

### **374. First National Tuberculin Survey in Nepal**

Shrestha KB, Malla P, Jha KK et al: **Int J Tuberc Lung Dis 2008, 12(8), 909-915**

Though TB control activities in Nepal are in force since 1937 but no national tuberculin or TB prevalence survey has been conducted. The DOTS strategy was introduced in 1995 and in the year 2005 entire population was covered. In 2002, the National Tuberculosis control Programme (NTP) assumed a 2% annual reduction in the ARTI & provided a National ARTI of 1.7%.

As the magnitude of the TB burden is unknown and to improve the control strategy, a national tuberculin survey was conducted among primary school children in 3 ecological zones (mountains, hills & terai) and Kathmandu valley. The children were administered tuberculin test using 2 TU of PPD RT 23 with tween 80 (SSI Copenhagen, Denmark) and were subsequently read after 72 hours. The data were analyzed using cut-off levels to define infection and by Mirror Method. A total of 19577 children were registered. Of the children available for analysis 46 (0.3%) were aged 4 years, 7574 (43.9%) were between 5 & 7 years and 9640 (55.9%) were = 8 years. In all, 17260 children were analyzed. The BCG scar was visible in 78% children. The prevalence of TB infection was 7% (95% CI 4.2-9.7), with an ARTI of 0.86% (95% CI 0.49-1.23) using the Mirror Method, with a mode at 16mm. Compare to hills and Terai, the ARTI was higher in Kathmandu and the mountains, though the difference between the areas were not significant. A decrease in transmission or over estimation of previous estimates is indicated from the computed ARTI. The repeat ARTI survey preferably in 5-7 years would provide information about the trend of ARTI in Nepal.

### **375. Change in the Risk Of Tuberculosis Infection over an 8 year period among school children in Bangalore city**

Chadha VK, Jitendra R, Kumar P et al: **Int J Tuberc Lung Dis 2008, 12 (10), 1116-1121**

In India, a revised national TB control programme adopting DOTS strategy was introduced in 1997 and was expanded in phased manner to achieve complete coverage by March 2006. A declining trend in prevalence of TB diseases as well as in annual risk of tuberculous infection was observed during 1999-2005 in Thiruvallur, a rural area of South India demonstrating the impact of RNTCP on the epidemiological situation of TB. But so far as urban area is concerned, no data on epidemiological trends have thus far been available.

The National Tuberculosis Institute, Bangalore carried out 2 tuberculin surveys among children attending grades 1 and 2 of 60 selected schools at an interval of 8.3 years in Bangalore city to estimate the trends in transmission of tuberculous infection. The children were administered tuberculin testing using 1 TU of PPD RT 23 with tween 80 and the maximum transverse diameter of induration was recorded at about 72 hours of the test. Based on the frequency distribution of tuberculin reaction sizes at either survey, the reactions due to

infection with TB bacilli could not be clearly demarcated from cross reactions. Hence the prevalence of tuberculin reactions = 10mm, = 12mm & = 14mm in size were compared between the two surveys. The prevalence of reactions estimated at all chosen cut-off points were lower at survey II compared to survey I and were statistically significant. The annual risk of tuberculous infection (ARTI) computed from the estimated prevalence of reactions = 14mm in size revealed an average per annum decline of 4.21% for all children between 2 surveys. The analysis of data by mixture model did not reveal a good fit in either of the survey. The need of the hour is to accelerate the rate of decline in transmission of infection by further intensification in TB control measures.

### **376. Health seeking and knowledge about tuberculosis among persons with pulmonary symptoms and tuberculosis cases in Bangalore slum**

Suganthi P, Chadha VK, Ahmed J et al: *Int J Tuberc Lung Dis* 2008, 12 (11), 1268-1273

In India, during nation- wide tuberculin survey [2000-2003] higher rates of TB transmission were observed in urban than in rural areas and highest in urban slums. This might be attributable due to poor living conditions, lack of awareness about TB disease, higher incidence of TB and the availability and utilization pattern of health services.

A community based survey was therefore undertaken in a representative sample of Bangalore city slums with the objectives of ascertaining – 1) Health seeking behavior patterns in persons with pulmonary symptoms 2) pathways followed by pulmonary tuberculosis (PTB) cases until diagnosis and treatment and 3) their knowledge about TB symptoms, cause, mode of transmission, diagnosis and treatment.

In the selected slums pulmonary TB cases were identified by the sputum examination of persons with pulmonary symptoms, i.e. 1) cough for = 3 weeks, fever or chest pain for = one month and history of haemoptysis during the last 6 months through house visits 2) History of anti- TB treatment are revealed by the patient and 3) Visit to relevant TU's to record additional cases registered with RNTCP but who were missed during house visit.

Of the 124 persons with pulmonary symptoms interviewed, about 50% had taken action for relief. About 19% had undergone sputum microscopy and 27% chest X-ray of 47 PTB cases interviewed, 72% first approach private health facilities, around 50% visited two health facilities before diagnosis and 87% visited two or more facilities before treatment initiated, 42 initiated treatment at govt. health facilities and five were later referred to govt. health facility who initiated treatment at private health facility. The majority of persons with pulmonary symptoms and PTB cases had poor knowledge about TB, and most of those with pulmonary symptoms were not aware of the availability of anti-TB services at Govt. health facilities in free of cost. Necessary counseling about the duration of treatment, DOT importance, consequences of irregular treatment and cough hygiene practices should be rendered to TB cases diagnosed and their family members. The delivery of anti-TB services to slum dwellers shall be improved by enhancing the knowledge and skills of health providers and addressing the constraints thus faced.

### **377. Treatment outcome of neuro tuberculosis patients put on DOTS - An observation study from the field**

Venugopal K, Sreelatha PR, Sairu Philip and Vijay Kumar: **Ind J Tub, 2008, 55(4): 199-202**

The most serious form of tuberculosis is neuro-tuberculosis which constitutes approximately 15% of extra pulmonary cases or about 0.7% of all clinical tuberculosis. Neurologists all over India are reluctant to accept Directly Observed Treatment Short course for neuro-tuberculosis since its introduction in India. Since not a single study in the literature proving the efficacy of full intermittent short course therapy in neuro-TB could be found, the study was planned with the objective of assessing effectiveness of RNTCP- DOTS regimen among neuro-tuberculosis patients registered under RNTCP.

All the neuro-tuberculosis patients registered for DOTS in all the four tuberculosis units of Alappuzha district of Kerala during the period January 2002-December 2002 were included in the study. Diagnostic algorithm as per RNTCP guidelines was strictly followed and treatment outcome and follow up status were taken from TB register. No pediatric age group was included in the study. A total of 32 cases registered for DOTS regimen were registered that constituted about 8% of the total 419 extra pulmonary TB cases registered in the district during the period. Out of 32 cases, 29 completed the treatment and all were asymptomatic at the end of treatment (85%). All patients received treatment as DOTS, but only 70% received actual DOTS. All patients were given 9 month intermittent regimen as per RNTCP guidelines. Five patients died during treatment (14%). With the intermittent short course regimen the total drug consumed by the patient is almost half that with the conventional daily regimen. The result shows that DOTS under field conditions are efficient in curing neuro- tuberculosis. The RNTCP guidelines and training modules should include a clear cut diagnostic algorithm for diagnosis of neuro-TB.

### **378. Serological Diagnosis of Tuberculosis**

Dayal R, Singh A, Katoh V M et al: **Ind J pediatr 2008; 75(12), 1219-1221**

**Objective:** To evaluate the efficacy of Elisa for the detection of IgG antibodies against antigen 85 (Ag 85 complex) of Mycobacterium tuberculosis.

**Methods:** Children of either sex, 0-18 years of age, attending the outpatient department & admitted in the casualty and wards of the department of pediatrics, S.N. Medical College, Agra, were included in the study. The study was carried out on children with pulmonary and LNS tuberculosis along with matching controls (83 cases and 32 controls). Informed consents of their parents or guardians were taken. They were subjected to clinical examination. Relevant laboratory investigations, tuberculin test and chest radiograph. Relevant body fluids were subjected to bacteriological test; Elisa was applied to serum samples for detection of IgG antibodies against antigen 85 complex (Ag85). The result of ELISA was compared with bacteriological tests [Ziehl Neelson (ZN)] staining for acid-fast bacilli, culture on Lowenstein Jensen (LJ) medium and culture on BacT/Alert 3D systems].

Results: ELISA tests showed a significantly higher sensitivity (59.1%) as compared with LJ medium culture methods (19.3%), BacT/Alert 3D system (24.1%) and ZN staining (16.9%) in all patients ( $P < 0.001$ ) Specificity of ELISA test was 71.9%.

The study concluded that in view of convenience, low cost and good sensitivity, ELISA tests have a promising future in diagnosis of childhood tuberculosis.

### **379. A profile of bacteriologically confirmed Pulmonary Tuberculosis in children**

Sowmya swaminathan, Manjula Dutt, Radhamani MP et al: **Ind Pediatr, 2008; 45(9), 743-747**

The diagnosis of tuberculosis (TB) in children is often based on clinical suspicion, in the absence of definite bacteriological proof. In most situations, bacteriological confirmation is not possible because of paucibacillary nature of the disease and difficulty in collecting sputum specimens from young children.

Hence, to devise simple and reliable clinical diagnostic criteria for tuberculosis in children, the Tuberculosis Research Centre undertook a multicentric study in three hospitals the city of Chennai between July 1995 & December 1997. Children aged 6 months to 12 years with signs & symptoms suggestive of tuberculosis were investigated further. Clinical examination chest radiograph, tuberculin skin test with 1TU PPD and sputum or gastric lavage for mycobacterial smear and culture were done for all & lymph node biopsy when necessary.

A total of 2852 children were registered and tuberculosis was bacteriologically confirmed in 201. Predominant symptoms were history of insidious illness (49%), fever and cough (47%) loss of weight (41%) and a visible glandular swelling (49%). Respiratory signs were few and 62% were undernourished. Over half of the patients with confirmed TB had normal chest X-ray. Abnormal X-ray findings included parenchymal opacities in 47% and hilar or mediastinal lymphadenopathy in 26%. The prevalence of isoniazide resistance was 12.6% and MDR-TB 4%.

The study concluded that children in tuberculosis present fever and cough of insidious onset. Lymphadenopathy is a common feature in children with pulmonary TB. A significant proportion of children have normal chest X-ray despite positive gastric aspirate cultures. Drug resistance rates in children mirror the pattern seen in adults in this geographic area.