**368. Screening of HIV infection by health professionals in India.**

Kurien M, Thomas K, Ahuja RC et.al: **Natl J Med India 2007, 20 (2), 59-66**

Stigma and discrimination particularly in access to healthcare remain major problems for people infected with HIV in most parts of India.

The Indian Clinical Epidemiology Network (India CLEN) did the study among health-care providers during 2003-04 using a multi-centre cross-sectional survey design with a standardized interviewer administered questionnaire. The primary objectives were to assess the Knowledge Attitude and Practices (i) HIV screening, (ii) universal precautions and (iii) national and institutional policies/guidelines for HIV testing / screening. The secondary objectives were to assess the KAP of health care providers at primary, secondary and tertiary levels in the public and private sectors. Ten study centres in 8 states in India participated in the study. A total of 2200 health care providers participated in the study. The type of health professionals included physicians, surgeons, gynaecologists, paediatricians, anaesthetists, orthopedicians, ENT surgeons, dentists, administrators, junior doctors and others.

The questionnaire had 81 items evaluating dimensions of knowledge on HIV/AIDS, attitudes to care and prevention, practice of universal precautions and institutional policy of HIV/AIDS. In each dimension, based on the percentage of correct answers, the respondents scores were graded as poor (<50%), average (50-75%) and adequate/good (>75%).

The knowledge, attitude and practices (KAP) related to HIV service delivery was very poor with a overall mean KAP score of only 49.7% (CI: 49.1-50.3). Only 5%, 5% and 1% of the participants scored more than 75% separately for the dimensions of knowledge, attitude and practice respectively. Only 24.4% and 36.7% of responders knew that HIV screening was not recommended prior to surgery and pre-employment check-up. Many doctors (19.4%) had refused treatment to people living with HIV/AIDS (PLHA) at least some of the time. Nearly half (47.2%) had detected HIV positive patients in the past and labeled them; 23.9% isolated them in separate care areas and 13.3% postponed or changed treatment based on the patient's HIV status. Screening of HIV prior to elective surgery was done by 67% of providers. While 64.7% of responders were aware of the existence of national guidelines on recommendation for HIV testing; only 38.4% had read the policy document.

There is growing need to provide care, support and treatment to a large number of PLHA. The capacity of health-care providers must be urgently built up so as to improve their knowledge and attitude to HIV and to enable them to deliver evidence-based compassionate care to PLHA in various health care settings.

**369. Paraffin slide culture technique for "Baiting Non-tuberculous Mycobacteria"**

P Narang et al: **Ind J Tub Oct 2000, 47, 219-221**

The ability of Nocardia to utilize paraffin as the sole source of carbon has been used for its isolation from clinical specimens. Some Mycobacteria also posses the same property, that is not well understood. 'Paraffin baiting' was developed for isolating organisms like Nocardia and Mycobacterium from soil because of their ability to utilize paraffin wax as a sole source of carbon. The ability of Non-tuberculosis Mycobacterium (NTM) and the inability of Myco-bacterium complex to utilize carbon present in paraffin wax for their growth have been reported

by 'Ollan et al'. This technique is useful in isolating NTM from clinical specimens as their unique property of paraffin metabolism is not commonly found among other human pathogens.

A study was done in Wardha to assess the ability of a commercially available 'paraffin slide culture' system for its diagnostic potential. Fifteen known species were grown in 7H9 Middle Brook medium and incubated at 37°c for seven days/till the turbidity matched that of McFarland's No.1 standard and checked daily for growth. As soon as the growth appeared on the slide, it was removed from media and stained by Kinypun's method.

The technique was found to be useful for baiting and supporting the growth of NTM strains by serving as a means of distinguishing NTM from *M. tuberculosis,* since the system did not support the latter's growth. This system helps in reducing the risk of contamination, as a very few pathogens are capable of growing on paraffin wax. The paraffin slide culture provides an inexpensive and simple alternative technique for isolation, speciation and drug susceptibility testing of NTM.

**370. Study of Phage Based diagnostic technique for Tuberculosis**

Purabi Barmanet etal : **Ind J Tub, Jan 2007, 54(1), 36-40**

The diagnosis of tuberculosis has always been a problem by conventional method, due to the slow rate of growth of *M. tuberculosis* and because of its time consuming nature. New diagnostic approaches-like, nucleic acid amplification, antibody detection and other new techniques need expertise. Also, they are not cost-effective.

'Fast plaque TB' is a rapid manual bacteriophage based test, that is used to detect viable *M. tuberculosis* in clinical specimen. The technique uses a mycobacteriophage which is able to infect and replicate in slow growing pathogenic strains like *M. tuberculosis, M. ulcerance* and also in certain rapid growers like *M. smegmetis.* Macrophages are specific to Mycobacteria and replicate only in viable cells. 'Phage based' technique involve simple manipulations and they yield results rapidly.

Department of Microbiology, University College of Medical Science and Guru Tej Bahadur Hospital, Delhi took up a study to show that 'phage assay' is a rapid, reliable and cost effective method in diagnosing paucibacillary tuberculosis from clinical samples. In this study, they used both microscope and conventional cultural method as standards to compare the results.

Out of 212 cases taken in this study, 106 were phage positive. Total of 120 grew on LJ Media of which 112 were *M. tuberculosis*, 2 were *M. kanasasi*, and 4 were *M. avium* complex, 2 were *M. fortitum.* Of 120 cases that were positive by LJ, 104 were Phage Assay positive. All the 8 Non-Tubercular mycobacteria were negative by the Fast Plaque method. Out of 92, those were negative for LJ, 2 were positive in Phage Assay.

The study showed that Phage Assay is a rapid, reliable and cost-effective method for diagnosing pulmonary tuberculosis from clinical samples.

**371. Usefulness of the 'BACTEC MGIT 960' system for Isolation of *Mycobacterium tuberculosis* from sputa subjected to long-term storage.**

Manuel Pardini et al; **J clin micro 2007, 45(2), 575-576**

The transportation of sputa for isolation of *M. tuberculosis* from remote places to culture laboratories, usually takes longer time, resulting in delay in processing which in turn results in an increase in contamination rate. There is also a loss in the yield of positive culture when conventional LJ method is used. Studies have demonstrated that the adoption of 'BACTEC MGIT

960' system for the culture of sputa that was stored for long time at room temperature, yields more positive cultures by reducing contamination rate.

A comparative study was taken up in Rome, Italy, for the recoveries of *M. tuberculosis* from long time stored sputa at room temperature and to find the difference in contamination rates between the two methods.

After collection, samples were kept refrigerated, but ground transportation and mailing was under room temperature and took several days. Smear microscopy was done by Ziehl-Neelsen method on all unconcentrated specimens. Overall the meantime between sample collection and processing was 17±7 days (range between 7-39 days). The specimens were processed blindly by NAOH method and inoculated on LJ media and MIGT tube, incubated them at 37° C in 5% CO2. They examined them weekly for 8 weeks. Identification of positives were done by DNA probe.

Inoculation of positive smear sputa on MGIT significantly increased the recovery of *M. tuberculosis* from 50-66% and decreased the contamination rate from 33 to 13% in comparison with that of the inoculation on LJ. When combination of LJ and MGIT media were considered, *M. tuberculosis* recovery increased from 2 to 3 % in comparison with MGIT alone. The study showed that there was an increase in the yield of positive cultures from sputa stored for longer time than that of LJ method, also with appreciable decrease in contamination rate.

**372. Reasons for non-compliance among patients treated under revised national tuberculosis control programme (RNTCP), Tiruvallur district, South India**

K Jaggarajamma, G Sudha, V Chandrasekararan et.al: **Indian J of Tuberc, 2007, 54 (3), 132-135**

Tuberculosis (TB) is a communicable disease requiring prolonged treatment, and poor adherence to a prescribed treatment increases the risk of morbidity, mortality and spread of disease in the community. Poor adherence to anti-tuberculosis medication is major barrier to global TB control. Factors associated with patients for poor compliance reported in the pre-DOTS (Directly Observed Treatment Short-course) era were relief from symptoms, adverse reactions to drugs, domestic and work-related problems. This study reports reasons for non-adherence to treatment among defaulters, elicited during home visits.

The study area is in one of the TUs in Tiruvallur district of Tamil Nadu, South India covering a population of 580,000. A total of 186 defaulters among 938 patients registered during 3rd and 4th quarters of 1999 and 2001 (May-December 1999 and July-December 2001) formed the study population. All the defaulters were visited during the year 2000 for first cohort and 2002 for second cohort periods by the medical social workers, who interviewed patients or their close contacts by using a semi-structured questionnaire for interview. Reasons for default were obtained from both patients and DOT providers.

Among 186 defaulters, 16 (9%) had completed the treatment but were wrongly classified as 'default', 25 (13%) died after defaulting and 4 (2%) could not be traced due to incomplete address. So the reason for default elicited from the remaining 141 patients and 134 corresponding DOT providers have been elicited.

Eighty Five (19%), 65 (38%) and 36 (11%) of the patients from CAT-I, CAT-II and CAT-III respectively were identified as defaulters. Fifty three (72%) smear positive patients from CAT-I had defaulted during intensive phase of treatment (IP). Most of the defaults occurred between 18-24 doses of the treatment.

In univariate analysis, the significant risk factors for default were gender being male [167 of 705 (24%) v/s 19 of 233 (8%); P<0.001], alcoholism [75 of 274 (27%) v/s 73 of 582 (12%); P<0.001], Pulmonary TB [179 of 865 (21%) v/s 7 of 73 (10%); P<0.05], CAT-II of 169 (38%) [P<0.001], smear positive [132 of 540 (24%) v/s 54 of 398(14%); P<0.001] and inconvenience to take treatment under observation [24 of 79 (30%) v/s 118 of 701 (17%): P<0.01].

The main reasons for default were i) drug related problems like nausea, vomiting, giddiness, ii) migration, iii) relief from symptoms, iv) work related, v) alcohol consumption and vi) treatment from other centres. These factors/ variables were responsible for 42%, 29%, 20%, 15%, 15%, 13% respectively, of the total defaulters according to patients. These proportions were 34%, 31%, 16%, 10%, 21% and 4% respectively, according to DOT providers.

Thus the study has identified group of patients that were vulnerable to default such as males, alcoholics, smear positive cases and DOT being inconvenient. The study concludes to say that intensification of motivation and counseling of this group of patients are likely to improve patient compliance and reduce default.

**373. Role of Ultrasonography and Computed Tomography in complicated cases of Tubercular cervical lymphadenitis**

KB Gupta, Ashok Kumar, Rajiv Sen et al: **Ind J Tuberc 2007, 54, 71-78**

TB lymphadenitis (LNTB) is the most common form of Extra-Pulmonary TB (EPTB) and cervical lymph nodes are most frequently involved. The diagnosis of lymph node TB is established by ZN smear/ histopathology examination / FNAC. As visualization of mycobacteria is not possible in every case, the granulomatous inflammation with caseation histopathology examination (HPE) is considered as suggestive of tuberculosis. However granulomatous lymph node has extensive differential diagnosis like sarcoidosis, carcinoma, lymphoma, fungal diseases etc. Apart from difficulties encountered in the diagnosis of LNTB, certain complications may be encountered during treatment such as appearance of fresh nodes, enlargement of existing nodes, development of fluctuation, appearance of sinus tracts etc. These complication require thorough evaluation and surgical intervention like abcess drainage, repeat aspiration, excision biopsy, sinusectomy etc. A thorough knowledge about exact site, size, location, nature and relation with surrounding structures is necessary for proper management.

Ultrasonography (USG) and Computed Tomography (CT) are known to be effective for detecting enlarged lymphnode. These are non-invasive aids in evaluation of TB lymphnode. In light of high complication rates (10-20%) encountered during management of cervical lymphnodes, the present study was planned with the objective to study the role of USG and CT in these cases which might be useful in diagnosis as well as in management.

The study was conducted in department of TB & Chest Disease at Pandit BD Sharma, Post Graduate Institute of Medical Science from August 2003-May 2005. 27 TB cervical lymphnode diagnosed previously through bacteriologically/ HPE presenting with big lymphnode mass >4 cm and with complications during the treatment formed the study subjects. Each case was subjected to USG and CT of involved area.

On USG, all lesions were hypoechoic and showed necrosis. Other findings were sharp margins in 70.4%, hilum in 22.2%, abnormal surrounding tissue 85.2% and matting in 37% calcification in 29.6% and posterior enhancement in 22.2% patients. On CT, the majority of lesions were with central load density (CLD) in 16 (59.3%) followed by large confluent low density (LCAD) in 7 (25.9%),

multilocular central low density (MCLD) in 4 (14.8%), calcification in 8 (29.6%) and homogenous soft tissue density (HSTD) in 2 patients (7.4%).

Based on CT & USG findings, patients were subjected to repeat FNAC and subsequent drainage of pus and material was sent for cytology and HPE. Necrotising granulomatous lymphadenitis was the most common diagnosis in 17 cases (63%) followed by necrotizing in 6 (22.2%) and granulomatous in 4 (14.8%) patients. 15 patients were positive for AFB on ZN smear examination. In 17 patients, culture and sensitivity test for mycobacterium TB from lymph-node aspirate was done and among them, 12 were positive for culture. Out of these, 2 were found to be MDR.

USG & CT modalities are complimentary in diagnosis and management of LNTB presenting with complications. USG helps in better location of site for biopsy/FNAC procedure and drainage of pus with high diagnostic yield while CT helps in better anatomical locations not usually detected on clinical examination.