65 scoring system in the Malaysian population.

### Methods:

A prospective observational cohort study was done of consecutive non-immunocompromised subjects aged 12 years and above admitted with CAP in a single centre.

### Results:

161 subjects (median age 65 years, 48.4% males) hospitalized for CAP. The 30-day mortality rate was 15.5%. Ten (6.2%) died within 72 hours of hospitalization. Twenty subjects (12.4%) died in hospital. CURB scores were 0-1 (44%), 2 (27%) and 3-6 (29%). The 30-day mortality rates were 1.4%, 9% and 43.5% respectively.

Multiple comparisons between the CURB categories showed the odds ratio of dying at 30 days was increased with the CURB-65 scores. CURB-65 scores 0-1 (OR 0.084; 95% CI 0.019-0.372). CURB-65 score of two



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### Pulmonary Infection

#### EPIDEMIOLOGY AND OUTCOME OF HOSPITAL-ACQUIRED AND VENTILATOR-ASSOCIATED PNEUMONIA AT THE PHILIPPINE GENERAL HOSPITAL CENTRAL INTENSIVE CARE UNIT

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#### Objectives:

To determine the microbiology and outcomes of patients with hospital-acquired pneumonia (HAP) and ventilator-associated pneumonia (VAP).  
2. To determine the attitudes of physicians on antibiotic use given the results of semiquantitative cultures of respiratory specimens.

#### Methods:

This is a cross-sectional cohort study involving 42 adult patients admitted at the central intensive care unit (ICU) between May 1, 2006 and July 31, 2006 who were diagnosed to have HAP or VAP. Attitudes of the physicians in selection of antibiotics given the semiquantitative culture results of respiratory specimens as well as the in-hospital mortality, length of ICU stay, and response to antibiotics were recorded.

#### Results:

The most common pathogen isolated from endotracheal aspirate or sputum was *Pseudomonas aeruginosa* followed by *Klebsiella pneumoniae* and *Acinetobacter baumannii*. Seventy-six percent of the patients received culture-guided treatment and twenty-four percent received non-culture guided treatment. There was resolution of pneumonia in ninety-one percent of the culture-guided patients and in seventy-one percent of the non-culture guided patients ( $p=0.238$ , Fisher's exact). All-cause mortality was 10% for the culture-guided group and 28.5% for the non culture-guided group ( $p=0.238$ , Fisher's exact). The average ICU stay was 23 days for the culture-guided group and 31 days for the non culture-guided group.

#### Conclusion:

The study justifies the use of semi-quantitative cultures in the selection of proper antibiotic therapy in patients with nosocomial pneumonia.

### Pulmonary Infection

#### HOSPITALISED PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA DUE TO ATYPICAL RESPIRATORY PATHOGENS

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#### Objectives:

To determine the frequency and to define the clinical features of community acquired pneumonia (CAP) due to atypical respiratory pathogens (ARPs).

#### Methods:

A prospective study on non-immunocompromised patients aged 12 years and older hospitalised for CAP. Microbiological investigations included cultures of blood, sputum and other respiratory specimens, and serological tests for atypical respiratory pathogens on paired acute- and convalescent-phase sera.

#### Results:

Of a total of 234 patients with CAP, ARPs (*Mycoplasma pneumoniae*, *Chlamydia pneumoniae* and *Legionella pneumophila*) were determined to be the aetiological pathogens in 46 (19.7%) patients. *M. pneumoniae*, *C. pneumoniae* and *L. pneumophila* were identified in 26, 12 and 8 patients, respectively. Patients with *Mycoplasma*

(OR 0.457; CI 0.148-1.417) and CURB-65 scores 3-6 (OR 16.923; CI 5.810-49.294.) Adjusting for confounders, serum albumin, BMI and the CURB-65 category were found to be significant in predicting 30 day mortality in CAP patients.

#### Conclusion:

CURB-65 score is useful in predicting 30-day mortality in hospitalized CAP patients. CURB-65 scores, a low BMI and serum albumin level are independent predictors of 30 day mortality in CAP patients.

### Pulmonary Infection

#### ISOLATION OF LEGIONELLA PNEUMOPHILA FROM HOSPITAL COOLING TOWERS IN JOHOR, MALAYSIA

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#### Introduction:

Legionnaires' disease was the term first used by press and media after an unexplained respiratory outbreak among war veterans attending an American Legion convention in Philadelphia in July 1976. The responsible bacterium, later known as *Legionella pneumophila*, was identified in January 1977. The pathogens are introduced into human lungs via microaspiration or inhalation of contaminated water droplets causing legionellosis. *Legionella* infect human mainly from environmental sources with no person-to-person transmission. Hospital cooling towers had been shown to be associated with a number of Legionnaires' disease outbreaks.

#### Methods:

Five cooling towers in Hospital A and 2 cooling towers in Hospital B were surveyed for *Legionella* between 1<sup>st</sup> July 2002 and 26<sup>th</sup> July 2002. In each cooling tower, water samples were collected using 500 ml sterilized bottles. Each water sample was filtered by negative pressure through 47 mm cellulose nitrate membrane filters of 0.22  $\mu$ m pore size before undergoing three different treatment methods namely direct plating, heat and acid buffer. Treated samples were plated onto the Buffered Charcoal Yeast Extract (BCYE) agar plates with added selective and growth supplements, and subsequently incubated at 35°C in a moist chamber to grow the colonies. *Legionella*-like colonies which grew on the BCYE agar but not on Horse Blood agar would undergo Gram stain microscopy before being confirmed by the Direct Fluorescent Antibody (DFA) test under the immunofluorescence (IF) microscopy. Further identification was done by serogrouping technique using specific antisera.

#### Results:

*L. pneumophila* were grown from 19 (76%) out of 25 samples of water collected. All cooling towers except cooling tower 7 in Hospital B (86%) had *L. pneumophila* bacteria isolated at sampling sites i, ii and iii, and by all treatment methods. *L. pneumophila* were also found in the water supply for cooling tower 1, cooling tower 2 and cooling tower 5 at Hospital A. By serogrouping technique using specific antisera, isolate from the cooling tower 5 was identified as *L. pneumophila* serogroup 1 which is the most virulent strain of the *L. pneumophila*.

#### Conclusion:

In conclusion, *L. pneumophila* were prevalent in the water-based cooling towers at both selected hospitals in Johor especially the Hospital A with *L. pneumophila* serogroup 1 had been isolated which may lead to nosocomial legionellosis outbreak. Isolation of *L. pneumophila* in the cooling tower water supply was equally alarming which could be regarded as a tip of an iceberg on our hospital water supply and its distribution network. The cooling tower and its water tank should be treated and physically cleaned at least by a weekly basis.

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pneumonia were significantly younger than the rest [mean age ( $\pm$ SD), 34.4 ( $\pm$  18.2) years vs 56.4 ( $\pm$  18.5) years; mean difference, 22.0 years; 95% confidence interval (CI), 14.1 – 29.6 years;  $p < 0.001$ ]. *M. pneumoniae* was more commonly identified in patients without comorbid illness. CAP due to *M. pneumoniae* was clinically milder [mean PSI score ( $\pm$  SD), 27 ( $\pm$  34) vs 65 ( $\pm$  38); mean difference, 37; 95% CI, 22 – 53;  $p < 0.001$ ]. *C. pneumoniae* and *L. pneumophila* were significantly more commonly identified in patients aged 65 years and above.

### Conclusions:

ARPs were identified in a fifth of patients hospitalized for CAP. CAP due to *M. pneumoniae* was more common in younger patients and those without comorbid medical illnesses and was less severe. CAP due to *C. pneumoniae* and *L. pneumophila* were more common in patients aged 65 years or older.

### Pulmonary Infection

#### ANTIBIOTICS USE AND CONCORDANCE TO GUIDELINES FOR PATIENTS HOSPITALIZED WITH COMMUNITY ACQUIRED PNEUMONIA

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### Objectives:

To describe the treatment pattern of antibiotics use according to American Thoracic Society (ATS) 2001, Infectious Disease of America (IDSA) 2003 and UMMC 2004 antibiotics guidelines for patients hospitalized with community-acquired pneumonia (CAP) in UMMC.

### Method:

A retrospective study was conducted among patients admitted to UMMC from January 2004 to November 2006. All the CAP patients that fulfilled the inclusion criteria were assessed individually for concordance to ATS (2001), IDSA (2003) and UMMC (2004) antibiotics guidelines. Indicators used for concordance were appropriate choice of antibiotics and time for antibiotic initiation.

### Results:

A total of 79 patients were identified (with 95% being discharged alive) whereby 17.7%, 49.4% and 39.2% were in concordance to ATS, IDSA and UMMC guidelines, respectively. Among all patients, intravenous (IV) beta-lactam and IV/oral macrolide combination was the most commonly used (50.6%) antibiotics and followed by IV co-amoxicillin/clavulanate acid (29.1%). IV beta-lactam and azithromycin combination was used in 40 patients treated in concordance with IDSA. The same combination was used in 31 and 12 patients treated in concordance with UMMC and ATS, respectively. Time for antibiotic initiation as recommended ( $\leq 8$  hours) was low i.e. 10.1% (n=8) for ATS, 27.8% (n=22) for IDSA and 22.8% (n=18) for UMMC. Antibiotics costs were calculated to be significantly higher in patients treated in concordance to guidelines (ATS:  $P=0.005$ , IDSA:  $P=0.003$ , UMMC:  $P=0.002$ ).

### Conclusion:

Concordance to available guidelines can be further improved although higher antibiotic costs were found in patients treated in concordance to the guideline.

### Pulmonary Infection

#### EVALUATIONS OF OUTCOME IN PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA REQUIRING HOSPITALIZATION

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### Introduction:

The outcome of hospitalized patients with community acquired pneumonia is influenced by few clinical variables at presentation. The purpose of this study is to evaluate mortality in patients who were hospitalized due to community acquired pneumonia in Hospital Universiti Sains Malaysia and to determine factor that influence the mortality.

### Method:

Patients requiring hospital admissions in year 2004 were retrospectively reviewed.

All required information on patient characteristics were recorded into customized data collection sheet. Variables obtained were examined for association with mortality. Severity prediction criteria were formulated from identified variables that showed significant association with mortality.

### Results:

155 patients with mean age 62  $\pm$  17 years were included. Mortality rate was 19.4%. Variables that significantly associated with mortality were presence of important co-morbid illness ( $p = 0.001$ ), confusion ( $p = 0.001$ ), hypoxaemia ( $p = 0.002$ ), low diastolic blood pressure  $\geq 60$  mmHg ( $p = 0.002$ ) and random blood sugar of more than 13 mmol/ ( $p = 0.007$ ).

The suggested predictive severity rule identified 21 of the 27 patients who died as having severe community acquired pneumonia. The sensitivity of the suggested severity model for predicting death was 0.70 and specificity of 0.95.

### Conclusion:

The used of three of the five variables (co-morbid illness, confusion, low diastolic blood pressure, hypoxaemia and hyperglycaemia) as predictors to identify subgroup of patients who are likely to have severe pneumonia were shown in this study.

### Keywords:

community acquired pneumonia, hospitalization, mortality, predictive severity rule,

### Tuberculosis

#### PREVALENCE AND RISK FACTORS OF ANTITUBERCULOSIS DRUG INDUCED HEPATITIS IN MALAYSIA

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### Introduction:

Tuberculosis affects one-third of the world's population. Anti-tuberculosis drugs are very effective but they can cause hepatotoxicity. Many risk factors have been recognised. Data on prevalence of anti-tuberculosis drug induced hepatitis and the risk factors involved are scarce in Malaysia. This observational case control study was designed to look at the prevalence and the risk factors of drug induced hepatitis in our population.

### Methods:

We retrospectively examined all the case notes of anti-tuberculosis drug-induced hepatitis from January 2003 until June 2005. They were compared with controls selected by Simple Random Sampling in terms of demographic data and the risk factors (age, gender, body mass index, hepatitis B carrier, HIV infection, sites of tuberculosis, and pretreatment



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liver biochemistries such as serum albumin, globulin, AST, ALT and bilirubin). Data were evaluated by Chi square and independent t test (univariate) and binary logistic regression analysis (multivariate).

### Results:

Out of 473 TB patients, 46 developed hepatitis and 138 were selected as controls. The prevalence of drug-induced hepatitis was 9.7%. On univariate analysis, HIV infection ( $p=0.05$ ), extrapulmonary tuberculosis ( $p=0.008$ ), lower serum albumin ( $p=0.023$ ) and higher serum globulin ( $p=0.025$ ) were significant risk factors. On multivariate analysis, only HIV infection ( $p=0.018$ ) and extrapulmonary tuberculosis ( $p=0.017$ ) were significant.

### Conclusion:

The prevalence of hepatitis was 9.7%. The presence of HIV infection and extrapulmonary tuberculosis were significant risk factors for the development of hepatitis.

### Tuberculosis

#### A PILOT STUDY ON SENSITIVITY AND SPECIFICITY OF QUANTIFERON GOLD TEST ON NEWLY DIAGNOSED MYCOBACTERIUM TUBERCULOSIS INFECTION IN KELANTANESE POPULATION

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### Introduction:

Diagnosis of tuberculosis infection has never been simple, commonly diagnosis been made after reviewing several investigation results. Unfortunately, delay in diagnosis and hence treatment has made tuberculosis infection unable to be treated early. Therefore a new test with reliability and rapidity is required. This study was carried out to compare between Quantiferon Gold assay and sputum culture for the detection of active mycobacterium tuberculosis infection.

### Methods:

Twenty four suspected tuberculosis infected patients enrolled in this pilot cross sectional study and each patient was required to produce sputum and 5 mls of blood. The cells were stimulated in vitro with antigenic substance specific for Mycobacterium tuberculosis (ESAT -6 and CFP-10). Interferon gamma, a cytokine that is released during tuberculosis infection is detected using the Quantiferon Gold Kit. In this kit, the secreted interferon gamma from patient's serum supernatant was later detected by using the ELISA method provided in the kit. Together with the blood sampling from the patients the standard sputum culture was also performed.

### Results:

Quantiferon Gold Assay is 94.7 % sensitive and 80% specific for Mycobacterium tuberculosis infection. The positive and negative predictive values are 0.94 and 0.80 sequentially. The likelihood ratio for positive Quantiferon Gold assay is calculated as 4.73 and the negative likelihood ratio is 0.06 or 6%.

### Conclusion:

This study suggests Quantiferon assay is a useful diagnostic kit for diagnosis of active tuberculosis. The sensitivity of 94.7% obtained in this study is high in comparison to previous studies carried out in Japan, USA and Australia, each represents 89.5%, 91.3% and 83.3% (in pulmonary

TB cases). While the specificity of 80% in this study is considered low as compared to other studies, 98.1% (Japan), 97.8% (Australia) and 99.8% (USA).

### Tuberculosis

#### IMPROVING TREND IN CHEST X-RAY FINDINGS AS A PERFORMANCE INDICATOR IN DETECTING EARLY PULMONARY TUBERCULOSIS CASES IN JOHOR, MALAYSIA

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### Introduction:

Re-emergence of tuberculosis (TB) is a major threat to public health. In 2005, 8.8 million new TB cases with 1.6 million TB deaths were reported. Indeed, TB is the leading cause of all infectious disease deaths. TB is an airborne disease caused by Mycobacterium tuberculosis (MTB) which primarily infects human lungs thus the majority of TB disease in man is pulmonary TB (PTB). While PTB smear positive cases are considered more infectious than PTB smear negative cases, the latter could also transmit TB. Also, smear negative PTB cases had been found to have a shorter duration of cough of 7 days associated with weight loss and atypical changes on chest x-ray (CXR). Therefore, it is crucial to detect PTB patients early in order to stop the TB transmission in the community. In 1999, the Johor Health Department started restructuring the TB Control Programme. Following that, all the government health clinics in Johor were asked to have high index of suspicion for TB among outpatients who were presenting with history of cough for more than 10 days.

### Methods:

Sputum smear microscopy and CXR were routinely done on all TB suspected cases. The monitoring of CXR findings among PTB patients was imposed since the year 2000 as one of the Johor NTP key performance indicators. The CXR findings (TB lesions) on PTB patients could be broadly classified into three level of severity which are minimal, moderately advanced or far advanced. The data were analysed using simple trend analysis.

### Results:

The CXR findings among all PTB patients between 1 January 2000 and 31 December 2005 were analysed. Marked reduction of far advanced TB lesions found among all PTB smear positive and smear negative patients from 2001 until 2005. Also, half of the newly registered PTB smear positive patients and an increasing percentage to more than 75.0% of the newly registered PTB smear negative patients presented with minimal lesions by the year 2005.

### Conclusion:

The Johor Health Department had been successful in detecting PTB patients at their early stages shown by the decreasing trend of far advanced lesions and the increasing trend of the minimal lesions on their CXR findings at diagnosis. This achievement is attributed to high index of suspicion for TB on outpatients who were presenting with the history of cough for more than 10 days. It is a great challenge for the Johor Health Department to sustain this achievement and, moreover, to narrow down the proportion of PTB patients diagnosed with moderately advanced lesions in order to increase detection of PTB patients with minimal lesions only. Also, it is recommended to use the CXR findings as one of the key performance indicators for the NTP.