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*Overcoming An Old Scourge With A New Face
(HIV/TB Co-infection)*

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Asthma

A STUDY ON PREVALENCE OF BRONCHIAL ASTHMA IN CHILDREN OF SCHOOL GOING AGE IN RURAL INDIA

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Objectives

To determine the prevalence and to study the socio-demographic correlates of bronchial asthma among children aged 6-15 years in the rural field practice area of Department of Community Medicine, Kasturba Medical College, Manipal, India.

Methods

This is a cross sectional community based study by interview of parents of 559 children using an International Study of Asthma and Allergies in Childhood (ISAAC) questionnaire and information was also collected about socio demographic correlates and the risk factors and triggers of asthma.

Results

The overall prevalence of bronchial asthma was found to be 10.3% among children aged 6-15 years in Udupi taluk, Karnataka, India. The prevalence of asthma was found to be higher among males (12.1%) compared to females (8.4%). The prevalence was higher among younger age group (14.9% among 6-9 years) and decreased with increasing age. This association was found to be statistically significant (χ^2 for linear trend=9.254, df=2, $p=0.00235$). There was statistically significant association of bronchial asthma with family history of asthma but no significant association with use of smoke producing domestic fuel and history of worm infestation.

Conclusion

There is a high prevalence of bronchial asthma among school going children. Early detection and treatment of childhood asthma may contribute to reducing the morbidity. Increased understanding of risk factors should enable existing therapies to be better targeted, while facilitating the development of new treatment options. Health education leading to controlled management of childhood asthma should improve the child's ability to participate in extra curricular activities, resulting in huge social benefits.

Asthma

STEP-DOWN APPROACH IN CHRONIC STABLE ASTHMA: A COMPARISON OF REDUCING DOSE INHALED FORMOTEROL/ BUDESONIDE WITH MAINTAINING INHALED BUDESONIDE

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Objectives:

Once asthma control is achieved for 3 months, a gradual reduction of maintenance therapy should be attempted to identify the minimum therapy to maintain control. We compared the efficacy of formoterol/ budesonide combination and budesonide alone in maintaining asthma control in those who underwent step-down therapy.

Methods:

We conducted a 12-week, open labeled, randomized parallel group design with two step-down treatment regimens. Patients were screened using asthma control test (ACT) scoring system. Out of 54 recruited, 50 completed the study. All patients were on formoterol/

budesonide (4.5/160 microgram) combination 2 inhalation b.i.d. before the stepdown process. All patients were randomized to formoterol/ budesonide (4.5/160 microgram) combination, 1 inhalation b.i.d. or budesonide 400 microgram b.i.d. Patients recorded daily morning FEV₁ and PEFR until the end of study period. Spirometry was done at baseline, week 6 and week 12. Asthma exacerbation and asthma related events were recorded during each visit. ACT was obtained at the end of week 12. The primary outcome was morning FEV₁ at clinic visits.

Results:

There were no significant differences between the two treatment regimens in relations to FEV₁ or PEFR measurements. Mean FEV₁ and mean PEFR difference between the two regimens was also not significant. In both treatment arms, FEV₁ and PEFR were maintained throughout the study period. There were no significant differences between the ACT score at the end of the study.

Conclusion:

Asthma control following Step-down therapy can be maintained by both formoterol/budesonide combination therapy as well as budesonide alone at equivalent dose of budesonide.

Asthma

INHALED HEPARIN IS EFFECTIVE IN THE TREATMENT OF ACUTE EXACERBATION OF ASTHMA

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Background:

Inhaled Heparin was found to be highly protective against methacholine induced bronchospasm in bronchial asthma possibly via a direct effect on smooth muscle or many have potential as anti-inflammatory activity.

Objective:

The aim of the study was to determine the additional therapeutic benefit of inhaled heparin in the treatment of hospitalized patients for acute asthmatic exacerbation and treated with inhaled bronchodilators and glucocorticoid therapy.

Methods:

Thirty patients (20 male, 10 female), mean age(31 +/- 10 years), admitted for acute exacerbation of asthma, participated in a prospective, randomized, double-blind, placebo-controlled study. All the subjects received hydrocortisone, administered intravenous, and nebulized salbutamol. The treatment group received inhaled heparin therapy (20,000 U in 4 mL) every 4 hr. and the placebo group received 0.9% saline solution for 24 hours.

Baseline respiratory parameters such as oxygen saturations, respiratory rates, and peak flow rates were measured and repeated after 24 hours treatment. The number of salbutamol nebulizations needed were recorded at the end of 24 hours.

Results:

Most of the patients were in moderate severity of asthma exacerbation. All patients in both groups showed improvement in oxygen saturations, respiratory rates, and peak flow rates. Statistically significant difference was observed between the 2 groups regarding both the respiratory parameters and the mean number of salbutamol nebulizations needed ($P > 0.05$, $P > 0.01$).

Conclusion:

Inhaled Heparin demonstrated additional beneficial effect to the combination of beta adrenergic agonists and glucocorticoid treatment in acute asthma attack.

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Asthma

TREATMENT PATTERN BEFORE AND AFTER EMERGENCY DEPARTMENT VISIT AND MICRO-COSTING OF ASTHMA EXACERBATION IN A TEACHING HOSPITAL

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Objectives:

To assess the treatment pattern 12 months before and after an asthma-related emergency-department (ED) visit and to determine the cost driver for managing asthma-exacerbation.

Methods:

The records of 178 patients hospitalized to UMMC after attending ED from December 2004 to November 2005 were reviewed. Patients who were re-hospitalized or re-attended ED or re-visited UMMC clinics due to asthma in the 12 months after index ED were included in the study. The treatment pattern 12 months before and after index ED was assessed retrospectively. Four components i.e. (i) inhaled corticosteroid (ICS) dispensing rate, (ii) education, (iii) provision of action plan and (iv) follow-up appointments were used as indicators of treatment pattern. A micro-costing and time-motion study was also conducted in 30 patients who attended the ED during the period from December 2006 to January 2007.

Results:

Sixty-three patients met the inclusion criteria. ICS dispensing rate increased from 11.1% to 34.9% ($P=0.063$). Only 17.5% received education compared to 27% ($P=0.180$) from the previous admission. 3.2% were given action plan during previous admission but none during the follow-up period ($P=0.500$). Provision of follow-up appointments decreased from 96.8% to 73% ($P=0.100$). Cost of managing an exacerbation in ED was RM55.58. Medication cost (94.4%) was found to be the cost driver.

Conclusion:

ICS dispensing rate and education showed improvement. The provision of action plan and follow-up appointments were however inconsistent with the recommended guideline. Cost of managing the exacerbation is an underestimation due to the less severe cases seeking treatment at ED.

Asthma

ASTHMA PREVALENCE AND SEVERITY AMONG PRIMARY SCHOOL CHILDREN IN BAGHDAD

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Objectives:

To measure the prevalence of asthma and its severity among primary school children in Baghdad.

Methods:

A random sample of 3360 primary school children of both sexes was collected. Standardized questionnaire was completed by their parents.

Results:

Response rate was 86%, male to female ratio was 0.75:1, age range was 6 – 12 years in the study population.

Prevalence of wheezing ever was 25%. Wheezing during the last 12 months was 19.9%; only 3% of them developed > 12 attacks. Nocturnal wheezing attacks were reported by 16.3%, only 3.1% of them were suffering > 4 attacks per month, 10.5% of children demonstrated severe attacks limiting speech.

Prevalence of asthma ever was 22.3%. Asthma was detected in 81.9% of those with wheezing in the last 12 months. Among children with wheezing ever; males were predominant, while among children with asthma ever; females were predominant. Prevalence rates of both asthma and severe asthma symptoms decreased with increasing age.

Conclusion:

Asthma is a major health problem in Baghdad.

COPD

VALIDITY OF MULTIDIMENSIONAL BODY MASS INDEX (B), AIRFLOW OBSTRUCTION (O), DYSPNEA (D) AND EXERCISE CAPACITY (E), BODE INDEX AS PREDICTOR OF HOSPITALIZATION FOR COPD

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Background:

Systemic manifestations of COPD often correlate with increased risk of mortality and may be considered surrogates of disease severity.

Study objectives:

To test how well a multidimensional grading system that assessed the respiratory and systemic expressions of COPD would better predict outcome in these patients.

Patients:

A total of 150 patients with COPD (ages 45-83 yr; 89% male) were enrolled in 32 months, prospective study and followed up for a mean period of 12 months.

Measurements:

The BODE index was calculated, the main outcome measure was the number of hospital admissions for COPD during follow-up. The following variables were assessed for each patient: age, sex, pack years of smoking, FVC%, FEV1%, the best of two 6 minute walk tests done 30 minutes apart, degree of dyspnoea, body mass index (BMI).

Results:

126 patients were available for the follow-up examination (follow-up rate, 84%), 85 (67%) of patients required at least one hospital admission and 6 (4.8%) died. In multivariate analyses a significant effect of BODE score on the number of hospital admissions was found (95% confidence interval [CI], 0.36 to 0.61; $p < 0.000$). In comparison, there was a significant but smaller effect of the pack years of smoking and BMI on the number of hospital admissions (95% confidence interval [CI], 0.03 to 0.05; $p < 0.000$) and (95% CI, -0.32 to -0.09; $p < 0.01$) respectively. FEV1%, the level of dyspnoea, and 6 minute walk test were significant predictors of hospitalization in univariate analysis ($p < 0.000$) but were excluded in multivariate analysis.

Conclusions:

The BODE staging system, is a better predictor of hospital admissions than FEV₁ in COPD.

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COPD

A PROSPECTIVE INTERVENTIONAL STUDY ON EVALUATION OF METERED DOSE INHALATION TECHNIQUE AMONGST HEALTHCARE PROFESSIONALS IN NEPAL

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Objectives:

To study the proficiency of metered dose inhaler (MDI) demonstration by the doctors, nurses, medical interns and pharmacists and to evaluate the impact of educational intervention on the improvement.

Methods:

A prospective, interventional study was carried out at Manipal Teaching Hospital, Pokhara, Nepal. The subjects were asked to demonstrate the placebo inhaler and the steps were graded as per the National Asthma Education and Prevention NAEP criteria. Intervention was done by demonstrating correct MDI use with the help of placebo inhalers and providing an information leaflet. The post intervention response was also taken and analyzed accordingly.

Results:

Altogether 143 health professionals (male 53.85%, female 46.15%) were studied prior to intervention and 101 (male 41.58%, female 58.42%) of them in the post interventional phase. The overall mean \pm SD score obtained by the professionals was 4.44 ± 2.07 (pre intervention) and 7.68 ± 1.74 (post intervention).

The scores for the nurses were 3.99 (pre intervention) and 8.14 (post intervention), for doctors it was 5.96 (pre intervention) and 7.18 (post intervention), and for pharmacists it was 5.8 (pre intervention) and 7.1 (post intervention) and for interns it was 4.72 (pre intervention) and 7.12 (post intervention). None of the professionals could demonstrate all the ten steps involved in the correct use of MDI. Following the intervention 1 doctor, 4 medical interns, and 8 nurses demonstrated all the steps correctly.

Conclusion:

The present study identified the poor understanding among the healthcare professionals regarding MDI use though the intervention was partially effective.

COPD

PSYCHOTHERAPY IMPROVE EXERCISE TOLERANCE IN PATIENTS WITH PINK PUFFER SYNDROME

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Anxiety is common in the "pink puffer" syndrome associated with chronic obstructive pulmonary disease (COPD). The degree of anxiety correlates well with perceived dyspnoea. This study examines the effect of psychotherapy on anxiety, exercise tolerance, and dyspnoea. 10 patients with stable COPD (mean forced expiratory volume in one second (FEV1) = 1.25 L) had six 90 min sessions of cognitive and behavioural psychotherapy at weekly intervals. Patients completed the Beck Anxiety Inventory (BAI), 1 day before and 1 weeks after therapy. FEV1, forced vital capacity (FVC), blood gas tensions and 6 min walking distance (6MWD) were measured. 10 control patients attended weekly for lung function and 6MWD for 6 weeks, but had no psychotherapy. There were no differences in mean baseline (BAI) score, lung function, blood gas tensions or 6MWD between groups. After treatment, the BAI score had decreased from 43.10 to 20.6 ($p < 0.001$), in association, the mean 6MWD had also improved in the

psychotherapy group only, from 333 to 559 m ($p < 0.001$), an increase of 75%. In conclusion, six sessions of cognitive and behavioural psychotherapy produced a good improvement in exercise tolerance in anxious patients with chronic obstructive pulmonary disease (Pink puffer).

COPD

BONE MINERAL DENSITY CHANGES IN MALE PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE :CLINICAL AND BIOCHEMICAL VARIABLES IN CORRELATION WITH GLUCOCORTICOID USE

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Recent studies have shown that osteoporosis and vertebral fractures are quite common in postmenopausal women with chronic obstructive pulmonary disease (COPD). Few data are available in correlation between bone mass density (BMD) and men with COPD.

This study was designed to investigate the prevalence of osteoporosis in men with COPD. with special regards to the role of glucocorticoids (GCs) use in these patients. We aimed to determine factors that influencing bone metabolism and the clinical variables of this group of patients. We also tried to answer the arising question: should COPD patients be routinely evaluated for BMD?

Methods:

The study included 56 male patients with documented COPD for at least two years, their age ranged 24-66 years. Subjects were divided into 3 groups: group 1. consisted of 18 patients, who were oral GCs users, group 2. consisted of 18 patients who were inhaled GCs users and group 3. consisted of 20 patients, never GCs users (this group was considered as the control group). All subjects underwent measurement of BMD. pulmonary function tests (PFTs) and a number of biochemical markers of bone metabolism. The associations between BMD. PFTs. GCs use. biochemical markers and clinical variables were analyzed.

Results:

of all 56 patients with COPD. the prevalence of osteopenia and osteoporosis. as defined by WHO criteria was 26.8% and 21.4% at the lumbar spine. 30.4% and 23.2% at total hip. 35.7% and 28.5% at femoral neck and 32.1% and 28.8% for total body respectively. Patients included group 1 had the lowest BMD at any site ($p < 0.0001$). group 2 patients had over all bone mass loss, that was indistinguishable from those who were received oral GCs. group 3 patients had less bone mass reduction than the other two groups. Of the clinical and biochemical markers measured. N-telopeptide was significantly correlated with bone mass ($P < 0.01$), but there was no correlation with other markers. The lowest mean of FEV1 (Forced Expiratory Volume in one second) was observed in group 1 patients. BMI (Body Mass Index) was weakly correlated with bone mass in the 3 studied groups.

Conclusion:

Bone mass loss is a common problem in male patients with COPD. while the use of oral GCs increase the frequency of osteoporosis, inhaled GCs therapy offered no protection from bone loss. COPD patients who had never treated with GCs had also a substantial risk for osteoporosis. We advocate early screening and preventive intervention



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COPD

PULMONARY COMPLICATION OF TYPE 1 “INSULIN DEPENDENT MELLITUS”

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Type 1 “insulin dependent mellitus” is a systemic disorder that influence the biochemical, morphological and functional properties of the various tissues of a number of body organs e.g. eyes, kidneys, lungs, nerves and vessels

Collagen is the most abundant protein in the human lung and it plays a prominent role in defining lung structure and function. Increased cross link formation with accumulation of the inflexible collagen has been demonstrated in experimental diabetes

Study of the patients with type I or type II diabetes showed that the epithelial and capillary basal lamina of the alveoli were significantly thicker than those of age matched normal control subjects. Thickening of capillary basement membranes is recognized as the ultra structural hallmark of diabetic micro angiopathy. The presence of micro angiopathy in the lung is accompanied by the presence of micro vascular disease elsewhere

Studies in the past years focused repeatedly on finding a link between pulmonary function and diabetes mellitus Results of such investigation were controversial. Some researchers found reduced lung volumes and a decreased elastic recoil as compared with those of normal individuals, whereas other were unable to demonstrate any change in pulmonary functions. Some conclude that IDDM produce only minor changes in lung functions at rest and on exercise

Method:

The aim of this study is to asses the influence of insulin dependent diabetes mellitus including the presence of complications on the pulmonary function.

This study was carried out on 100 patients diagnosed as insulin dependent diabetes mellitus (IDDM) and 50 subjects as healthy controls.

Type 1 “insulin dependent mellitus” is a systemic disorder that influence the biochemical, morphological and functional properties of the various tissues of a number of body organs e.g eyes, kidneys, lungs, nerves and blood vessels

The result is this study as regards the pulmonary function tests:

- 1) There is significant reduction FVC, FEV1, TLC. RV. RV/TLC and FRC in IDDM patients as compared to controls and non significant reduction in FEV1/FVC. These findings are consistent with restrictive defect.
- 2) As regards the metabolic state, there is significant reduction in pulmonary function test in poor metabolic IDDM patients as compare with good metabolic patients and there is -ve. Correlation between pulmonary function test and glycated Hb level.
- 3) As regards the sex there is no significant reduction the pulmonary function and there is no correlation with sex.
- 4) There is -ve. correlation between age, duration of disease of IDDM and pulmonary function tests.

Conclusion:

As there is an evidence that pulmonary changes occurs in IDDM patients and these changes increased with age and duration of the disease and poor metabolic state, regular performed pulmonary function test by Spiro meter and chest x-ray to every patient are useful in early detection of respiratory manifestation and management of diabetic complications. Also physical therapy to chest is recommended to prevent and protect the occurrence of respiratory complications

Keywords: pulmonary function, diabetes mellitus

MDR-TB/HIV

PROFILE OF TUBERCULOSIS INFECTION AMONG CURRENT HIV+ PATIENTS AT THE PHILIPPINE GENERAL HOSPITAL

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Objectives:

The Philippines is 9th among 22 high tuberculosis burden countries. The prevalence of HIV in the Philippines is <1%. There is limited data on TB/HIV co-infection in the Philippines. This study aims to determine the prevalence of active TB disease among current HIV+ patients seen at the Philippine General Hospital (PGH) and to describe the course of this co-infection.

Methodology:

Records of current patients of the STD/AIDS Guidance, Intervention, Prevention Unit (SAGIP) of the PGH were reviewed. HIV+ patients who were diagnosed to have tuberculosis by either imaging study, biopsy of tissue specimen, or AFB smear/TB culture studies were included.

Results:

32% (9/28) of current HIV+ patients had simultaneous active tuberculosis. 33% are relapse cases. Mean time to develop active TB from HIV diagnosis is 11 months. Pulmonary involvement (88%) was the most common form of tuberculosis. Cough is the most common symptom (75%). 50% of patients had normal PE findings. Reticular infiltrates (50%) were the most common radiologic finding. Lesions were mostly on the lower lung fields (62.5%). All AFB/culture positive patients had significant radiologic chest findings. The rate of sputum AFB positivity is 37.5%. One had cultures resistant to isoniazid. One case of Non-tuberculosis mycobacterium was present. There was no significant adverse effect from simultaneous treatment of TB and HIV.

Conclusions:

Prevalence of TB HIV co-infection among current patients at the SAGIP Unit-PGH is 32%. Pulmonary involvement is the most common TB presentation with cough as the most common symptom. Presence of reticular infiltrates and basal involvement are the most common radiologic findings. Sputum positivity is similar to the immunocompetent individual. There are no adverse effects from simultaneous TB and HIV treatment.

MDR-TB/HIV

MULTI-AND EXTENSIVELY DRUG RESISTANT TB IN CHILDREN: FIRST CASE SERIES

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Objective:

To describe the clinical presentation, diagnostic and management challenges and outcome of HIV and M[X]DR in children.

Methods:

Between 1995 and 2006, of 98 children diagnosed with MDR TB admitted to a TB hospital in Durban, South Africa, at least seven had M[X]DR TB

Results:

The ages ranged from ten months to 13 years, and six were HIV positive. In one child M[X]DR was diagnosed posthumously and in two shortly before death. Three children received HAART. The HIV negative child did not respond to MDR treatment until after a lobectomy. Another child is receiving third line XDR treatment. Two children came from the hotspot area of XDR TB in KwaZulu Natal.

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Conclusions

Every effort should be made to ensure that multiple specimens are obtained for culture and susceptibility from any site. Stool, pus from ears or umbilical abscesses, faecal fistula fluid, lymph node aspirates and cerebro-spinal fluid are all examples of specimens which revealed MDR TB beside sputum. In children it is insufficient to only do direct smears. There is an urgent need for new diagnostic tests with improved sensitivity. TB Culture is too slow to aid in correct decision making. A diagnosis of M[X]DR TB should be considered in all children coming from an endemic area and if there is a history of a contact with M[X]DR TB. Mortality is associated with delay in diagnosis, HIV status and the unavailability of appropriate treatment.

MDR-TB/HIV

CHARACTERIZATION OF MDR TUBERCULOSIS IN NEPAL

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Background

Nepal has approximately 25 millions of population with prevalence of all type of tuberculosis 318, sputum smear positive tuberculosis, 95 and mortality 29 per 100,000 populations.

Objectives

To characterize the MDR Tuberculosis in urban setting of Nepal in respect to age, sex, previous history of treatment, type of culture and RFLP typing.

Methods

In this study 4004 culture isolates of different culture grading were subjected for anti-tuberculosis sensitivity testing against Isoniazid, rifampicin, ethambutol and streptomycin and RFLP typing was done on 60 isolates of *M. tuberculosis* of which 31 isolates gave interpretable result.

Results

Among the 79 *M. tuberculosis* isolates from untreated cases 8% (6) were MDR and among 325 previously treated cases; 24% (78) were MDR. MDR was found significantly high in 25-35 years age group and common in male compared to female. RFLP result showed that out of 31 isolates 39% (12) were Beijing family type, 26% (8) were single banded, and 23% (7) were Heterogeneous (h) type; which is indigenous to Nepal. There was significant relationship between MDR TB and confluent growth in culture. Molecular typing showed Beijing type is the most common type found in Nepal; which is more resistant to Rifampicin and MDR than others.

Conclusions

In spite of good tuberculosis control programme MDR tuberculosis is still a challenge to TB control programme in Nepal, which is more common in active and motile population.

MDR-TB/HIV

IMPACT OF A PUBLIC ANTIRETROVIRAL PROGRAM ON TB/HIV MORTALITY: BANTEAY MEANCHEY, CAMBODIA

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2 – Centers for Disease Control and Prevention (Atlanta, Georgia)

3 - Thailand MOPH – U.S. CDC Collaboration (Bangkok, Thailand)

4 - Centers for Disease Control and Prevention (Phnom Penh, Cambodia)

Objective:

Cambodia has the highest HIV prevalence (1.9%) and TB incidence (508/100,000) in Asia. Banteay Meanchey is a rural province in Cambodia with high HIV prevalence among antenatal clinic attendees and other surveyed groups. Antiretroviral therapy (ART) was introduced in Banteay Meanchey in December 2004. We sought to assess the impact of ART on TB treatment outcomes.

Methods:

We reviewed TB program records of all patients newly diagnosed with TB in 2004 before the implementation of public antiretroviral clinics and in 2005, after these clinics were available. We compared mortality rates during TB treatment by HIV status and year of TB diagnosis.

Results:

A total of 1202 patients were newly diagnosed with TB. Among patients initiating TB treatment in 2004, 38/102 HIV-infected TB patients (37%) died, compared to 12/237 (5%) HIV-uninfected TB patients (relative risk [RR] 7.5; 95% confidence interval [CI] 4.1-13.8). In 2005, 42/237 (18%) HIV-infected TB patients died, compared to 12/243 (5%) HIV-uninfected TB patients (RR 3.6, 95% CI 2.0-6.8). From 2004 to 2005, mortality rates were unchanged for HIV-uninfected TB patients, but decreased from 37% to 18% for HIV-infected TB patients ($p < 0.01$).

Conclusions:

Death rates for HIV-infected TB patients dropped dramatically in Banteay Meanchey from 2004 through 2005, coincident with the introduction of ART. Although individual patient data were not available, the stability of death rates in HIV-uninfected TB patients during the same period supports the hypothesis that ART contributes substantially to improved TB program outcomes in a TB/HIV syndemic.

MDR-TB/HIV

MULTI-DRUG RESISTANT TUBERCULOSIS (MDR-TB) IN ST. LUKE'S MEDICAL CENTER:

A TWO-YEAR RETROSPECTIVE STUDY

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Objective:

This study is primarily intended to establish the incidence of multidrug resistant strains of *Mycobacterium tuberculosis* isolated at St. Luke's Medical Center during the period of January 2005 to December 2006.

Methods:

A retrospective search of our institution's laboratory records for cultures of *Mycobacterial* growth was performed and the susceptibility and resistance patterns of the positive cultures were documented.

Results:

In 2005 and 2006, the total number of specimens received for *Mycobacterial* culture was 1,602, from which, there were 138 (8.61%) cases with positive cultures for *Mycobacterium tuberculosis* (MTB). Drug resistance was noted in 55.80% (77) of 138 isolates tested, including 5.80% to isoniazid, 7.25% to rifampicin, 5.80% to streptomycin, and 5.80% each to ethambutol. Multi-drug resistance (MDR) was noted in 10.87% of cases, with the following resistance patterns: IR (4.35%), IRE (2.90%), SIRE (2.90%) and SIR (0.72%).

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Conclusion:

The incidence of multi-drug resistant strains of *M. tuberculosis* during the two-year period of 2005-06 was 10.87%. *M. tuberculosis* infections continue to contribute significantly to the morbidity and mortality of Filipinos. Therefore, the emergence of multi-drug resistant strains of this pathogen poses a greater public health burden and warrants continued surveillance programs that will monitor the efficacy of the local TB control program.

MDR-TB/HIV

CONTROL OF TB-HIV CO-INFECTION IN DALI, YUNNAN PROVINCE, CHINA

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Objectives:

To improve the health status of TB-HIV patients and to prevent TB and HIV transmission in high HIV prevalence city.

Background:

By the end 2004, the accumulated reported number of HIV infected was 28391 in Yunnan, which is one of the two provinces that have >20000 HIV-infected cases. To improve the health status of TB-HIV patients and to prevent TB and HIV transmission in high HIV prevalence city, TB-HIV prevention and control activities was introduced and implemented in Dali city in Yunnan province from Sep-2006 to Feb-2007.

Methods:

HIV patients receive TB disease screening and TB patients receive HIV counseling and testing. Regular treatment of anti-TB or anti-HIV has given to co-infectious patients based on WHO recommendation.

Results:

Of 724 HIV/AIDS patients, 377 had TB symptoms detected by uniform screening questionnaire, and 67 TB patients were diagnosed and detection rate was 17.8% (67/377).

159 TB patients were given HIV counseling, and 146 of them accepted HIV testing (146/159). 4 patients were confirmed HIV antibody test positive, and detection rate was 2.2% (4/185).

Conclusions:

In order to detect the TB-HIV patients as early as possible in those regions with HIV high prevalence, the more effective method is to provide TB screening program for HIV patients as much as possible.

MDR-TB/HIV

TB/HIV CO-INFECTION IN A PRIVATE TB CLINIC

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As the fourth most populated country in the world; contribute the third biggest number of Tuberculosis (TB) cases after India and China. HIV epidemic status became to concentrated level in 2006. HIV related TB cases contribute 60 % as the most opportunistic infection among HIV infected individuals that can be cured and prevented. Directly Observed Treatment Short-course chemotherapy (DOTS) strategy started in 1995. Indonesian Association Against Tuberculosis (PPTI), adopted DOTS strategy in 1997, established 2 DOTS PPTI clinic in Jakarta. International Standard of TB Care (ISTC) has translated and adopted mid 2006 need further socialization for better prevention and care.

PPTI clinics in Jakarta started DOTS implementation in 1998, reach more than 90% cure rate with less than 3% discrepancy. Many smear negative

patients with unclear chest x-ray were suspected to be AIDS, but not until 2004 when Voluntary Counseling and Testing (VCT) put in place, Human Immune Deficiency Virus (HIV) infected patients could be diagnosed.

Up to March 2007; 49.2% new patients were at high risk group, from those, 97.8% got VCT and 498 (around 20%) had HIV positive test result. 70% were Injecting Drug Users (IDU) as risk factor followed by 26% sex. Those patients were possibly HIV-related TB cases as most of them came in severe health conditions with smear negative results.

Conclusion:

Universal access of TB care in TB clinic as well as VCT clinic in a comprehensive care is important to have better service quality.

MDR-TB/HIV

THE INFLUENCES OF HEPATITIS B AND/OR C VIRUSES TO ANTI-TUBERCULOSIS THERAPY IN PATIENTS COINFECTED TUBERCULOSIS AND HIV/AIDS

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From 09/2004 to 09/2005, 148 tuberculosis and HIV (TB&HIV) patients with hepatitis B and/or C viruses were admitted, in which include 56 cases (37,84%) with latent viral hepatitis and 92 cases (62,16%) in active phase. TB&HIV patients with hepatitis B and/or C viruses responded badly to anti-tuberculosis therapy (52,7%). Simultaneously, irresponsive risk with anti-tuberculosis therapy in TB&HIV patients with active hepatitis B and/or C viruses were 3,67 times as much as those with latent viral hepatitis and the difference was statistically significant ($P=0,0144$; $RR=3,67$; $95\%CI: 1,891-6,533$). Among 99 cases treated anti-tuberculosis drugs at the first time, 35 cases caused drug induced hepatitis and adverse effects with anti-tuberculosis drugs (35,35%). Besides, risk of drug-induced hepatitis and adverse effects with anti-tuberculosis drugs in active viral hepatitis patients with liver functional disorder was 1,98 times as much as latent viral hepatitis patients and this difference was also statistically significant ($P=0,0325$; $RR=1,98$; $95\%CI: 0,273-0,881$). As a consequence, viral hepatitis have decreased effectiveness of anti-tuberculosis therapy and increased complications in TB&HIV patients.

MDR-TB/HIV

ASSOCIATION BETWEEN DISTANCE TO HIV TESTING SITE AND UPTAKE OF HIV TESTING FOR TUBERCULOSIS PATIENTS IN CAMBODIA

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Objective

Cambodia has the highest HIV prevalence (1.9%) and TB incidence (508/100,000) in Asia; 10% of TB patients are HIV-infected. For HIV testing, TB patients are referred to the nearest testing center (VCCT). HIV testing is not available at TB clinics. We sought to assess the impact of distance to the HIV testing center on HIV testing rates.

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Methods

We analyzed data on newly diagnosed TB patients within 25 clinics in Banteay Meanchey Province, Cambodia to determine the proportion of TB patients tested for HIV infection, stratified by distance between the TB clinic and HIV testing site.

Results

Of 1453 TB patients with no previous history of HIV testing, 869 (60%) were tested for HIV infection. Of 805 TB patients with no VCCT on-site, 376 (47%) were tested for HIV infection, compared to 491 (76%) of 648 TB patients treated at TB clinics with a VCCT on-site (relative risk 0.62, 95% confidence interval 0.57-0.67). When stratified by distance to VCCT, HIV testing rates were all lower than sites in which a VCCT was on-site: HIV testing rate 50% for VCCT sites <15 minutes driving distance from the TB clinic, 33% for 15-30 minutes, and 57% for >30 minutes.

Conclusion

TB patients treated at clinics which lack on-site HIV testing are less frequently tested for HIV, even when HIV testing is available only a short distance from the TB clinic. On-site HIV testing should be scaled-up rapidly at TB clinics in Cambodia.

MDR-TB/HIV

COHORT STUDY OF HIV POSITIVE AND HIV NEGATIVE TUBERCULOSIS PENANG HOSPITAL: COMPARISON OF CLINICAL MANIFESTATIONS

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Introduction

WHO stated that tuberculosis is the only opportunistic organism that is able to spread to HIV negative individuals. Worldwide, HIV infection is the primary risk factor for development of active TB. HIV induced immuno-suppression modifies the clinical presentation of TB.

Objective

To look at the differences in clinical presentation of TB based on their HIV status.

Methodology

This retrospective study looked at cases of adult active TB treated in the Respiratory Unit, Penang Hospital from January 2004 to December 2005.

Results

Of the 820 patients treated for active TB, 103 patients (13 females; 90 males) are HIV infected patients (12.6%). 19.4% of HIV infected patients with CD4 count > 200 cells/mm³ developed TB. Majority of HIV co-infected patients presented with prolonged, insidious and non specific symptoms like weight loss, fever and night sweats.

The clinical picture of TB depended on the HIV status and associated degree of immunodeficiency. Compared to the non HIV infected population, patients with HIV-TB coinfection are more likely to have extra-pulmonary manifestation (P=0.048), atypical chest radiographs (P = 0.0001) and negative AFB smear result (P=0.0001). During active TB, the Mantoux test was only helpful for those non HIV infected patients (P=0.0001). In our series, the status of AFB culture did not reveal obvious correlation with the HIV status.

Conclusion

To diagnose TB in HIV patients, we need to have high index of suspicion.

MDR-TB/HIV

DEVELOPMENT OF AN IN-HOUSE REVERSE LINE BLOT HYBRIDIZATION (RLBH) ASSAY FOR IDENTIFICATION AND MULTI DRUG RESISTANCE TESTING IN *M. TUBERCULOSIS* COMPLEX ISOLATES

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Objective:

To design and standardize an in-house genotypic Reverse Line Blot Hybridization (RLBH) assay for identification of mycobacteria and to detect drug resistance to Rifampicin (RIF), Isoniazid (INH), in clinical isolates of *M. tuberculosis* complex.

Methods:

Oligonucleotides specific for identification of *M. tuberculosis* complex and 7 wild type and 19 mutant alleles of selected codons in the genes *rpoB*, *inhA*, *katG*, were designed and immobilized on a nylon membrane. The RLBH assay conditions were optimized using different standard ATCC strains and known wild type and mutant alleles. Two hundred and sixty four *M. tuberculosis* complex isolates were analysed by RLBH assay and results were confirmed by sequencing.

Results:

Of the 264 *M. tuberculosis* complex isolates analysed for drug resistance 60% were resistant to one or more antiTB drugs. Mutation screening of the *rpoB* gene for RIF resistance revealed that 98% of the strains had mutations in the 80 bp core region either at codon 531,526 or 516. Among INH resistant strains 84% showed mutation G→C at codon 315 of *katG* gene, 10% showed -15 C→T mutation in the promoter region of *inhA* gene. Results obtained by RLBH assay showed 99% concordance with phenotypic culture susceptibility results performed by BACTEC 460 TB system.

Conclusion:

We have successfully standardised an in-house RLBH assay that will be useful for patient management as well as to compile genotypic epidemiological data.

MDR-TB/HIV

COMPARISON OF PHENOTYPIC AND GENOTYPIC METHODS FOR PYRAZINAMIDE SUSCEPTIBILITY TESTING

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Objective:

To compare three different techniques viz. Phenotypic Pyrazinamidase assay and MGIT 960 TB with genotypic *pncA* gene sequencing to check Pyrazinamide (PZA) resistance in *M. tuberculosis* complex isolates at our tertiary care centre.

Methods:

30 consecutive PZA resistant and 28 consecutive PZA susceptible isolates reported for PZA susceptibility testing by MGIT 960 TB system were included in this study. Presence of active pyrazinamidase enzyme was sought by using the Wayne assay. The *pncA* gene was amplified by PCR and then sequenced to screen mutations. All the PZA resistant isolates were further spoligotyped to identify *M. bovis*, if present.

Results:

Of 30 PZA resistant strains by MGIT 960, 29 were Wayne assay

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negative and one was positive. Of the 30 susceptible PZA strains 6 were Wayne assay negative reporting false resistance. MGIT analysis found that of the 29/30 PZA resistant isolates PZA-resistant isolates had diverse nucleotide changes scattered throughout the *pncA* gene, however one isolate did not show any mutation. Of the 28 phenotypically susceptible isolates, 21 were wild types whilst 7 isolates showed the presence of a silent mutation C-T at codon 195. Twelve mutations found in this study had not been described earlier. Not single isolate of *M. bovis* was detected among PZA resistant *M. tuberculosis* complex isolates.

Conclusion:

PZA susceptibility using MGIT 960 showed good concordance with sequencing results compared to Wayne assay. An alarmingly high proportion of *M. tuberculosis* isolates at our settings are PZA-resistant.

Diseases of the Pleura

AUDIT ON THE INITIAL MANAGEMENT OF SPONTANEOUS PNEUMOTHORAX IN HOSPITAL SELAYANG

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Objectives:

To assess the initial management of Spontaneous Pneumothorax (SP) by Hospital Selayang doctors.

Methods:

A self completed questionnaire regarding the initial management of SP was circulated among 50 doctors. A total of 47 completed questionnaires were used for analysis.

Results:

13(27.6%) of the respondents were aware of any existing guidelines on management of SP. The sizes of pneumothorax were described in percentages, relative size and fractions. Responses to the initial management of SP are as follow:

SYMPTOMATIC PATIENT WITH LARGE PRIMARY SP:	N (%)
1- Send patient home with advice and repeat chest x-ray	1 (2.13%)
2- Needle aspiration	11 (23.40%)
3- Insert branula at the 2 nd ICS before chest tube drainage	6 (12.77%)
4- Chest tube drainage	29 (61.70%)

ASYMPTOMATIC PATIENT WITH SMALL PRIMARY SP:	N (%)
1- Send patient home with advice and repeat chest x-ray	27 (57.45%)
2- Needle aspiration	12 (25.53%)
3- Insert branula at the 2 nd ICS before chest tube drainage	2 (4.26%)
4- Chest tube drainage	5 (10.64%)
5- Not answered	1 (2.13%)

SYMPTOMATIC PATIENT WITH LARGE (TENSION) SECONDARY SP:	N (%)
1- Give nebulisers and steroids and assess his response	-
2- Needle aspiration	-
3- Insert branula at the 2 nd ICS before chest tube drainage	23 (48.94%)
4- Chest tube drainage	24 (51.06%)

Conclusions:

There is a lack of awareness in the initial management of SP despite the presence of existing international guidelines. A locally produced guideline may help to reduce the variation in the management of this condition.

Miscellaneous

META-ANALYSIS ON THE USE OF SYSTEMIC CORTICOSTEROIDS IN THE PREVENTION OF POSTEXTUBATION STRIDOR AMONG ADULT PATIENTS

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Objectives:

1. To determine whether intravenous corticosteroids prevent the development of postextubation stridor and subsequent reintubation among adult ICU patients
2. To site the deleterious effects of prophylactic steroid therapy against postextubation stridor.

Background:

Postextubation stridor characterizing laryngeal edema can prolong ICU stay and increase mortality rate. This arises from the reactive edema in the glottic or subglottic mucosa from pressure of the endotracheal tube. The use of corticosteroids may offer protection or treatment by virtue of their anti-inflammatory effects. Corticosteroids however are not without adverse effects. Assessment of its efficacy is warranted prior to adoption of this practice.

Methodology:

Literature search using Medline through PubMed, Cochrane Collaboration of Studies and Ovid was done. All meta-analysis and randomized placebo controlled trials using systemic steroids in the prevention of postextubation laryngeal edema, stridor and reintubation among intubated ICU adult patients were retrieved. Methodological quality was assessed and data were extracted independently by two reviewers. Data were analyzed through Review Manager 4.2.

Results:

Only three randomized trials were accepted for the study. Prophylactic use of steroids among intubated patients prevents the development of laryngeal edema and postextubation stridor (RR 0.67, 95% CI [0.46, 0.97]). Risk for reintubation is decreased with intravenous corticosteroids (RR 0.54 95% CI [0.30, 0.94]). The studies were homogenous (P=0.66).

Conclusion:

Prophylactic use of systemic corticosteroids prevents post extubation laryngeal edema, stridor and need for reintubation especially among high risk populations (cuff leak volume >24% of the tidal volume). There are no obvious side effects from this recommendation.