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Tuberculosis

WHY THE TB INCIDENCE RATE IS NOT FALLING IN NEW ZEALAND?

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Objectives:
To describe the epidemiology of TB in New Zealand (NZ) and to assess the role of migration from high-incidence countries, HIV/AIDS infection and prevalence of multi-drug resistant (MDR) organisms as contributors to TB incidence.

Method:
TB notification data for the period 1995 to 2004 and population data from the 1996 and 2001 census were used to calculate incidence rates of TB by age and ethnicity, country of birth and interval between migration and onset of disease. Published reports of MDR-TB for the period 1995 to 2004 were reviewed. HIV surveillance data held by AIDS Epidemiology Group were matched with TB surveillance data to measure the extent of TB and HIV/AIDS co-infection.

Results:
Migration of people from high-TB incidence countries is the main source of TB in NZ (two-third of all cases). Of those immigrants who develop TB, a quarter does so within a year of migration. Rates of local TB transmission and reactivation of old disease are declining steadily for NZ-born populations, except for NZ-born Maori and Pacific people under 40. HIV/AIDS and MDR-TB are not significant contributors to TB incidence in NZ.

Conclusion:
TB incidence is not decreasing in NZ mainly due to migration of TB infected people from high incidence countries and subsequent development of active disease in NZ. There is no indication that refugees and migrants from Africa, Asia and Pacific Island countries are spreading the disease to other groups in NZ. These findings emphasise the importance of regional and global TB control initiatives.

Tuberculosis

THE CAUSE OF TUBERCULOSIS AS PERCEIVED BY THE PATIENTS AFFECTED BY THE DISEASE

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Introduction:
Tuberculosis is still a major health concern in a developing country like India. Tuberculosis like leprosy is still not considered a disease caused by bacteria. It is a social stigma. This cross sectional study is a cultural epidemiological study which aims in revealing the etiology of the disease as perceived by the patients.

Methods:
110 patients diagnosed to have tuberculosis either by sputum test or radiological findings or both in a tertiary care centre, Government Hospital of Thoracic Medicine, Otteri, between 24/12/2006 and 6/01/2007 were selected. Inclusion criteria- all patients diagnosed to have Tuberculosis. Exclusion criteria- patients waiting for results and those admitted for respiratory problems other than Tuberculosis.

Results:
GENDER-WISE PRESUMTION OF CAUSE OF TUBERCULOSIS

	MALE (%)	FEMALE (%)	TOTAL (%)
Ingestion of food	12.2	6.4	10.7
Alcohol	21.4	0	15.7
Smoking	19.8	0	14.6
Physical exertion	1.5	8.5	3.4
Work	7.6	19.1	10.7
Prior illness	0.8	4.3	1.7
Psychological stress	3.1	19.1	7.3
Environmental contamination	7.6	2.1	6.2
Contact	5.3	6.4	5.6
Airborne exposure	12.2	8.5	11.2
Traditional/ cultural	0	2.1	0.6
Sexual	1.5	4.3	2.3
Others	4.6	10.6	6.2
Cant say	2.3	8.5	3.9

Only 11.2% of all the patients realize the true nature of the disease and the correct etiology. 30.3 % of the males still believe their lifestyle characteristics like smoking and drinking alcohol is the reason they developed tuberculosis. Among the females, 19.1% of them think that they developed the disease due to their occupation and another 19.1% attribute the cause as psychological stress.

Conclusion:
The ignorance and the lack of awareness about this disease are well portrayed through this study. Irrespective of the various national programmes, people still don't know that tuberculosis spreads by droplet nuclei. Only when people are informative and know the mode of spread of disease will they be able to take proper precautions to avoid the disease. So, there should be widespread awareness of Tuberculosis to prevent the spread of the disease.

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TUBERCULOUS ADENITIS IN THE HEAD & NECK REGIONS PRESENTED IN SUBURBAN OF KUALA LUMPUR

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Aim:
To review the prevalence of tubeculous infection presenting as masses the head and neck region in to the ORL Department, Hospital Selayang which is in the northern part of Kuala Lumpur suburban.

Method:
A retrospective study was conducted to review cases that attended the ORL Department, Hospital Selayang, presenting with a mass or masses in the head and neck region in January 2000 to December 2006. These cases were analyzed to determine the process of arriving at the final diagnoses.

Results:

The common causes of mass in the head & neck region are reactive lymphadenitis 20.9% benign parotid tumour 14.5% and tuberculous adenitis 6.0 %. Among the tests performed to investigate these patients are: Fine needle aspiration cytology (FNAC), Erythrocyte sedimentation rate, Mantoux test and histological examination of tissue biopsy.

Discussion:

The Hospital received patients referred from the surrounding communities High incidence of Tuberculous adenitis are among the foreign workers. The infection was also detected in tonsillectomy specimen which stressed the importance of reviewing histology of routine tonsillectomy specimens.The value of investigative tools such as intradermal tuberculin test is reviewed. The use of FNAC is again highlighted but has major limitation of technical requirement. ESR is a good screen tool but has low specificity.

Conclusion:

The common causes of mass in the head & neck region are benign parotid tumour, reactive lymphadenitis and tuberculous adenitis. FNAC is a valuable investigative tool.

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TUBERCULOSIS IN BANGLADESH: A 40 YEAR REVIEW

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Objective:

Review the epidemiology of TB in terms of incidence, prevalence, care seeking patterns, case detection and treatment success rates, drug resistance patterns and mortality during 1966-2006.

Methodology:

Both published and unpublished reports based on studies conducted by different organizations, including NTP of the Government of Bangladesh, NGOs and other research organizations, were reviewed.

Results:

The 1964-66 and 1987-88 nationwide surveys documented sputum-positive TB prevalence rates of 318 and 870 per 100,000 people respectively. Recent estimates ranged from 24 to 150 per 100,000 people. The case detection rate under DOTS increased from 29.2% in 1993 to 61% in 2005. The DOTS expansion also increased throughout the country which was 90% in 1999 and 99% in 2004. The treatment success in TB was 81% in 1993 and reached 89% in 2004. There was a marked gender difference in TB case detection having female-male ratio ranged from 0.24 to 0.39. Resistance to any anti-TB drug ranged from 18.6% to 48.4%, and MDR-TB was from 2.0% to 5.5% (1998-2005). More than 80% of clinical care in suspected TB cases was provided initially by the private sector. Deaths due to TB comprised 3.6% of all deaths among persons aged $\geq$ 15 years, and the age-standardized TB mortality was 19.15 to 46.05 per 100,000 people among males and 2.19 to 23.72 among females (1988-2003).

Conclusions:

The major challenges remain to further improve case detection, development of rapid diagnostics methods, and diagnosis and management of MDR-TB cases to save hundreds of thousands of lives in Bangladesh.

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SMEAR NEGATIVE TUBERCULOSIS; PREVALENCE; ETHIOPIA

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Several reports form sub-Saharan African countries have found an increased prevalence of smear negative pulmonary tuberculosis (PTB) as well as extrapulmonary TB particularly in their HIV infected patients. Early identification of persons who have PTB, whether smear positive or negative, is desirable both to enable early detection and initiation of therapy. Conversely, correct prediction of persons who are likely to have TB is important to have appropriate empiric therapy. Published information is very sparse concerning smear negative pulmonary tuberculosis (SNPTB) in Ethiopia. Therefore, the present cross sectional study was conducted in order to determine the prevalence of SNPTB among suspected PTB patients (n=297) visiting St. Peter Specialized Tuberculosis Hospital, Addis Ababa, Ethiopia between November 2004 and October 2005. The likelihood of PTB in persons with negative sputum smears results in terms of their demographic, clinical, radiologic and other laboratory data is also discussed. Among the 297 PTB suspects, screened by direct smear microscopy, 247 (83.2%) have had negative smear results ("smear negative PTB suspects"). The mean age of the SNPTB suspects was 36.28 years (range 16-80 years). An overall male to female ratio was 0.9:1. Cough was the most commonly reported symptom (99.6%); followed by fever (92.3%), night sweat (87.9%), weight loss (82.2% and hemoptysis (7.3%). The duration of cough varied between three weeks and more than 6 weeks. Abnormal CXR findings and elevated ESR were observed in 79.4% and 58.7% SNPTB suspects, receptively. The plasma CRP value showed reactive (positive) result in 75 (30.4%) patients. The overall prevalence of PTB among smear negative tuberculosis suspects was 43/247 (17.4%), which is confirmed by conventional and/or automated culture methods. The *Mycobacterium* species identified were *M. tuberculosis* (n=40) (93%) and non-tuberculous mycobacteria (NTM) (n=3) (7%). The sensitivity, specificity, positive and negative predictive values of clinical diagnosis combined with chest radiography was 56.7%, 94.3 %, 63.6 % and 92.5 %, respectively when compared with culture result (gold standard). Statistically significant association with SNPTB was observed only regarding sex (being male) and persistent cough and CXR findings. A statistically significant difference was not demonstrated between BACTEC

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MGIT 960 and LJ medium in terms of recovery rate of *Mycobacterium* spp. from sputum samples (p> 0.05). The mean (range) detection time of all Mycobacteria isolates was 11.7 (8-32) and 42 (28-56) days with BACTEC MGIT 960 and LJ medium, respectively (p< 0.05). The rates of contamination were 6.1% and 12.9% for LJ medium and BACTEC MGIT 960, respectively (p<0.01). Thirty-seven *M. tuberculosis* isolates were subjected for susceptibility testing to Isonaizid, Rifampicin, Ethambutol and Streptomycin. Of these, 70.2% showed no resistance to any of theses drugs. No MDR-TB stains (resistant to INH and Rifampicin) were

observed in this study. In conclusion, smear negative cases will be a challenging problem for clinicians as well as National Tuberculosis Control Program. Therefore, there is a need to develop a scheme to determine the most cost-effective approaches for the diagnosis and treatment of smear negative PTB such as improving the selection of patients with TB and other conditions, CXR reading and interpretation, specimen collection, laboratory diagnosis, developing an algorithm for managing TB suspects and applying quality control schemes.

Key words:
Smear negative tuberculosis; prevalence; Ethiopia

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HOMEOPATHY AS AN ADJUVANT TO CHEMOTHERAPY IMPROVES CLINICAL OUTCOME IN RELAPSED PULMONARY TUBERCULOSIS

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Objectives:
To investigate efficacy of homeopathy as complementary medicine in relapse pulmonary tuberculosis

Methods:
In randomized placebo control study, 47 patients with relapse pulmonary tuberculosis were given homeopathy (24) or placebo (23) for 8 months in addition to conventional chemotherapy.

Primary outcome were sputum conversion, weight gain and haematological assessment (Erythrocytic sedimentation rate and hemoglobin). Secondary outcome measures were symptoms of cough, night sweat, chest pain, breathlessness, haemoptysis, fever and quality of life.

Measurements were carried out before and after 2, continuing for 6 mo of anti- tuberculosis treatment. Patients were also followed for 3 months after anti tuberculosis treatment.

Results:
compared with placebo group the homeopathy group showed significant improvement defined as increased body weight (p< .000), higher sputum conversion rate (87.5%) and faster reduction of symptoms (p< .000). There was a significant improvement in homeopathy group in all the domain of quality of life compared to placebo. At follow up 12.5 % patients in homeopathy were remained sputum positive compared to 52.17% in placebo.

Conclusion:
Homeopathy as a supplement to anti TB chemotherapy given to relapsed pulmonary tuberculosis patients may represent a valuable and cost effective treatment strategy.

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A STUDY ON PATIENTS KNOWLEDGE OF TUBERCULOSIS AND TIMELINE TO TREATMENT

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Purpose:
To assess the patients level of knowledge and to determine factors relating to delay in diagnosis or treatment of tuberculosis.

Method:
A cross sectional survey involving 271 patients with Pulmonary Tuberculosis being treated at chest clinics in all 14 government hospitals in Perak between May and June 2006. A self administered questionnaire was used to reveal information regarding their disease and knowledge.

Results:
Most of the patients were Malay(62.4%), male(67.9%) with secondary school education(48.7%),married(59.8%) and from urban area(54.6%). Majority of the patients had at least 4 or more symptoms of TB (74.5%). Many (48.7%) had symptoms for at least a month or longer. Most of them had sought treatment from a government clinic or hospital (66.4%),some 24.7% visited private practitioners, and 7% sought traditional healers as their initial carer. Majority had been checked for sputum or Chest Xray at their first visit (64.2%). Xrays were mostly reported as of moderate severity (45.4%), minimal (29.2%) followed by severe(23.2%).Most of them (62.3%)had been diagnosed as TB by the first 2 visits (24.7% , 37.6%, 19.9%, 10.7% respectively according to visit).Most patients (67.2%) were unaware about the existence of tuberculosis infection previously. On the patients factors relating to delay in seeking treatment, the most common factor was lack of knowledge or concern (68.6%). Most of the patients(78.2%) knew the mode of transmission of TB. Almost all patients (99.3%) believed that TB can be cured, but only (88.6%) knew that they have to be treated for at least 6 months for a cure.

Conclusion:
The study shows that most patients been diagnosed fairly early on seeking treatment (82.2% by third visit), but a staggering 67.2% were unaware of the existence of tuberculosis infection and a similar number (68.6%) cited lack of knowledge and concern for delay in seeking treatment. This shows that there is a need to educate the public on the nature of the disease and the importance of early treatment.

Keyword:
Tuberculosis, Knowledge, Delay in Treatment

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NOVEL MUTATIONS IN EMBB GENE OF ETHAMBUTOL RESISTANT MYCOBACTERIUM TUBERCULOSIS AND THEIR ASSOCIATION WITH DEGREE OF ETHAMBUTOL RESISTANCE; AN INDIAN EXPERIENCE

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Setting:
Microbiology lab at a tertiary level health care hospital

Objective:
To assess the prevalence and level of ethambutol (EMB) resistance with frequency of *embB* gene mutations in ethambutol resistant strains of *Mycobacterium tuberculosis*

Result:
Of 362 isolates of *M. tuberculosis* from 581 sputum samples from same number of pulmonary tuberculosis cases 61 (16.8%) were resistant to ethambutol singly or in combination with other primary anti tubercular drugs. Mono resistance to ethambutol is rare. Most of the ethambutol resistant strains were resistant to two or more anti-tubercular drugs. High level of ethambutol resistance was noted in 60% cases. Of the 61 EMB resistant strains, 10 randomly selected strains were tested for mutation analysis by single stranded conformational polymorphism (SSCP) and direct DNA sequencing of amplified product of 364bp from embB gene. SSCP showed altered mobility in 8/10 isolates and sequence analysis

revealed 10 novel mutations in codon 221, 225, 227, 271, 272, 281, 282, 287, 293 and 294 respectively, within the embB gene (gene bank of NCBI/ PUBMED accession numbers, EF376189, EF376190, EF376191, EF376192 and EF376193).

Conclusion:
We report high prevalence of ethambutol resistance in clinical *Mycobacterium tuberculosis* strains, occasional occurrence of high-level ethambutol resistance, coexistence of MDR with ethambutol resistance and frequent prevalence of novel mutations in *emb B* gene. Some of these findings definitely require immediate attention for better understanding of exact mechanism of EMB resistance. Further, clinical significance of emb B mutations should be explored before using mutations in this gene as diagnostic marker of EMB resistance or as predictor of other anti-tubercular drug resistance.

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DRUG-RESISTANT MYCOBACTERIUM TUBERCULOSIS IN TAIWAN, 2003-2005

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Introduction:
In order to understand the trend of combined treatment efficiency and the prevalence of drug resistance, a laboratory-based Taiwan Surveillance of Drug Resistance in Tuberculosis (TSDRTB) program was initiated in 2003. Nine contract laboratories were included in the system.

Methods:
In this survey, one Mycobacterium tuberculosis isolate was obtained for each patient. A total of 3,699, 3,885 and 4,219 isolates, approximately 50% of annual M. tuberculosis isolates, respectively in 2003-5, were undergone drug susceptibility testing in the system. Since clinical data were not available, only combined drug resistance rates were analyzed.

Results:
The 2003-5 survey demonstrated that the combined drug resistance rates (%) were: 9.5, 11.3 and 10.1 to isoniazid (INH), 5.8, 4.3 and 2.1 to ethambutol (EMB), 6.4, 7.5 and 6.2 to rifampin (RMP), 9.6, 10.6 and 9.8 to streptomycin (SM), 20.0, 12.8 and 18.1 to any drug, and 4.0, 5.3 and 4.1 to multiple-drug resistance (MDR), respectively. Resistance to any single drug were 12.3%, 11.9% and 11.1%, to any two drugs were 4.8%, 4.9% and 4.4%, to any three drugs were 2.2%, 2.6% and 1.6%, and to any four drugs were 0.7%, 1.0% and 0.9%, respectively. Whereas, in the third global drug resistance surveillance report, the median prevalence of combined drug resistance were: 6.6% to INH, 1.3% to EMB, 2.2% to RMP, 6.1% to SM, 10.4% to any drug, and 1.7% to MDR.

Conclusion:
The observed combined drug resistance rates were higher than the global median prevalence ones. The direct observed treatment, short-course strategy has been implemented to assure optimal treatment and case management of tuberculosis cases since 2006.

Tuberculosis

SEASONALITY IN DIAGNOSIS OF PULMONARY TUBERCULOSIS AMONG MIGRANT WORKERS IN KUWAIT

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Background:
There is paucity of data on seasonal variation in of pulmonary tuberculosis (PTB) in developing countries contrary to recognized seasonality in the PTB notification in western societies. This study examined the seasonal variations in diagnosis of PTB among migrant workers from developing countries entering in Kuwait.

Methods:
Monthly aggregates of chest-x-ray results for consecutive migrant workers tested between January 1, 1992 and December 31, 2006 were analyzed. Assuming PTB prevalence followed a seasonal pattern described by a simple harmonic curve, we assessed the amplitude (α) of the sinusoidal oscillation and the time at which maximum (θ^o), PTB positivity occurred using Edward's test. The adequacy of the hypothesized sinusoidal curve was assesses by χ^2 goodness-of-fit test.

Results:
During 10 years period, the mean (±SD) monthly PTB prevalence (per 100,000) among migrant workers was 2241± 463. The maximum PTB prevalence was observed in third week of April (θ^o = 107.33°; P = 0.001). The amplitude (α = 0.445) of simple harmonic curve showed 44.5% difference in PTB prevalence from mean to maximum. The peak to low ratio of PTB prevalence was 2.60 (95% confidence interval: 2.49 - 2.72). The χ^2 goodness-of-test revealed that there was no significant (P> 0.05) departure of observed frequencies from the fitted simple harmonic curve.

Conclusion:
Significant seasonality in the diagnosis of PTB among the migrant workers occurred in late April. Plausible biological explanations and public health implications of this finding are discussed.

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EXPERIENCES IN CONDUCTING TUBERCULOSIS SURVEILLANCE IN AN URBAN AREA IN BANGLADESH

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Objective:
Describe experiences in conducting tuberculosis surveillance in an urban area under Dhaka City Corporation during 2003-2005.

Methodology:
A tuberculosis surveillance system has been set up in Kamlapur, a densely populated area in the south-eastern part of Dhaka city, where ICDDR, B had a health and demographic surveillance system (HDSS). Trained field workers visited study population every three months and interviewed all persons > 15 years to identify suspected cases of tuberculosis (cough > 21 days) and refer them to nearest DOTS centers for sputum examination.

Results:
Among 50,000 population who had personal identification cards under HDSS, 68.7 % were above 15 years. At first round, only 45 % of the target population could be contacted, 41 % were absent and 14 % were migrated. Interviews revealed that most of the absentees would be available at midnight. Measures taken to reach the absentees included visiting at odd hours, on holidays, by appointments and visiting at workplaces. Despite all these efforts up to 71 % of the target population could be reached so far. Although the male female ratio in the study population was similar, their participation ratio was about 3:5. Absentees were mostly male and usually working late hours at night. However, despite these absences, the overall prevalence of suspected tuberculosis

cases was 1.9 %, higher among males than females (3.3 % vs. 1.1%).

Conclusions:

Innovative measures are needed under urban TB surveillance not only for adequate coverage but also to enhance early case detection particularly among males.

Tuberculosis

MEDIASTINAL LYMPHADENOPATHY: IS THE SURGICAL BIOPSY NECESSARY?

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Objective:

To establish the usefulness of surgical biopsy in patients with Mediastinal Lymphadenopathy (ML).

Method:

142 patients with isolated ML found on CT scan underwent either mediastinoscopy (127) or anterior mediastinotomy (19) between 1999 and 2006. In 4 patients both procedures were performed. There were 87(61.3%) males, age ranged from 16 to 89 (mean 50) years and 66(46.3%) patients were of Asian origin.

Results:

One (0.7%) elderly patient died 7 days after surgery from a cause not related to her operation and emergency sternotomy was required to control bleeding in 1(0.7%) patient with tuberculosis. Hospital stay ranged from 0 to 8 (mean = 2) days. Sarcoidosis was found in 31(21.8%), granulomatous inflammation in 26(18.3%), tuberculosis in 24(16.9%), normal lymphatic tissue in 24(16.9%), malignant tumour in 17(11.9%), lymphoma in 9(6.3%) and no lymphatic tissue in 3(2.1%) patients. In patients with the histological diagnosis of granulomatous inflammation the final diagnosis was based on clinical presentation and radiological findings. In Asian patients tuberculosis was diagnosed in 22(33.3%), sarcoidosis in 17(25.8%), granulomatous inflammation in 14(21.2%), cancer in 3(4.5%), lymphoma in 1(1.5%), and other pathology in 9(13.6%) cases.

Conclusions:

In patients with isolated ML, the histological diagnosis is achieved in 79.6% of cases. Tuberculosis is not the cause of ML in a significant number of Asians. For clear diagnosis and to enact appropriate therapy, we recommend surgical mediastinal lymph node biopsy in patients with isolated ML.

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VARIATIONS OF CARE QUALITY FOR INFECTIOUS PULMONARY TUBERCULOSIS IN TAIWAN: A POPULATION BASED COHORT STUDY

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Background:

Effective and efficient care is required to prevent the spread of infectious pulmonary tuberculosis (PTB). We attempted to compare care quality among different healthcare institutions in Southern Taiwan.

Methods:

This study conducted population-based retrospective cohort design. One tuberculosis sanatorium, 2 medical centers, 11 regional hospitals, and 15 district hospitals and primary practitioners in the study area had reported tuberculosis cases, registered from January 1 to June 30 2003. Those cases with sputum positive PTB were followed 15 months after anti-tuberculosis treatment initiation. Meanwhile, Level of conformance with diagnostic guidelines, efficiency of diagnostic and treatment process, and treatment were measured as main outcome. Association was investigated using Chi-square tests, Kruskal Wallis tests, Mann-Whiteney U tests, and multiple logistic regression analysis to evaluate outcome differences among different levels of institutions.

Results:

The analyses included 421 patients. In comparison with patients receiving treatment at medical centers, regional hospitals, and district hospitals/primary practitioners, patients at the Chest Specialty Hospital were more likely to provide at least three sputum specimens (74.1% vs. 48.2%, 36.8%, and 50.0%), shorter workdays examining sputum smears (2.4 ± 2.4 days vs. 2.6 ± 2.1, 4.5 ± 3.1, and 3.5 ± 2.6 days), shorter interval between the first consultation and treatment (10.1 ± 18.3 days vs. 31.0 ± 53.6, 31.2 ± 70.4, and 25.4 ± 37.6 days), and a higher successful treatment rate (92.6% vs. 65.2%, 63.9%, and 68.0%). Furthermore, after adjusting age and gender, the patients treated by the pulmonologists and treated at Chest Specialty Hospital had significantly more successful treatment rate, of which odds ratios were 1.74 and 4.58 respectively.

Conclusion:

Differences in care quality exist among different types of healthcare institutions and among individual physicians. The implementation of practice guidelines should contribute to an improvement in the care quality of the treatment and diagnosis of PTB.

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KNOWLEDGE ATTITUDE AND PRACTICE (KAP) OF THE HEALTH CARE WORKERS AND TUBERCULOSES PATIENTS IN IRAQ TOWARD TUBERCULOSIS

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Aim:

To assess the knowledge attitude and practice of pulmonary tuberculosis patients as well as health care workers (HCWs) toward tuberculosis (TB)

Material And Methods:

Cross-sectional study was conducted on 500health care workers and 500 Tuberculosis patients selected from 259 Primary Health Care Centers. Face-to-face interviewing was carried out using pre tested structural questionnaire

Results:

Acceptable optimum(64.4%) knowledge of TB among patients was found. It is significantly was higher (OR=1.19) in males than females . On the other hand practicing TB as a stigma was still high (54.86).Optimum knowledge of HCWs toward TB was excellent (95.5%). This knowledge was increasing steadily with increased age of HCW and duration of the job elapsed. to reach 100%in certain condition . Physicians and Television were the two most important source of patients information. In addition Education training and supervision of NTP shows good impact on the knowledge

In conclusion kind of practicing and attitude toward TB patients ply a major role in seeking advice and not only knowledge alone

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A SIX MONTHS FOLLOW-UP CHILDREN LESS THAN 6 YEARS OLD IN CONTACT WITH SMEAR POSITIVE TUBERCULOSIS PATIENTS ,TEHRAN-IRAN

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Background:
Current international guidelines recommend 6-9 months of isoniazid (INH) preventive chemotherapy to prevent the development of active tuberculosis in children exposed to smear positive tuberculosis patients. The purpose of this study was to determine adherence to six months of supervised INH monotherapy and outcome in children with household exposure to an adult pulmonary tuberculosis index case in Varamin city.
Methods:
A descriptive study (Cross-sectional) was conducted among household contacts. All children <6 years old in household contact with an adult pulmonary tuberculosis index case were screened for tuberculosis and given supervised INH preventive chemotherapy once active tuberculosis was excluded. Adherence and outcome were monitored.
Results:
In total, 31 index cases and 128 household contact cases were identified; 23 (18%)children <6 years old experienced household exposure, who were fully evaluated. two children were treated for tuberculosis and 15 (12%)children received preventive chemotherapy.Positive smear results in index cases were as follow: 19 cases,1+; 5 cases,2+; 7 cases,3+. A comparison of positive smears in the index cases with need for prophylaxis of contact cases shows that the majority of contacts requiring prophylaxis had close contact with the 1+ index cases.All children who received preventive chemotherapy, completed 6 months of supervised INH monotherapy.
Conclusion:
Strategie of six months of supervised INH preventive chemotherapy is successful., particularly in children who are at high risk to progress to disease following exposure.

Tuberculosis Control Program

EXTERNAL QUALITY ASSESSMENT FOR ENSURING QUALITY DIAGNOSTIC SERVICES

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BRAC Health Programme

Introduction:
AFB microscopy is an effective method for diagnosis of infectious TB cases, monitoring treatment progress and cure rates. Role of laboratory technician is crucial in controlling TB. BRAC has expanded the laboratory network and ongoing quality assurance system to 42 districts collaboration with national TB control programme
Objective:
To ensure accessibility of quality AFB microscopy up to grass root level
Methods:
BRAC in collaboration with national TB control programme established 319 additional peripheral laboratories in the sub districts to cover additional 0.25 million population. 17 EQA laboratories have been established to check the quality of 589 laboratories. To increase accessibility outreach cough collection centers are arranged below sub district level. Training of laboratory workers on AFB microscopy has been conducted. Refresher training on smearing is conducted regularly to maintain smearing quality. An Internal Quality Control team is working to maintain the quality of these laboratory services and quality of DOT. National guidelines are followed at EQA laboratories and feedback is provided subsequently that help to develop technical competency of laboratory staff.
Result:
About 350 lab technicians were trained on AFB microscopy till 2006.2.3 million slides were examined for diagnosis and follow up in 2006. In BRAC supported EQA laboratories 1% discordant slides were found by first controller in 2006 which was 2% in 2005.
Conclusion:
EQA system helps to monitor the quality of laboratory activities. Corrective measures are taken followed by the feed back is helpful for programme performance.

Tuberculosis Control Program

THE TUBERCULOSIS DIRECTLY OBSERVED THERAPY STRATEGY IN QUEZON INSTITUTE , PHILIPPINES

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Objectives:
Tuberculosis has been a major public health problem in the Philippines for the past several decades. The Directly Observed Treatment Short (DOTS) Course was consistently shown to achieve good cure rates of tuberculosis worldwide. The TB DOTS center in Quezon Institute is one of the certified and accredited centers in the Philippines. We aimed to describe the clinical features and outcomes of patients treated under DOTS in Quezon Institute (Q.I.) and define the effectiveness of its implementation.
Methods:
The treatment cards and records of patients who were treated at the Q.I. TB-DOTS center since its accreditation on March 2004 to December 2005 were reviewed. The clinical features and outcomes of the treatment of the patients were evaluated. Descriptive statistics was used in the analysis of the data.
Results :
There were 109 patients treated in 2004 and 117 treated in 2005. Most of the patients were males (79% in 2004 , 75% in 2005), and were in the 21-60 years age bracket (81% in 2004, 84% in 2005). Most of the patients(69% in 2004, 68% in 2005) were new smear- positive cases. Cure was the frequent outcome of treatment (66% in 2004,72% in 2005). The cure rate for sputum smear-positive patients is 90% in both years.
Conclusion:
The cure rate in the Quezon Institute TB-DOTS center in the Philippines is high. The cure rate for sputum smear-positive patients is 90%. The implementation of DOTS in this center is effective and successful.

Tuberculosis Control Program

TREATMENT EFFECTIVENESS FOR PATIENTS OF TUBERCULOSIS IN TAIWAN - A POPULATION BASED COHORT STUDY

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Objective:
This study analyzed the trend of prevalence and side effect among patients receiving treatment for tuberculosis (TB) in Taiwan.
Methods:
This study used data obtained for a population cohort of 18999 from the National Health Insurance starting 1996. Annual prevalence of receiving

TB medication was calculated chronologically. A nest case-control study was also conducted to estimate the risk of newly diagnosed liver diseases considered as the side effect of TB treatment during the follow-up period until December 31, 2003.

Results:
The prevalence for patients with the diagnosis of TB decreased from 430/100,000 in 1996 to 89/100,000 in 2003. Based on the case-control study, we found men were at higher risk than women to develop hepatotoxicity associated with the medication (odds ratio (OR) 1.2, 95% confidence interval (CI)=1.1-1.2). Older population were 4 to 6 times more likely than the younger to have hepatotoxicity effect. Approximately 14% of none alcoholic hepatotoxic effect occurred during the TB medication. The risk was the highest for patients who received the medication of prazinamide (OR=2.0, 95% CI=1.1-3.8).

Conclusion:
This study show that the antituberculosis program in Taiwan has made the cure of patients and thereby may reduce the potential infection in the community.
This medication may also lead to chronic liver symptoms.

Keywords:
chronologic trend, treatment effectiveness, hepatotoxic effect.

Tuberculosis Control Program

DOTS AND ONGOING MOBILIZATION ACTIVITIES OF BRAC IN DHAKA CITY

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BRAC Health Programme

Introduction
DOTS expansion in urban area is one of the challenges in controlling tuberculosis. BRAC expanded its DOTS services in urban and periurban area in Dhaka in collaboration with National tuberculosis program (NTP)

Objective
To ensure DOTS services at urban area by making involvement of different segment of urban society specially the unreached and urban slums.

Method
BRAC is working in Dhaka urban area in collaboration with NTP covering about 31-lac population.20 DOTS centers with TB diagnostic and treatment facilities made functional. Effective partnership has been established with private sector, academic institutes. Services have also expanded to workplaces. To increase accessibility to diagnostic facility BRAC organizes outreach cough collection centers in slum area and factory premises. Conduct orientation program with Pharmacist, cured patient, factory owner, NGO workers, religious & opinion leader. Increase participation of private practitioner for suspect identification and patient referral.

Result
A total 3700 TB cases detected in 2006. Of them 66% were new sputum positive, 3% re treatment sputum positive, 14% smear negative and 15% were extra pulmonary cases. Among them 4% patient were factory workers. 5% patients were referred by private practitioner. Treatment success rate was 94% among patient registered in 2005.
8077 peoples from different groups were oriented on TB in 2006

Conclusion
Availability of different types of providers, higher number of working people and high migration rate still make DOT difficult in urban area. Referral system and persistent involvement of different segment within and outside the health sector need to be strengthened.

Tuberculosis Control Program

ACTION FOR MOBILIZATION IN TB CONTROL

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BRAC Health Programme

Introduction
An effective TB control system is in place; still Bangladesh is struggling to reach the target. BRAC is conducting advocacy, communication and social mobilization (ACSM) activities as an inbuilt component of TB control programme since 2004 to increase early case detection and achieve good treatment outcome.

Objective
Enhance TB Knowledge and awareness among community to reach target of case detection and treatment outcome.

Methodology
BRAC is conducting different types of advocacy workshops, round-table discussion, conferences and talk shows on TV with policy makers, professionals, media personnel, implementers and civil society representatives to enhance awareness and knowledge about TB. Different orientation meetings with village doctors, religious leaders, opinion leaders, girl-guides, scouts and cured TB patients were also conducted. During World TB day rallies and discussion meetings were organized at central and local level. BRAC is conducting community drama to raise awareness and knowledge about TB for illiterate segment of the society in remote areas.

Result
In 2006 BRAC oriented 644 batches of village doctors, 188 batches of religious leaders, 866 batches of opinion leaders, 47 batches of girl-guides and scouts and 1137 batches of cured TB patients. In addition 43 round-table meeting were conducted with journalist, 148 newspaper articles published, developed 5 TV and 4 Radio spots and airing them regularly.112 community drama performed in low performing areas. Following these activities case detection increased from 68 % in 2005 to 80% in 2006 maintaining a cure rate of about 93% in 2005

Conclusion
ACMS activities empowered people affected with TB to change attitude and behavior for increasing early access to services.

Tuberculosis Control Program

ACCOUNTING OF TOTAL COST OF HEALTH SERVICES TO THE TB INPATIENTS IN IRAN (IN MASIH DANESHVARI HOSPITAL, 2005 YEAR)

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Objectives:
- Accounting of total cost of health services to TB inpatients.
- Accounting of percentage of cost in the health services to TB inpatients.
- Propose a plan to control of cost

Method:
This cross sectional retrospective experimental study calculated hospital costs and analyzed the data in forms and tables designed especially for this purpose.
Also data in regard to capital, current and overhead costs were collected. After calculation ,the mean of total costs was assessed.

Results:
In this study , the average cost of each TB inpatients was calculated 43$, that , 69% of which was related to manpower costs , 13% to overhead

costs and 11% to particular disposable devices and substance costs.

Conclusions:
As it is observed all over the world ,health care personnel pay less attention to the costs of medical equipment and are less aware of the economical aspect of health care services , Having knowledge about the costs is not only essential for hospital administrators but also for all medical personnel ,since with more cost reduction ,a greater number of people can enjoy medical services.

| Tuberculosis Control Program |

IMPROVEMENT OF SMEAR PREPARATION BY NON LABORATORY TECHNICIANS AT HEALTH CENTER LEVEL IN KANDAL PROVINCE, CAMBODIA

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Introduction:
Saang Operational District (OD) has one Microscopy Center (MC) so that 12 Health Centers (HC) have to send sputum slides to MC every week. Since smear preparation (SP) is dependent on HCs, slide quality was not at satisfactory level before. Problem analysis showed issues related with SP such as lack of supervision and staff motivation at HCs. In order to improve the situation, intervention activities have been conducted since 2005.

Method:
Refresher training for smear preparation was conducted to 8 HCs. Monthly assessment of smear preparation was expanded from 5 to 8 HCs, and all slides from those HCs were assessed for performance and feedback was given back promptly. On-site evaluation for smear preparation was monthly performed in selected HCs with poor performance.

Result:
Quality of smear preparation showed improvement in the sputum quality and size. Four HCs could reach the target scores of sputum quality and size regularly, and 2 HCs could succeed in stabilizing smear thickness. However, the evenness of smear could not be upgraded easily at any HC. In addition to those results, EQA showed that the performance of MC at the OD was improved from 4 major errors (2004) to no error (2006).

Conclusion:
Regular monitoring and supervision on SP at HCs could change the smear quality but evenness of smear is the last issue to be improved. Quality improvement of SP may also contribute to reducing major errors at MC.

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TB AND MICRO CREDIT PROGRAMME: BRAC EXPERIENCE

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BRAC Health Programme

Introduction:
BRAC health programme and development programmes are linked to serve poor. BRAC has special initiatives to reach poor people through livelihood programmes including TB treatment services.

Description:

BRAC started specially targeted ultra poor programme (STUP) since 2002. Ultra poor were identified with the following criteria, owning less than 10 decimal lands, earning through female domestic work or begging, no regular male earning member, children of school going age engaged in earning and no productive asset. TB services are provided through STUP since 2003.Under regular BRAC programme, deposit money of 200 taka (US$3) is taken from TB patients during start of treatment and the money is refunded after treatment completion. For ultrapoors no deposit money is taken. TB diagnosis and drugs are free of charge in the country.

Beside STUP programme BRAC has other TB and micro credit programme linkage. Female Community health volunteers (Shasthya Shebika) who play pivotal role in TB Programme are the member of village organization of BRAC micro credit programme. They visit the households, identify and refer suspects, provide messages of TB and monitors drug intake.

Result:
By 2006, number of households covered by the programme is 100,000. Total TB patients identified in STUP areas in 2006 were 145. Beside special programme 68,000 Shasthya Shebikas are working all over Bangladesh in BRAC supported programme. In 2006, 8933 TB patients were the members of BRAC micro credit programme.

Conclusion:
Specially designed tailor-made programme is required in reaching the poor in TB control.

| Tuberculosis Control Program |

SIDE EFFECTS FROM ANTITUBERCULOSIS DRUGS TREATED FOR PATIENTS IN TAIWAN

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National Tuberculosis Association

Objective:
The antituberculosis drugs have made the cure of patients and prevention of infection in communities possible. However, the side effects, particularly the hepatotoxicity, are of concern. This study investigated the effect of medication among patients receiving treatment at the National TB Association.

Methods:
New patients receiving care at NTBA from January 2005 to June 2006 were followed up until january 2007. Medical records were retrieved for information on socio-demographic status, lifestyles, medication and clinical examinations for side effects including AST and ALT. Data analyses emphasized the association between medications and having AST and ALT of upper tertile levels.

Results:
Patients included in this study were 167 males and 122 females, averaged 49.6 (SD 17.5) and 46.1 (SD 17.5) years old. Men were at higher overall incidence rates than women of having elevated AST (1.9% vs. 0.8%) and ALT (4.2% vs. 3.4%). Patients received the treatment of isoniazid and rifampin were at higher risk to have hepatotoxic effect, but significant only in using isoniazid based on the ALT tertile levels (odds ratio=5.1, 95% confidence interval 1.6-16.6). The elevated AST and ALT declined after the change of medication.

Conclusion:
There is moderate association between TB medication and hepatotoxic effect for patients in Taiwan. This side effect can be controlled by shifting to other prescription.

Keywords:
tuberculosis, medication, side effect hepatotoxic.

Tuberculosis Control Program

A COMPARATIVE STUDY OF THE OUTCOME OF CATEGORY I AND CATEGORY II SPUTUM SMEAR POSITIVE PATIENTS IN A TB UNIT IMPLEMENTING DOTS IN AN URBAN SETTING IN INDIA

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Objectives:

To compare the outcome of Category I and Category II of sputum smear positive patients. To analyze the results to validate the adequacy of retreatment cases.

Methods:

Retrospective, register based study of Category I and Category II sputum positive patients enrolled in 2003 and 2004 in an urban Tuberculosis Unit in West Bengal, India. The outcome in the two groups are compared and analyzed.

Results:

Of the **757** patients registered in both categories, 551 [Male 366 (66.42%) and Female 185 (33.58%)] received Category I while 206 [Male 161(78.16%) and Female 45(21.84%)] received Category II medicines. Of the 551 Category I patients , 155 (28.13%), 139 (25.23%), 201(36.48%), 56(10.16%) were 1+, 2+, 3+, scanty positive respectively. The corresponding figures in Category II patients were 73 (35.44%), 54 (26.21%), 59 (28.26%), 20(9.71%). The difference in sex and sputum positivity in the two Categories was not significant (p>0.05).

476 (86.39%) of Category I patients were cured, while 140 (67.96%) of Category II patients were cured and 1(0.48%) completed treatment giving a favourable outcome in 141 (68.45%) Category II patients. "Died", "Failure", and "Defaulter" patients were 22(3.99%), 27(4.90%), and 26(4.71%) respectively in Category I patients. The corresponding figures in Category II patients were 16 (7.77%), 12 (5.83%), 37 (17.96%).

Conclusion:

Favourable result was significantly less (p<0.05) in Category II patients. Revision of treatment protocol of Category II may improve clinical outcome.