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## OUTCOME OF HOSPITAL ACQUIRED PNEUMONIA IN NON-ICU MEDICAL PATIENTS IN UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE – AN INTERIM REPORT

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### INTRODUCTION

Hospital-acquired pneumonia (HAP) and healthcare-associated pneumonia (HCAP) remain important causes of mortality and morbidity despite good antibiotics and supportive and preventative measures. Literature search only revealed the Japanese Respiratory Society (JRS) severity rating scale as assessment tool for HAP in contrast to several severity scales for community-acquired pneumonia.

### OBJECTIVE

To assess 30-day mortality and predictors of mortality in non-ICU medical patients.

### METHODOLOGY

Inpatients who developed HAP and patients admitted with HCAP to medical wards were recruited. Demographic data, severity of pre-morbid conditions and initial antibiotic therapy were recorded. Microbiology, blood and radiological results were analyzed and the JRS severity rating scale was tabulated.

### RESULTS

Thirty one patients were recruited from 1st March to 20th April 2008. Fourteen out of 31 (45.2%) patients had HAP while 17/31 (54.8%) were diagnosed as HCAP. Male to female ratio was 13:18. Mean age was 61±17 years. Mean duration of hospital stay from diagnosis of HAP was 10.4 days. The 30-day mortality was 50.0% (14/28). Three were lost to follow-up. The 70-79 age group contributed 41.9% of mortality. Fifty eight percent (11/14) of non-survivors had moderate to severe rating of the JRS scale. Most samples were culture negative (77.4%). Gram-negative bacilli was the most predominant organism with *Pseudomonas aeruginosa* isolated in 2 patients. Appropriate initial antibiotics (ATS-IDSA guidelines) was initiated in 87.1% of patients.

### CONCLUSION

Older age was a significant risk factor associated with mortality due to nosocomial pneumonia. As an interim report, the sample size was too small to assess significant predictors. The JRS severity rating scale appears reasonable in assessing the mortality outcome in HAP.

## CUTANEOUS TUBERCULOSIS IN PENANG HOSPITAL

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### INTRODUCTION

Cutaneous tuberculosis is a rare form of extra-pulmonary tuberculosis. Problems in the diagnosis of cutaneous tuberculosis are frequent because the clinical picture can be so varied and the incidence of positive cultures is low.

### OBJECTIVE

- To describe the clinical, histopathological and bacteriological aspects of cutaneous tuberculosis.
- To identify the clinical predictors of disseminated disease.

### METHODOLOGY

This retrospective review looked at cases of cutaneous tuberculosis treated at our unit from 1996 to 2007. Data were analysed with SPSS 13.0 version.



## RESULTS

23 cases of cutaneous tuberculosis were included. Male are more affected with ratio of 2.3:1. The mean age of patients was 37.7 ± 20.7 years. Malay was most commonly affected (10), followed by Chinese (9), Indian (2) and 2 Indonesian. The major types of cutaneous tuberculosis observed in our cohort were lupus vulgaris (47.8%), tuberculids (17.5%), tuberculosis verrucosa cutis (13.0%), scrofuloderma (13.0%) and inoculated TB (8.7%). Systemic involvement was seen in 43.5% of patients. Where performed (87.0%), Mantoux test was positive in 85.0% of cases. Skin biopsy for histopathologic study was performed in 91.3% of patients and 71.4% of them showed classical findings suggestive of tuberculosis. Mycobacterium tuberculosis was isolated in the culture from 28.6% of patients. The presence of regional lymphadenopathy, tuberculid and unvaccinated status were the indicators of disseminated disease ( $P < 0.05$ ). No correlation was found between Mantoux reactivity and the extent of disease.

## CONCLUSIONS

Cutaneous tuberculosis is not uncommon in our population. Lupus vulgaris is the commonest forms of cutaneous tuberculosis. Cultures are positive in only a small proportion of patients. Systemic involvement is a major feature noted in our cohort. The presence of regional lymphadenopathy, tuberculid and unvaccinated status were the indicators of disseminated disease.

PP 03

## PREVALENCE OF THE DELTA F508 GENE IN CHILDREN DIAGNOSED WITH CYSTIC FIBROSIS IN UNIVERSITY MALAYA MEDICAL CENTRE, MALAYSIA

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## INTRODUCTION

Cystic fibrosis is the commonest inherited disease in the Caucasian population. Although very uncommon, cystic fibrosis does manifest in the Asian population. Ten children at our centre were diagnosed to have cystic fibrosis between 2000 and 2007. We present the findings on genetic screening of these children and discuss whether these had any impact on the severity and clinical manifestations of the disease in these children.

## OBJECTIVE

To determine the prevalence of the delta F508 gene in children diagnosed with cystic fibrosis in PPUM from 2000 till 2007.

## METHOD

This is a retrospective study reviewing the case notes of 10 children diagnosed with cystic fibrosis (CF) in University Malaya Medical Centre from 2000 to 2007. We looked at their presenting clinical symptoms and signs, the severity of their clinical condition using the Schwachman-Kulczycki (KS) score and the prevalence of the delta F508 gene (and other genetic abnormalities if DNA had been sent overseas for further evaluation).

## RESULTS

In our cohort, 4 of the children were of Indian origin – none were of Pakistani descent. One child was Yemenese. Seven out of the 10 patients presented early in life, at less than 6 months of age. Of the 8 patients that agreed to have their DNA tested, only 5 patients had a detectable genetic abnormality. In 3 patients, the delta F508 abnormality was detected in at least 1 allele. Two other patients had the 7T polymorphism and R533X abnormality, again, detected in only 1 allele. The Schwachman-Kulczycki score for patients with delta F508 was  $\leq 50$ .

## CONCLUSION

Cystic fibrosis is present in our heterogeneous population. Knowledge of the common genetic abnormalities peculiar to our population is lacking. The delta F508 gene is present in a significant proportion of our patients with cystic fibrosis.

## OUTCOME OF PATIENTS ON DOMICILIARY NON-INVASIVE VENTILATORY DEVICES

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### INTRODUCTION

The role of domiciliary non-invasive ventilatory (NIV) devices has given patients with chronic respiratory failure a new ray of light in life.

### OBJECTIVES

We studied our patients who were prescribed with domiciliary NIV devices. Outcome of using these devices in terms of blood gas improvements and quality of life (QOL) were looked into.

### METHODOLOGY

This is a prospective study where all patients who were on ventilatory devices were followed up. Arterial blood gases were compared between before and after using the devices. Patients were also asked to fill up the validated translated St. George's questionnaire before and after using the ventilatory devices. The United Kingdom Medical Research Council's (UKMRC) Dyspnoea Scale was also utilized.

### RESULTS

Four patients who were on non-invasive ventilation (NIV) with bilevel positive pressure ventilation (BIPAP) and one patient who was on continuous positive pressure ventilation (CPAP) followed up in the Respiratory Department for chronic Type II respiratory failure were studied. There was improvement in the arterial blood gas (ABG) after two months which was sustained over two years. The (QOL) using the St. George's Respiratory Questionnaire and United Kingdom Medical Research Council's (UKMRC) dyspnoea score scale also showed improvement.

### CONCLUSIONS

Domiciliary NIV devices has shown persistent improvement in ABG and the QOL in patients with Type II chronic respiratory failure.

## RESPIRATORY PATHOGENS IDENTIFICATION AND ANTIBIOTICS UTILIZATION OF CHILDREN WITH CHRONIC RESPIRATORY DISORDERS

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### INTRODUCTION

Respiratory viruses are frequent causes of infections and are one of the leading causes of morbidity and mortality in young children.

### OBJECTIVE

This study will conducted to investigate the antibiotics used in relation to the microbiological assessment.

### METHODOLOGY

A six month prospective study was conducted in Ward KK5, 1PHKL for children aged 1 month to 17 years. Sputum and nasopharyngeal aspirate samples (n=52) were analyzed for bacteria using standard bacteriological culture and for twelve respiratory viruses using multiplex PCR.

## RESULTS

Samples were obtained from 70% boys and 30% girls comprising of Malays (60%), Chinese (27%), Indians (7%) and others (6%). Majority were aged 1-6 years with the following diagnosis: bronchiectasis (21%), bronchiolitis obliterans (18%), cystic fibrosis (15%), bronchopulmonary dysplasia (4%) and others (42%). Parainfluenza virus (32%) was most commonly detected, followed by RSV (28%), rhinovirus (16%), influenza virus (12%), adenovirus (8%) and metapneumovirus (4%). Normal respiratory tract flora growth constitutes 55.7%. Bacterial pathogen isolation rate was 36.5%, which included Methicillin-sensitive

*Staphylococcus aureus* (42%), methicillin-resistant *Staphylococcus aureus* (29%) *Pseudomonas aeruginosa* (13%), *Streptococcus pneumoniae* (12%) and *Klebsiella sp.* (4%). Cefuroxime (53%) and ceftriaxone (12%) was most commonly used. The usage of augmentin, cefotaxime, vancomycin, azithromycin, erythromycin and imipenem was less than 6% either in monotherapy (n=8) or combination therapy (n=22). Culture and sensitivity tests showed 23% *Staphylococcus aureus* was resistant to three or more antibiotics.

## CONCLUSION

The most common pathogens identified were parainfluenza virus, RSV, rhinovirus, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Streptococcus pneumoniae* and *Klebsiella sp.* Antibiotics administered totals 57.7% and cefuroxime was most commonly used.

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## COST OF TREATING TUBERCULOSIS IN PENANG, MALAYSIA

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## BACKGROUND

Tuberculosis (TB) is the number one killer among infectious diseases in the world. In Malaysia too, tuberculosis is the most common infectious disease. Tuberculosis is common in the developing countries and 75-80% of cases are noted in the economically productive age groups. The economic impact of TB comes from the large direct and indirect costs incurred by the patients, suffered as a result of loss of income following the inability to work and premature deaths. Studies in some developing countries found that the average cost for the treatment of susceptible TB was in the range of US 276-1546, for multi-drug resistant TB, US1,000-10,000.

## OBJECTIVE

To assess the costs incurred by the public health services and patients for the treatment of TB

## METHOD AND MATERIAL

Retrospective and prospective prevalence based partial pharmacoeconomic evaluations were conducted in a government hospital in the state of Penang. Data were collected from medical records and the patients were followed up till the completion of treatment. All types of direct costs were obtained from different hospital departments while the indirect costs to the patients were estimated by interviewing 30 patients who were randomly selected. Data analysis was done by using SPSS for the Windows version 11.0 and Microsoft Excel. All findings were reported descriptively using percentage.

## RESULT

Two hundred and one TB patients were included in this study. Different regimens with various durations of treatments were used. The direct medical and non medical costs were: RM233.50 for anti tuberculosis drugs, RM 108.80 for X ray examinations, RM 108.50 for laboratory tests, RM 76.10 for health care staff time, RM 16.30 for hospitalization, RM 164.20 for overhead costs, RM2310.80 for transportation and meals and RM 451.40 for time away from work. The cost to the patient constitutes 80% of the total costs of the treatment

## CONCLUSION

The cost of treating TB per patient was RM3482.30, the cost of anti TB drugs constituted the highest proportion of the cost to the public services (31.7%) while the cost to the patient is 79.4%.



## PRESENTATION AT DIAGNOSIS AND SEVERITY OF TUBERCULOSIS

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### INTRODUCTION

Tuberculosis (TB) is still the commonest infectious disease in Malaysia. Over the past 10 years, the number of cases is at an increase. This increase in the number can be due to more new cases being detected or the actual number of TB may be increasing. The increase can also be due to late detection of active cases, thereby more infections are occurring at the community level. TB is an infectious disease, where a sputum positive TB index case is capable of infecting close contacts if detection is delayed and immediate treatment not instituted, to break the transmission of the bacilli.

### METHOD

A retrospective analysis of all sputum positive pulmonary TB cases, treated at the Respiratory Clinic, Penang Hospital for the year 2007. All data were collected from the Tuberculosis Information System recordings (TBIS 10B-1). Sputum negative and extra pulmonary TB cases were excluded. Severity of sputum microscopy and chest X-ray using the Ministry of Health Malaysia guidelines on tuberculosis and direct smear microscopy.

### RESULT

A total of 121 cases were reviewed, 93% were male and 7% female. Chinese make up 64%, Malays 33% and Indians 17%. The most common presenting complaint was cough (96%), followed by loss of appetite and loss of weight (69%) and fever 40%. Haemoptysis was only noted in 21% of the patients. About a quarter of the patients (24%) were in the most productive age groups of 41 to 50 years. Only 21% present to the clinic within two weeks of symptoms while 45% present after four weeks of coughing. About 25% present to the clinic after three months of coughing. This late presentation is reflected by the moderately severe chest X-ray (48%) and severe chest X-ray (45%). This means 93% of the patients present with very bad chest X-rays. The late presentation also had markedly positive sputum acid-fast bacilli (AFB) smears.

### DISCUSSION

Malaysia has one of the best public health services in this region. Every Health Clinic (Klinik Kesihatan) has a microscope with a laboratory technologist; big clinics may have more than one technologists. Most health clinics in Malaysia have a doctor and several medical assistants. In Penang, there are more than 400 private clinics, five district hospitals and more than 20 government health clinics. This study shows that sputum microscopy or early chest X-rays were not done to detect cases early at these centers or the patient has poor TB awareness, thus presenting very late. A similar study was done in Penang Hospital in 2004, which shows results not different from this. More activities and awareness campaign should be done at community level, and doctors, both in the government and private need to be educated in early detection of pulmonary TB. In a state like Penang with a very good government and private medical services, a public-private partnership in TB control is feasible. This partnership can aid in early detection and DOTS therapy.



## INCIDENCE OF TUBERCULOSIS IN A STATE PRISON: THE PRELIMINARY FINDINGS

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### INTRODUCTION

Worldwide, tuberculosis is the principal cause of death among the infectious diseases. Prisoners are at higher risk of developing the disease as a result of overcrowding, physical and emotional stress and limited access to light and air in prison. Many inmates with HIV positive are also mixing with patients undiagnosed with TB. No screening is performed for all new inmates.

### OBJECTIVE

The primary objective of this study was to expand our knowledge and to gather baseline data on the incidence, management and treatment outcomes of tuberculosis in the State Prison of Penang.

### METHODS

Since all the patients from State prison were treated at Penang Hospital, a retrospective data collection of all tuberculosis cases registered at chest clinic, Penang Hospital during 1<sup>st</sup> January 2006 to 31<sup>st</sup> December 2006 were done. All the data were analyzed using SPSS 15 and Microsoft Excel.

### RESULTS

Results showed that out of a total 469 tuberculosis cases reported at the hospital, 19 cases were from the prison. This is an incidence rate of 928/100,000 inmates (total inmate for 2006 was 2048). The mean age of the prison patients was 39.57±7.89. Among the ethnic groups 4 (21.1%) Malay, 9 (47.4%) Chinese and 6(31.6%) Indians. New cases were 8 (42.1%) and 7 (36.85%) had relapse of the disease while 4 (21.1%) prisoners defaulted the treatment prior to being in prison. Majority of the patients 18(94.7%) had pulmonary tuberculosis and only one (5.2%) had extra pulmonary disease.

### CONCLUSION

The incidence of tuberculosis is very high in the prison with an incidence rate of 928/100,000, while the incidence in Penang is only 56/100,000 population. With such a high incidence, appropriate measures should be taken to prevent the outbreak of this deadly infection in prison. Proper contact tracing of all inmates in the particular cell need to be examined and investigated. All new inmates should be screened for TB before they were allowed to mix with the other inmates. Prisoners who were discharged from the prison default the treatment often. A mechanism should be arranged so that these cases do not go missing or default.

## EXPERIENCE WITH PEMETREXED SINGLE AGENT AS 2<sup>ND</sup>/3<sup>RD</sup> LINE TREATMENT OF NON-SMALL CELL LUNG CANCER

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### OBJECTIVE

Pemetrexed is a multitargetted anti-folate agent for the treatment of non-small cell lung cancer (NSCLC). We report our experience in using pemetrexed in the 2<sup>nd</sup> or 3<sup>rd</sup> line treatment of locally advanced and metastatic NSCLC.

### PATIENTS AND METHODS

This is a retrospective case note review of patients who received pemetrexed as either 2<sup>nd</sup> or 3<sup>rd</sup> line treatment of advanced NSCLC from April 2007 through December 2007 at our centre.

### RESULTS

Of 14 patients with a median age of 65 (range, 43-80) years, 6 had stage IIIB and 8 patients had Stage IV disease at the time of diagnosis. The progression free survival (PFS) ranged from 37 to 268 days with a median of 76 days (or 2.7 months). Patients who were 60 years or younger had longer median PFS (92 days) compared to those who were older (67 days). The median PFS in male patients was 93 days compared to 67 days in female patients. Never smokers had a median PFS of 84 days compared to 67 days in current or ex-smokers. Patients with Stage III disease had longer PFS (median, 84; range, 55-268 days) compared to those with stage IV disease (median, 67; range, 37-93 days). Seven patients who received pemetrexed as 2<sup>nd</sup> line chemotherapy had a median PFS of 70 (range, 37-93) days. The other 7 patients who received pemetrexed as 3<sup>rd</sup> line chemotherapy had a median PFS of 103 (range, 67-268) days. None of the differences were statistically significant because of the small number of patients. Pemetrexed was well tolerated except for 1 patient who had self limiting thrombocytopenia and 2 patients who had their treatment interrupted because of CTC Grade III rash.

### CONCLUSION

Pemetrexed treatment seemed to be associated with longer PFS in younger patients, males, never smokers, stage III disease and when used in the 3<sup>rd</sup> line setting.

## ANTIBIOTIC SUSCEPTIBILITY OF ORGANISMS ISOLATED IN COMMUNITY ACQUIRED PNEUMONIA IN HOSPITALIZED PATIENTS

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### OBJECTIVE

To identify the common aetiology of community acquired pneumonia(CAP) in hospitalized patients in a tertiary teaching hospital and its antibiotic susceptibility in a tertiary teaching hospital.

### METHODS

A prospective study conducted from August 2000 to December 2002. Patients aged 12 years and above, who were not immunocompromised with symptoms and signs consistent with pneumonia plus new infiltrates on chest radiograph were included in this study (n=352). The aetiology of CAP was determined by culture of sputum, bronchial alveolar lavage, blood and pleural fluids. All specimens for culture and sensitivity testing were obtained before the commencement of antibiotic in hospital. Disc dilution method was used for testing of antibiotic susceptibility.

### RESULTS

The aetiological agent for CAP was identified in 148 (42%) patients. *Klebsiella pneumoniae* was the commonest microorganism identified (11.4%). Majority of *Klebsiella pneumoniae* were susceptible to penicillins (more than 97.7%) and cephalosporins (more than 95.5%), so did susceptibility of *Streptococcus pneumoniae*, *Streptococcus milleri* and other *Streptococcus species* to penicillins (100%) and cephalosporin (100%). *Staphylococcus aureus* isolated in CAP by and large was methicillin susceptible (100%).

*Escherichia coli* was susceptible to *Beta*-lactam (100%) and cephalosporins (100%). 90.9% *Haemophilus influenza* was susceptible to co-amoxiclav and 100% susceptible to ampicillin-sulbactam. Ampicillin-sulbactam was an effective antimicrobial against *Acinetobacter baumannii* (100% susceptible). Ceftazidime and imipenem were effective against *Burkholderia pseudomallei* (100% susceptible). *Pseudomonas aeruginosa* isolated were still susceptible to common antipseudomonal used, namely, ceftazidime (100%), gentamicin (100%), imipenem (100%), and ciprofloxacin (100%). Finally, the resistance pattern of *Enterobacter species* were alarming, they exceeded 60% resistance against *Beta*-lactam, 50% resistance against cephalosporins, and were 20% resistance against gentamicin and imipenem but were 100% susceptible to ciprofloxacin.

#### CONCLUSION

By and large, the bacteria isolated in CAP patients in UMMC were still susceptible to common antibiotics used against specific group of bacteria.

### PP II

## ARTERIAL STIFFNESS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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#### BACKGROUND

Chronic Obstructive Pulmonary Disease (COPD) is due to airflow obstruction mainly due to smoking. However, the inflammation is not confined to the lungs and studies have shown that systemic inflammation also occurs in patients with COPD. Studies have shown that patients with COPD have an increased risk of cardiovascular events. Various cardiovascular risk factors such as hypertension, diabetes and hyperlipidaemia is known to cause stiffness of the aorta. The stiffness of the vessels can be measured by pulse wave velocity (PWV) and this has been shown to be a predictor of cardiovascular events.

#### OBJECTIVE

To compare the arterial stiffness in COPD patients (ex smokers), current smokers without COPD and healthy subjects based on pulse wave velocity (PWV) and augmentation index (AI).

#### METHODS

60 males (20 patients with COPD, 20 current smokers without COPD and 20 healthy subjects) were recruited. The age, blood pressure, glucose and cholesterol levels were matched. Pulse wave velocity (PWV) and augmentation index (AI) were measured by using the SphygmoCor machine. Lung function was measured by spirometry.

#### RESULTS

	Ex-Smokers with COPD n = 20	Smokers without COPD n = 20	Normal n = 20	p value
Age	70.00 ± 9.50	68.30 ± 9.73	68.40 ± 9.70	p > 0.05
FEV1	37.89 ± 12.48	84.35 ± 15.52	89.96 ± 10.22	p < 0.05
Glucose	9.48 ± 1.68	8.92 ± 1.17	8.92 ± 1.46	p > 0.05
TC	4.40 ± 1.59	4.62 ± 1.53	4.40 ± 1.52	p > 0.05
LDL	3.28 ± 1.17	3.54 ± 1.14	3.39 ± 1.08	p > 0.05
Systolic	139.70 ± 19.67	141.60 ± 26.88	141.95 ± 21.21	p > 0.05
Diastolic	86.65 ± 12.68	83.05 ± 10.64	85.40 ± 11.97	p > 0.05
PWV	9.48 ± 1.68	8.92 ± 1.17	8.92 ± 1.46	p > 0.05
AI	22.90 ± 11.20	23.95 ± 8.94	27.60 ± 10.19	p > 0.05

#### CONCLUSION

In this small study there was an increase in arterial stiffness measured by pulse wave velocity in patients with COPD but was not statistically significant. A larger study is required to show whether patients with COPD have increased arterial stiffness which may explain the increase risk of cardiovascular events in this condition.

## BACKGROUND KNOWLEDGE OF ASTHMA AND INHALER MEDICATION AMONG ASTHMATICS

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### INTRODUCTION

Asthma is a common respiratory illness affecting 5% of the population and is a cause of significant morbidity. Asthma education is an important aspect in asthma management and many studies have shown that asthma education and self management plan reduces exacerbations and improve the quality of life.

### OBJECTIVE

To assess patients knowledge of their asthma and inhaler medication in patients attending the asthma clinic in Selayang Hospital.

### METHOD

Asthma patients attending the asthma clinic will be seen by the asthma educator nurse for assessment and counseling before seeing the doctor. During this session, the asthmatic patient will be asked questions from the checklist regarding their knowledge of asthma and inhaler medications.

### RESULTS

	YES	NO
<b>1. Knowledge of asthma</b>		
1a Airway narrowing and inflammation	30.7%	69.3%
1b Trigger factors and avoidance	78.9%	21.1%
<b>2. Role of medication</b>		
2a Reliever medication	61.4%	38.6%
2b Preventer medication	40.4%	59.6%
<b>3. Self asthma plan</b>		
3a How to monitor asthma and when to see doctor	96.5%	3.5%
3b Asthma symptoms and reliever usage	70.2%	29.8%
3c Use of peak flow meter	10.5%	89.5%

### DISCUSSION

There is a lack of patient education regarding the background of asthma and knowledge of asthma medication. Patients are confident to self monitor and use their reliever medication but are unaware of the role of the preventer medication. Patient experience acute relief from their symptoms but the underlying inflammation remains untreated. Further efforts are required to educate all asthma patients as it is pivotal to the successful management of asthma.



## RELATIONSHIP BETWEEN LUNG FUNCTION AND BLOOD PRESSURE IN MALAYSIAN POPULATION

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### INTRODUCTION

Hypertension (>140 mm Hg systolic or > 90 mm Hg diastolic) and prehypertension (120 to 139 mm Hg systolic or 80-89 mm Hg diastolic) are associated with increased risk for development of cardiovascular disease. Forced Expiratory Volume in the first second (FEV1) is the volume of air that can be forced out in one second and is an important measure of lung function. Recently studies have shown that FEV1 is an independent risk factor for cardiovascular events.

### OBJECTIVES

To evaluate the relationship between lung function and blood pressure in the Malaysian population.

### METHODS

2575 subjects were recruited from health screening programs, (mean  $\pm$  SD age = 51  $\pm$  10.7 years). The blood pressure (BP), height and age were recorded. The FEV1 was measured according to the American Thoracic Society (ATS) standardization of spirometry. The predicted FEV1 normal values were calculated according to European Community of Coal and Steel (ECCS) predicted values (R94-1408). Smoking history and hypertension status were also documented. Patients who had a history of chronic lung disease, smokers and on hypertension medication were excluded.

### RESULTS

795 subjects were included in this study. Below are the results of the FEV1 and FEV1/FVC ratio divided into 3 groups - normotensive, prehypertension and hypertensive.

	<b>Normotensive n = 200</b>	<b>Prehypertension n = 289</b>	<b>Hypertensive n = 306</b>	<b>p</b>
<b>FEV1</b>	87.63 $\pm$ 13.87	87.50 $\pm$ 15.03	89.97 $\pm$ 15.20	p > 0.05
<b>FEV1/FVC</b>	85.64 $\pm$ 12.82	85.72 $\pm$ 11.50	85.37 $\pm$ 12.72	p > 0.05

There were no significant differences in FEV1 and FEV1/FVC ratio between the 3 groups of normotensive, prehypertensive and hypertensive group.

### CONCLUSION

This study showed no correlation between lung function and blood pressure in this population. However further analysis is required to look into other co morbidities that may influence the FEV1 among the study subjects.

## TRANSTHORACIC BIOPSY: LOCAL EXPERIENCE IN KUANTAN, PAHANG

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### INTRODUCTION

Percutaneous transthoracic biopsies under Computed Tomography (CT) guidance are commonly performed for mediastinal and lung lesions. CT guidance is essential especially in deep seated lung lesions. The purpose of this study is to review the indication, technique and complications in the transthoracic biopsy cases performed in HTAA, Kuantan, Pahang.

### MATERIAL AND METHODOLOGY

The indications for the biopsy were either mediastinal or lung mass. The coagulation profile was screened prior to the biopsy. All biopsies were performed by a radiologist. Biopsy needles (Bard Magnum or Monopty) size 14G to 18G was used depending on the site of the lesion. The puncture site is localized under CT guidance (grid method). Local anesthesia was given at the puncture site. 2 to 3 punctures were done for each case. Repeat CT scan post procedure was performed to assess complications. Patient was observed in the ward for any delayed complications.

### RESULTS

From July 2007 to April 2008, 11 biopsies were performed. 3 biopsies are from mediastinal mass (14G needle). 3 biopsies are from peripheral lung lesion (14 and 16G needle). 4 biopsies are from deep lung lesion (3 cm from the chest wall) (18G needle). 1 biopsy is for a paraaortic lymph node (16G needle). 2 out of 4 patients with deep lung lesion developed a small pneumothorax post procedure. 1 patient developed erector spinae muscle haematoma post procedure. All these patients didn't need any further intervention. All patients with deep lung lesion also developed lung contusions at the needle track. No other major complications seen.

### CONCLUSION

Percutaneous transthoracic biopsy under CT guidance is a safe procedure. Proper planning, technique, needle choice and excluding contraindications are essential for the success of the procedure.

## A CHICKEN BONE THAT MADE HER GROAN – SWALLOWED CHICKEN BONE COMPLICATED BY EMPYEMA THORACIS

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Swallowed foreign objects can pass uneventfully or cause severe life-threatening complications. Commonly fish bones, chicken bones and toothpicks are objects which have been associated with detrimental complications such as perforation of the oesophagus and intestines, mediastinitis, aorto-oesophageal fistula, upper gastrointestinal haemorrhage, ruptured carotid artery and hepatic abscess. Rarely, a piece of swallowed chicken bone can lead to empyema thoracis as illustrated in this case report. The patient was hospitalized for a month and received antimicrobial treatment for *Pseudomonas spp.* in the pleural fluid and Methicillin-resistant *Staphylococcus aureus* in her blood. She recovered from the ordeal and was well on subsequent clinic follow-up.

## ANTIBIOTIC PRESCRIPTION PRACTICE FOR SEVERE COMMUNITY-ACQUIRED PNEUMONIA IN THE INTENSIVE CARE UNIT

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### INTRODUCTION

Severe community-acquired pneumonia (CAP) is not an uncommon disease requiring admission to the intensive care unit (ICU). Initiating the appropriate antibiotics seems to play a role in influencing patient outcome.

### OBJECTIVE

To evaluate the initial choice of antibiotics and the clinical outcome in the critically ill patients admitted into the ICU with community-acquired pneumonia.

### METHODOLOGY

30 patients aged 18 years and above, admitted to the ICU of Hospital Sungai Buloh with the initial clinical diagnosis of community-acquired pneumonia were reviewed retrospectively. Patient demographics, antimicrobial administration, microbiological isolates and severity of illness, patient outcome were recorded and results were analyzed.

### RESULTS

63.3% (19 patients) of the patients with severe CAP admitted to ICU survive whereas 36.7% (11 patients) died. All deaths occurred in age-groups 41 years to >60 years (p-value 0.062). ICU mortality was higher in the patients with severity score (BTS-CURB-65) of 4 and 5, as compared to patients with lower severity score of 2 or 3 (p-value 0.36). 19 of the patients received co-amoxiclav alone or in combination with a macrolide, and of these 15 (78.9%) survived while 4 (21.1%) died p-value 0.01). Causative organisms isolated from various sources (i.e. blood, sputum, tracheal aspirate) were Streptococcus pneumoniae, Pseudomonas aeruginosa and Klebsiella pneumoniae.

### CONCLUSION

The majority of patients with less severe community acquired pneumonia (BTS-CURB-65 score of 2 or 3) in this study, who received co-amoxiclav alone or in combination with a macrolide had higher ICU survival. However, this is a retrospective study and is limited by the small sample size. Data on changes to antimicrobial therapy during admission were not analyzed.

### KEYWORDS

Community-acquired pneumonia (CAP), intensive care unit (ICU), antibiotics

## A CASE OF PULMONARY TUMOR IN CHILDREN

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Pulmonary tumor is a rare finding in children. The most common tumor is pseudotumor which is a benign tumor. We are presenting a case of pulmonary tumor in a 12 year old boy.

AA is a 12 year old boy. He stated to feel unwell and loss weight for the past 2 years. He also noted to develop progressive clubbing of his fingers for those 2 years. He otherwise has no other respiratory symptoms. He had sought treatment in numerous GPs for his problem. He was then referred to a general hospital for further investigation. Other than clubbing, pale and look thin, there was no other remarkable physical finding. However his chest x-ray showed a solitary nodule at right lower lobe of his right lung. His TB screening was negative. The CT scan of lung showed a solid mass at right lower lobe which looks benign. However the parent then refused further treatment and defaulted for nearly 4 months.

However he progressively lost weight and started to feel easily tired. He was unable to attend school properly and had one episode of pass out at school. The parents then brought him again to the hospital. Repeated chest x-ray showed a larger mass and CT- scan confirmed the mass is getting bigger. He was then referred to pediatric surgical team where the mass was excised. The biopsy reveals an inflammatory myofibroblastic tumor which is consistent with pseudotumor.

He improved symptomatically and the clubbing slowly resolved post excision operation.



## CMV PNEUMONITIS PRESENT AS MILIARY TUBERCULOSIS

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Miliary tuberculosis is uncommon presentation of pulmonary TB with typical presentation of snowstorm appearance on chest x-ray. However, other conditions such as interstitial pneumonitis could present with a similar x-ray appearance with not much difference in clinical presentation. We are presenting a case with such problem.

M is a 8 year old OA boy presented with 2 weeks history of shortness of breath, haemoptysis and loss of weight. He also had history of persistent cough. The grand father had pulmonary tuberculosis and were fully treated. There was no night sweat and fever. On examination, he was clubbing, cachexic, failed to thrive, pink and tachypneic. There was generalized lymphadenopathy over the cervical, axilla and inguinal regions. He was in respiratory distress with mark reduced air entry bilaterally and generalized coarse crepitations both in inspiratory and expiratory phase and described as 'velcro' like sound. Chest x ray showed generalized fine reticulonodular with right upper lobe consolidation with some cystic lesions. His TB work-up was done with Mantoux test was 11 mm and ESR was raised. His blood film suggestive of chronic disease with thrombocytopenia. Cervical lymph node fine needle aspiration showed granulomatous formation suggestive for tuberculosis. However his 3 time sputum AFB and BAL was negative. He was diagnosed as sputum negative pulmonary TB with TB lymphadenitis. Anti-TB was started and he was discharge home after 2 weeks. However his condition did not improved and he deteriorated after one month on anti-TB. The repeated chest x-ray showed worsening of generalized reticulonodular opacity. HRCT thorax was done and it was consistent with interstitial pneumonitis. He was started with high dose steroid and he improved dramatically. His was positive for IgM CMV and IgG CMV.

## TRANSBRONCHIAL NEEDLE ASPIRATION OF MEDIASTINAL LYMPH NODE

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### INTRODUCTION

In Malaysia, transbronchial needle aspiration (TBNA) is a relatively new procedure performed only in a handful of respiratory centres. We reviewed TBNA of mediastinal lymph node performed in Hospital Tengku Ampuan Afzan (HTAA) to determine the yield and its complications.

### METHODS

Data from January 2003 till May 2008 was retrieved from endoscopy databases and patients' records, CT thorax images and all cytological and histological slides were reviewed.

### RESULTS

36 patients had TBNA performed. Most patients had pre-TBNA diagnosis of carcinoma of lung (89%), two patients were suspected to have other malignancy (one breast carcinoma and one prostatic carcinoma) and one each was suspected to have lymphoma and sarcoidosis. All patients had TBNA performed to establish the diagnosis. Bronchoscopy revealed an endoluminal mass in only seven patients. TBNA was positive in 19 patients (53%, including two patients with malignancy other than carcinoma of lung and one patient with sarcoidosis). The commonest lymph node station aspirated was subcarinal (85%). During the same bronchoscopy procedures, 64% of patients had broncho-alveolar lavage; 64% had brushings; 39% had endobronchial biopsy and 42% had transbronchial lung biopsy. Overall, 75% had confirmed malignancy after bronchoscopy. There were 15 patients who had negative BAL, brushing, endobronchial biopsy and TBLB, 40% of them had positive TBNA. Only eight patients (22.2%) had documented bleeding after TBNA and in three of them, bleeding stopped spontaneously and another five patients required diluted adrenaline to stop the bleed. No mortality was reported from this procedure.

### CONCLUSION

TBNA is a safe procedure.



## ACUTE ENDOBRONCHIAL OBSTRUCTION FROM MASSIVE HAEMOPTYSIS

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Massive haemoptysis can occur in lung abscess. Massive haemoptysis itself may be life-threatening causing asphyxiation or respiratory failure as a result of acute large airway obstruction by blood clots, with mortality rate approaching 80 percent. There are various methods of removing the obstructing blood clots for example, via flexible bronchoscope, rigid bronchoscope or Fogarty arterial embolectomy catheter. Topical thrombolysis can be used to lyse the adherent blood clot. We describe a case of lung abscess causing massive hemoptysis resulting in acute respiratory failure. The large adherent clot was successfully removed using rigid bronchoscopy.

## SPECTRUM OF CLINICAL AND RADIOGRAPHIC FINDINGS IN CHILDREN WITH MYCOPLASMA PNEUMONIAE PNEUMONIA

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### INTRODUCTION

*Mycoplasma pneumoniae* is a small, cell-wall deficient organism. It can mimic viral respiratory tract infections both clinically and radiographically. It is usually seen in children of school going age. Symptoms are usually non specific, with gradual onset of illness. Conventional antibiotics do not work in *Mycoplasma pneumoniae* infection. Confirmation of the diagnosis by a four-fold increase in serology may take some time and thus delay appropriate treatment.

### OBJECTIVE

To determine the clinical presentation and radiographic findings of pneumonia caused by *Mycoplasma pneumoniae* infection in children admitted to University Malaya Medical Center (UMMC).

### METHOD

45 patients aged between 3 to 12 years old, diagnosed with pneumonia from January 2005 till June 2005 were identified from the paediatric ward database. Only 5 patients were confirmed to have *Mycoplasma pneumoniae* infection by serology. A retrospective analysis of their medical records was carried out to determine their demographic profile, clinical presentation and radiographic findings

### RESULTS

4(80%) presented at school going age, 1(20%) at pre school age. Boys outnumbered girls in a ratio of 3: 2. Out of 5 children, 4(80%) presented with fever of more than 10 days and 4(80%) had symptoms of cough for more than 10 days. Four children also had symptoms of vomiting. Temperature at presentation ranged from 38.5 to 40 C. Crepitations were heard in all the children. One child had significant hepatosplenomegaly. Two patients (40%) had left pleural effusions while the other 3 (60%) had various patterns of lung consolidation. The white cell count was generally not significantly raised (7- 14g/L) and the platelet count was normal. None of the children showed evidence of haemolysis.

### CONCLUSION

Although there may be suggestive features there are no clear differentiating features between *Mycoplasma pneumoniae* infection and other causes of pneumonia and definitive diagnosis can only be made serologically.

## CROSS-SECTIONAL OBSERVATION STUDY ON THE PREVALENCE OF LUNG CANCER IN CHEST CLINIC, PENANG HOSPITAL FOR THE YEAR 2004 TO 2006

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### INTRODUCTION

Lung cancer remains a major cause of mortality and morbidity, with poor outcomes despite newer treatment options. The objective of this study is to analyze the new lung cancer cases for 2004 to 2006 and to ascertain the prevalence and short-term outcome for these cases seen in our hospital.

### METHODS

A retrospective analysis of all cases registered as lung cancer in our clinic was done for the years 2004 to 2006. Factors such as age, ethnicity, smoking history, mode of presentation and diagnosis, type of cancer, staging treatment and outcome was looked into. All these patients have a separate cancer folder.

### RESULTS

A total of 77 patients presented to our clinic in 2004, 95 in 2005 and 58 in 2006. Unfortunately of the 95 patients diagnosed in 2005, only 71 were analyzed as the remaining 24 were loss to follow-up. Similarly for the same reason, only 39 of 58 patients were analyzed in 2006. For all 3 years, patients were predominantly male and of Chinese ethnicity. Over the three years, more than 50% of the cases were diagnosed via bronchoscopy, followed by CT guided biopsy. A large proportion were smokers especially among the males. However for the female, there were more non-smokers (60% in 2004, 100% in 2005 and 50% in 2006). The most common type was adenocarcinoma for all the three years, followed by squamous cell cancer, which both constitute more than 50 to 60% of the cases. As expected, most presented with Stage IIIB and Stage IV. Therefore it is unsurprising that most of our patients tend to opt for palliative treatment (45% in 2004, 50% in 2005 and 41% in 2006). This is followed by chemotherapy constituting 38% in 2004, 25% in 2005 and 41% in 2006. Overall survival rates were generally poor with those surviving less than 3 months were 46.3% in 2004, 29% in 2005 and 10% in 2006. However, those surviving more than 9 months was 4% in 2004 but increased to around 18% in 2005 and 2006. This increment could be due to the more readily available chemotherapy in the years 2005 and 2006 compared to 2004.

### CONCLUSION

Lung cancer continues to present at a late stage and thus has a poor outcome.

## CHARACTERISTICS OF TUBERCULOSIS DEFAULTERS IN PENANG HOSPITAL FOR 2007

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### INTRODUCTION

Defaulting anti-TB treatment among patients is a common problem faced by our health system. Defaulters not only have higher rates of mortality and morbidity but also remain a likely source of infection among the community. The objective of this study is just to assess the characteristics of the defaulters in Penang Hospital for the year 2007.

### METHODS

This is a retrospective observational study looking into the record of all defaulters in our chest clinic. There were 44 cases of defaulters available for analysis.

### RESULTS

Of the 44, only one was a female. A large proportion (88%) was among the younger and middle aged (below 60 years of age). Malays and Chinese were almost equal (36% and 34% respectively), while Indians made up 23% of the total. 46% of the patients defaulted within 2 months. Despite this, majority of them did have some form of improvement, assessed by clinical improvement (60%), Chest

X-ray improvement (57%) and sputum seroconversion (50%). Foreigners made up only 7% of the defaulters. Those with history of drug abuse were 34%. Retroviral disease defaulters were only 14%, while those with diabetes were slightly higher at 25%. Only 16% of those surveyed were released from prison and 30% had history of defaulting before.

#### **CONCLUSION**

Defaulting among TB patients remains a major obstacle in any TB control program. Among our patients, most tend to default early in their treatment, resulting in 50% still remaining sputum positive, and therefore are still potentially capable of spreading the disease further.

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## **MEDICAL THORACOSCOPY: PAHANG EXPERIENCE**

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#### **INTRODUCTION**

The primary objective of thoracoscopy is to diagnose pleural and lung diseases, but it is also an effective method of pleurodesis. This procedure has recently gained popularity and thus has been used in a few hospitals in Malaysia.

#### **OBJECTIVE**

To describe our early experience in thoracoscopy using semi-rigid fiberoptic thoracoscope.

#### **METHODS**

All thoracoscopy records in Hospital Tengku Ampuan Afzan (HTAA) since October 2006 were retrieved. The patients' hospital and clinic follow-up records, thoracocentesis investigations results, thoracoscopic findings and all pleural biopsy results were reviewed. The complications associated with thoracoscopy were identified.

#### **RESULTS**

24 thoracoscopic procedures on 22 patients (12 men and 10 women) were reviewed, two patients had repeat thoracoscopy. 16 patients were Malay and 6 patients were Chinese. The median age was 59.5 years old (range 15 to 72 years). 10 patients were confirmed of lung carcinoma by thoracoscopy (8 adenocarcinoma, 1 non-small cell carcinoma, 1 osteosarcoma). Three patients underwent pleurodesis for malignant pleural effusion. One patient had adhesiolysis for empyema.

8 patients had inconclusive biopsy results, out of which two patients had repeated thoracoscopy (one biopsy confirmed adenocarcinoma and the other showed necrotic tissue). The remaining six patients were treated as parapneumonic pleural effusion and responded to antibiotics.

Pleural drainage after the procedure was achieved with a single intercostal drain in 20 patients. The duration of intercostal drainage generally ranged from 2 to 4 days. Two patients developed mild subcutaneous emphysema which resolved spontaneously without further intervention. Another two patients developed low grade fever 2 to 3 hours post-thoracoscopy which settled spontaneously within 24 hours. There was no procedure-related death or any serious intra-operative accident.

#### **CONCLUSION**

Thoracoscopy is a useful and safe procedure for investigation and in some instances therapeutic intervention in pleural diseases.

## THE SPECIFICITY OF QUANTIFERON-TB GOLD TEST IN COMPARISON TO THE TUBERCULIN SKIN TEST IN BCG-VACCINATED HEALTHY VOLUNTEERS LIVING IN A TB ENDEMIC COUNTRY – HOW DO WE EXPLOIT THIS ADVANTAGE?

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### INTRODUCTION

Tuberculosis (TB) remains common in Malaysia. This is in part attributed to large pool of individuals with latent TB infection (LTBI). Though eliminating LTBI has been an important TB control strategy in developed countries, it has not been widely adopted here due partly to a lack of specific tool to identify this condition. The tuberculin skin test (TST) used currently tends to cross-react with BCG and environmental mycobacteria. We conducted a study on new alternative test, the QuantiFERON-Gold (QFT-G) test, to ascertain its specificity.

### METHODOLOGY

63 female and 32 male participants, all BCG-vaccinated, with ages ranging from 18 to 38 years, were recruited into the study. In all, history of TB contact and symptoms of active TB were excluded.

### RESULTS

TST: The participants' skin indurations ranged from 0 to 19 mm - less than 5 mm in 37; 5 to 9 mm in 31; 10 to 14 mm in 23 and > 14 mm in 4 participants, respectively. The mean skin induration for those below 20 year-old was smaller than those 27 year-old (4.0 mm versus 9.4 mm). There was no statistically significant difference in skin induration size between male and female gender.

QFT-G: In contrast, all but 3 participants showed negative QFT-G results. These 3 participants had TST above 5 mm. One participant had indeterminate result. Thus, using the participants' low risk profile as indicative of absence of infection, the QFT-G has a specificity of 95.8%.

### CONCLUSION

- The QFT-G is highly specific (95.8%) for LTBI diagnosis.
- The TST, despite being non-specific, remains a sensitive tool to detect LTBI, if the cut-off is set at 5 mm.
- A 2-step LTBI screening – exploiting the cheap and sensitive TST followed by the more specific but expensive QFT-G (for those with TST 5 mm) seems an attractive proposition.

**Table 1: TST Skin Indurations For Different Age-Gender Subgroups**

Descriptive Statistics Dependent Variable: Age of subjects (years)		Gender	Mean Skin induration (mm)	Std. Deviation	N
< 20	Male		6.00	3.969	9
	Female		3.42	4.031	31
	Total		4.00	4.114	40
20 – 26	Male		6.83	5.149	12
	Female		6.30	5.048	20
	Total		6.50	5.010	32
27 and above	Male		10.91	3.618	11
	Female		8.00	6.836	12
	Total		9.39	5.614	23
Total	Male		8.00	4.732	32
	Female		5.21	5.240	63
	Total		6.15	5.221	95