300. Paucibacillary Tuberculosis - A Retrospective Study.


Though Direct Smear Microscopy is being considered as an effective diagnostic tool, it has certain limitations. The most important limitation being its failing to detect the Paucibacillary tuberculosis (TB) or Direct Smear negative but culture positive TB cases. Hence a retrospective study was conducted with the main objective of detecting the TB cases among the respiratory patients found negative by direct smear Microscopy alone. It was also felt to reevaluate the importance of culture examination of the sputum specimens as an adjunct to direct smear microscopy.

Early morning sputum specimens were collected from 1,508 urban and semi urban patients attending OPD, VP Chest Institute, Delhi. All these patients had respiratory signs and symptoms similar to pulmonary TB. These specimens were subjected to both Direct Smear examination and culture by Petroff's method. Culture was done on Lowenstein Jensen medium and incubated at 37°C for maximum 8 weeks for evidence of growth. A total of 1222 patients were culture positive for TB. Of these, only 34.8% were Paucibacillary TB cases. It was seen that sex had no influence on smear examination results. The frequency of smear negative cases varied in the different age group, the largest number belonging to > 45 years age group (p<0.005).

The authors feel that, the above study conducted with cases belonging to a defined group with pulmonary symptoms, the rate of paucibacillary cases belonging to a defined group with pulmonary symptoms, the rate of paucibacillary cases could apparently be high. They opine that sputum culture, as a simple and effective method to detect smear negative needs reconsideration, particularly in the older age groups.

301. Quality control of sputum smear examination in Cebu Province.


Even though the Philippines NTP has been integrated into the general health services since 1968, TB remains one of the main health problems in the country. Hence in 1994, the government of the Philippines developed new NTP policies and strategies based on WHO recommendations. A pilot project was conducted to test its feasibility and effectiveness in Cebu Province in collaboration with the Japan International Cooperation Agency (JICA).

During the period of the study, from Jan. 1996 to Dec 1997, positive slides (100% in 1996 and 20% or 100% in 1997) and 20% of negative slides were selected from all of the slides examined at the Rural Health Units (RHUs) were assessed on the quality of smear preparation. The readings were blindly cross checked by the provincial assessors. It was found that in 1997, i) 90% of RHUs participated in the quality control activity, ii) the proportion of good quality smears increased markedly & iii) the false positive and false negative rates did not change.

The authors opine that although the false positive and negative rates did not decrease during the period, the quality control procedure resulted in marked improvements in smear preparation, a high participation of RHUs in the quality control programme and the elimination of large discrepancies between readers on positive slides in 1997. The quality control system tested in Cebu Province has now been adopted as the national standard and expanded to other provinces also.

302. Gall Bladder Tuberculosis presenting as a Multiloculated Cystic Mass on CT.


Among the Extra Pulmonary TB, Gall Bladder Tuberculosis (GBTB) is most probably the rarest. Till date only 50 such cases have been reported. The authors here present a rare case of GBTB. A 60 year old woman with increasing weakness, anorexia, skin pigmentation and mild right hypochondrium without organomegaly. Contrast Enhanced CT Scan of the
abdomen revealed bilateral enlarged adrenals. The right adrenal was the larger of the two and showed multiple necrotic areas with enhancing walls and incomplete internal septations. No adrenal calcification was demonstrable. In addition, there was a multiloculated cystic mass with enhancing walls and incomplete internal septations in the gall bladder fossa. The liver was normal and the biliary channels did not reveal any dilations. No gallstones were identified on sonography or CT. A provisional diagram of bilateral adrenal TB along with probable involvement of the gall bladder was made. Ultra sound guided Fine Needle Aspiration Cytology (FNAC) was done and the biopsy was stained and AFB were demonstrated confirming the diagnosis of TB.

Finally, the authors emphasize that GBTB is of no pathogenic diagnostic imaging features. Few descriptions of its imaging morphology show that it can mimic acute cholecystitis, Chronic cholecystitis and a GB mass. The authors opine that the case report aims to add to the existing spectrum this appearance of a multiloculated thick-walled GB.

303. Acute Febrile Neutrophilic Dermatosis following Tuberculous Infection.
Singh RK: *JAPI 2002, 50/10, 1322-1323.*

Robert Douglas Sweet in 1964 described Acute Febrile Neutrophilic Dermatosis (AFND) so the condition was named as Sweet's syndrome. It is hypersensitive reaction found in the form of parainflammatory and paraneoplastic conditions besides its idiopathic nature. However, there is often preceding upper respiratory tract infection. A case of tuberculous adenitis having Sweet's syndrome enduring course of ATT is reported here.

A 40-year-old patient with fever and right axillary lymphnode enlargement and anorexia since one month was presented. On examination he was found to have rundown health and multiple nodular lumps inside the abdomen in umbilical region, which were confirmed to be mesenteric lymphadenopathy by USG and CT scan of abdomen. Serological tests for HIV infection and Hepatitis B, C virus infections were negative. However, PPD test was positive as well as ELISA test was predictive of TB. Though chest X-ray was normal, FNAC of axillary lymphnode revealed granulomatous lesion. He was put on ATT on the basis of pathological diagnosis of TB and confirmed by culture of lymphnode aspirate. After a month of treatment he developed high fever with non-pruritic nodular eruptions over dorsum of hands and forearm. Both clinical and histological features confirmed to Sweet's syndrome.

In this reported case of Sweet's syndrome skin lesions are parainflammatory provoked by the M. tuberculosis present in the mesenteric and axillary lymphnodes. Similar situation occurs in other cutaneous reactions of tuberculous infection i.e. erythema nodosum and erythema induratum. However, both the skin lesions are thought to be the result of vasculitis provoked by M. tuberculosis present somewhere else in the body. The author feels that lesson should be learnt from this case. Firstly, Sweet's syndrome as an eruptive fever can appear in the midst of treatment course of TB. Secondly, among a number of skin reactions in tuberculosis, Sweet's syndrome should also be taken into account.

Singh V, Khandelwal R Bohra S et al: Pulmonary Division, Department of Medicine, SMS Medical College, Jaipur; *JAPI 2002, 50/10, 1266-1269.*

Communication skill is an essential qualification for a successful doctor. However, "Communication skills" is an area, which is under utilized even in the regular curriculum of medical colleges of India. Communication problems in medical practice are both important and common. Poor communication leads in failure to perceive problems of the patients whereas good communication results in to positive health outcome.

In order to assess the adequacy of communication skills of the physicians about asthma, a study was conducted. 1421 physicians attending the annual conference of association of physicians of India volunteered to participate in the study. They were divided into 3 categories: 'Teachers' - group 1, (n=131); "Clinicians" - group 2, (n=951) and 'Students' - group 3, (n=339). Questionnaire containing 10 most Frequently Asked Questions (FAQs) by asthmatic patients were given to the physicians. A panel of 3 patients assessed the replies of these question and graded them as "Convincing", "Just convincing" and "Not convincing". Replies of only 2% of physicians were graded as convincing, 15.6% just convincing
and 82.4% as not convincing. Among group 1 none gave a convincing reply while replies of 2.2% of group 2 and 2.4% of group 3 were graded as convincing. The difference in results among the 3 groups was not significant statistically.

Communication skills are the integral part of patient care and management. Effective communication between doctor and patients is very important. Most of the essential information helpful in diagnosis arises from the interview, with the patient. Interpersonal skills of a doctor largely determine the patient's satisfaction and compliance and positive influences health outcomes. The authors are of opinion that there is a clear and urgent need for teaching these clinical skills during undergraduate and postgraduate education. Statutory bodies like Medical Council of India (MCI), Association of Physicians of India (API) should undertake such responsibilities.

305. Public and private providers quality of care for tuberculosis patients in Kampala, Uganda.


World Health Organisation (WHO) has estimated that 9 out of 10 countries with the highest TB incidence rates are in Africa. With this the dual epidemics of HIV and TB continue to be serious challenges to health care delivery in Uganda. In recent years, many fee-for-service clinics have opened up in Kampala, Uganda. Hence the above study was conducted with the main objective of comparing the appropriateness of TB care in private and public clinics and the extent of the TB burden handled in the private sector.

Cross-sectional survey in private and public clinics treating TB patients in Kampala, Uganda, during June to August 1999. Clinics were evaluated for appropriateness of care. This was defined as provision of proper diagnosis (sputum smear microscopy as the primary means of diagnosis), treatment (short-course chemotherapy, with or without directly observed therapy), outcome evaluation (smear microscopy at 6 or 7 months) and case notification in accordance with the Uganda National Tuberculosis and Leprosy Programme. A total of 114 clinics (104 private, 10 public) were surveyed. Forty-one percent of the private clinics saw three or more new TB patients each month. None of the public or private clinics met all standards for appropriate TB care. Only 24% of all clinics adhered to WHO - recommended treatment guidelines. Public Clinics, younger practitioners and practitioners with advanced degrees were most likely to provide appropriate care for TB.

In Kampala, the practices of private practitioners do not often meet the standards set by the Ugandan National Tuberculosis Programme or the WHO. These practitioners, however, are eager to participate in educational programmes about TB. The authors opine that the study has opened up a point of contact with private providers in Uganda that did not exist before.

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306. Prevalence of HIV infection among tuberculosis patients in Delhi


The published reports about sero-prevalence of HIV among TB patients give highly variable rates worldwide. In India also wide variation has been observed. Therefore to determine the prevalence of HIV infection among newly diagnosed untreated tuberculosis patients in Delhi State, a study was conducted from September 1997 to August 1998. As per the NACO guidelines for sentinel surveillance, serum specimens of about 400 patients between 15 and 45 years of age were collected from each of six randomly selected tuberculosis clinics of Delhi. These samples were screened by ELISA method using Innotest HIV-1/HIV-2 Ab.s.p. Method. Samples found to be non-reactive on first testing were declared as negative. All samples found to be reactive on ELISA testing were subjected to additional E/R/S tests and further subjected to line immunoassay for confirmation and declared as positive. Out of the total 2,361 specimens thus collected from six clinics, 16 (0.68%) were found to be positive for HIV-1 antibodies. All the 16 HIV positives were among 1,409 males examined (1.14%), suggesting a higher risk of HIV co-infection present among males suffering from tuberculosis.
Among them, illiterate and those educated up to primary level were significantly more compared to those with middle and higher education. The other risk factor for HIV and tuberculosis co-infection were (i) heterosexual relations with multiple partners, (ii) intravenous drug abuse and (iii) concomitantly present sexually transmitted disease.

This study suggests that prevalence of HIV among TB patients in Delhi is lower than that reported from other parts of the country and more emphasis must be given for continuous surveillance of HIV in TB patient and preventive interventions among high-risk groups.

307. Surveillance of drug resistance in tuberculosis in the state of Tamil Nadu

Drug resistance level provides an epidemiological indicator to assess the extent of resistant bacterial transmission in the community and to evaluate performance of tuberculosis control programmes. High levels of drug resistance have been reported from certain regions of the world. Potential causes include inadequate treatment, poor case holding, poor drug supply, poor quality of drugs, non adherence of patients to the prescribed drug regimens and indiscriminate use of anti TB drugs in private sector.

As per WHO guidelines, drug resistance surveillance was carried out in Tamil Nadu state to determine the proportion of initial and acquired drug resistance in cases of pulmonary tuberculosis. A total of 145 centers, comprising of 23 DTC’s, 117 X-ray Centers and 5 medical college hospitals participated in this study. Two specimens of sputum from each of a total of 713 patients attending 145 participating centers all over the state were tested by smear and culture examination and drug susceptibility tests of Isoniazid, Rifampicin, Ethambutol and streptomycin.

Out of 400 patients for whom drug susceptibility results were available, 384 (96%) had no history of previous anti tuberculosis treatment. Of these, 312 (81%) were susceptible to all the drugs tested. Resistance to Isoniazid was seen in 15.4% of patients and to Rifampicin in 4.4%, including resistance to Isoniazid and Rifampicin in 3.4%.

This study reveals that there has been a gradual increase in initial drug resistance over the years in Tamil Nadu, which could be overcome by implementing a strong control programme like DOTS.

308. Sputum grading as predictor of treatment outcome in pulmonary tuberculosis
Sanjay Rajpal, Dhingara VK & Agarwal JK: Ind J Tub 2002, 49, 139-141.

In accordance with the guidelines of WHO and IUATLD, diagnosis of tuberculosis patients under RNTCP is primarily based on sputum examination. The sputum smears are graded by seeing the numbers of bacilli in the slide. On the basis of sputum examination reports and previous treatment history, patients are categorized into three categories Viz. Cat-I, Cat-2 and Cat-3.

A study was undertaken by New Delhi TB Center, to assess the importance of initial sputum grading as a predictor of treatment outcome among newly diagnosed sputum positive patients (Cat-1) registered under RNTCP in 1999. This study reveals that patients with 3+ sputum smear grading not only require extension of treatment in the intensive phase more often than those with scanty, 1+ or 2+ grading but also have significantly higher failure rate. The proportion of defaulters was also found to be higher in 3+ patients. These patients should be grouped as likely to be defaulted more compared to others and should be provided higher degree of motivation for completing their treatment.

309. Pulmonary tuberculosis in HIV positive individuals: Preliminary report on clinical features and response to treatment

HIV infection has increased the burden of tuberculosis, especially in population where HIV has become common, and where the prevalence of tuberculosis infection is high.

To study the clinical, radiological and immunological profile of pulmonary tuberculosis in HIV infected patients and their response to SCC regimens, a study was undertaken among 78 patients (68
males and 10 females) with HIV infection and having symptoms suggestive of tuberculosis attending Government Hospital, Tambaram & Tuberculosis Research Center, Chennai. Tuberculosis diagnosis was based on clinical evaluation, bacteriological examination & chest skiagram and HIV diagnosis was based on two tests (rapid/ELISA), detecting different antigens. CD4+ T cell counts were done on all patients initially and at the end of treatment. Blood tests and skiagrams were repeated at 2 months and at the end of treatment. All the patients were treated under RNTCP and doses were given under supervision.

Sixty five patients had culture confirmed pulmonary tuberculosis, of whom 54 were smear positive. The radiological manifestations were varied with 11 subjects having miliary tuberculosis, 54 with non-homogeneous opacities and 10 with cavitation. The mean CD4+ cell count at intake was 192 ± 172 cells/cumm. Patients showed good initial response to treatment with significant weight gain. At the end of 2 months of treatment, 91% of patients had sputum culture negative for M tuberculosis. However, the CD4+ count fell significantly by the sixth month.

This study reveals that tuberculosis patients have a varied clinical presentation among patients with HIV infection. The spectrum of radiographic feature ranges from normal to a miliary pattern. Inspite of clinical and bacteriological improvement during treatment, immunologic deterioration may continue.

310. Tuberculosis as an occupational hazard for health care workers in Estonia

Tuberculosis incidence has been increasing in the Baltic States since 1990s, accompanied by the emergence of drug resistance, including multidrug resistance. Very little attention has generally been paid to tuberculosis among the employees in the health care system. Therefore, a study was conducted to investigate the risk of occupational tuberculosis among health care workers (HCWs) in general hospitals and in chest hospitals of Estonia.

Cases of tuberculosis registered among HCWs from 1994-1998 were evaluated. The case records were analysed retrospectively and combined with radiological and bacteriological data including data on drug resistance. Out of the 14730 HCWs registered, 67 were diagnosed as patients with primary tuberculosis during the study period. They were employed at 33 health care institutions, including 25 hospitals, 7 out patients clinics and one university institute. Among 67 patients 23 were physicians, 23 nurses 7 lab technicians, 12 assistant nurses and 2 cleaners. The incidence of tuberculosis among HCWs (mean 91/100 000/ year) was 1.5 to three times higher than in the general population. In a chest hospital, in-charge of regional tuberculosis care, the incidence was 30 to 90 times higher, and was highest among physicians. In 49 HCWs tuberculosis was confirmed by culture. Among these, drug resistance was detected in 23 (49%), 18 (38%) of whom had MDR tuberculosis.

Health care workers, especially those working in a chest hospital where tuberculosis patients were treated, were found to be at elevated risk of tuberculosis. MDR tuberculosis poses a particular threat that is difficult to combat. This study reveals that a combination of administrative, engineering and personal respiratory control measures needs to be employed to further reduce the risk of TB transmission in individual health care facilities.

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311. PPD RT 23 for tuberculin surveys in India.

Tuberculosis sanatoria and villages in Bangalore district. Objective: To study the appropriateness of continuing to use 1TU dilutions prepared by the BCG Laboratory, Guindy, in Chennai, India, from a freeze-dried form of PPD RT 23 with Tween 80 received from Statens Serum Institute (SSI), Copenhagen, for tuberculin surveys in India.

Design : The responses to dual tuberculin tests were compared among 1) 63 smear positive
cases using 2 TU PPD prepared by the Guindy laboratory (Dilution-G), and 2 TU PPD prepared by the SSI (Dilution-S); 2) 124 smear-positive cases using 1 TU and 2 TU Dilution-G; and 3) 1338 apparently healthy children using 1 TU and 2 TU Dilution-G. Test sites were allocated randomly using the double-blind technique. Tuberculin responses obtained during studies conducted in India and in other countries were compared.

**Results:** The differences in sensitivity of tuberculin testing using the different preparations were found to be small and statistically non-significant. Among children, a higher proportion of reaction sizes in 10-14 mm and 15+mm categories was observed to 2TU compared to 1 TU of Dilution-G. This could reflect lower specificity to 2TU in the study area where non-specific sensitivity is highly prevalent. Studies in India and other countries do not suggest any loss in potency of 1TU PPD RT 23 with Tween 80.

**Conclusion:** 1TU dilutions of PPD RT 23 with Tween 80 provided by the BCG Laboratory, Guindy, may continue to be used for tuberculin surveys in India.

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312. Annual risk of tuberculous infection in rural areas of Uttar Pradesh, India.
Chadha VK, Jagannatha PS, Vaidyanathan PS, Singh S & Lakshminarayana; *Int J Tuberc Lung Dis* 2003, 7/6, 528-535.

**Setting:** Rural areas in Uttar Pradesh, the most populous state in India. Objectives: 1) To estimate the average annual risk of tuberculous infection (ARI), 2) to study ARI trends with age, and 3) to compare tuberculin reactions among children with and without BCG scar.

**Study Design:** A cross-sectional tuberculin survey was conducted among children aged 1-9 years residing in Rae Bareli, Hardoi and Jaunpur districts, Uttar Pradesh. Tuberculin testing was performed using 1 TU of PPD RT23 with Tween 80, and indurations were measured 72 hours later. Prevalence of infection was estimated in children without BCG scar based on the cut-off point identified on the frequency distribution of reaction sizes. The ARI was computed from the estimated prevalence.

**Results:** The proportion of children with BCG scar varied from 25% to 31% in the study districts. Using a cut-off of 14mm among children without BCG scar, the ARI was estimated at 2.3% in Rae Bareli, 1.9% in Hardoi and 1.5% in Jaunpur, and was observed to increase with age. Tuberculin test results among children with BCG scar suggest that they may be included in tuberculin surveys to estimate ARI.

**Conclusion:** High rates of transmission of tuberculous infection suggest that tuberculosis control measures need to be intensified.

313. Annual risk of tuberculous infection in the Western Zone of India.
Chadha VK, Vaidyanathan PS, Jagannatha PS, Unnikrishnan KP, Savanur SJ & Mini PA; *Int J Tuberc Lung Dis* 2003, 7/6, 536-542.

Paucity of epidemiological data on tuberculosis in India prompted the National Tuberculosis Institute, Bangalore to embark upon a nation-wide survey to estimate the Annual Risk of Tuberculosis Infection in different parts of the country. The survey in Junagadh district, one of the 26 districts drafted under the nation-wide survey is reported here.

The prevalence of infection from the analysis of 3164 children not displaying scars of the BCG vaccination was 4.16% (CI: 3.17-5.14) and from this data the ARI was computed as 0.73% (CI: 0.55-0.91). The inclusion of vaccinated children into the study group yielded similar results.

The estimate of the ARI in Junagadh district is lesser than that in several other parts of India which is probably in consonance with its better socio-economic development.

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