
ABSTRACTS

Alternative Anti-Tuberculosis regimen including Ofloxacin for the Treatment of patients with Hepatic Injury.

A. Szklo, F.C.Q. Mello, R.L. Guerra, S.E. Dorman, G.R. Muzy-de-Souza and M.B. Conde. *Int J Tuberc Lung Dis* 2007; **11(7)**: 775-780.

Aim was to describe treatment outcomes for TB patients with liver injury who received a 12-month regimen of Ethambutol (E, EMB) and Ofloxacin (O, OFL), including Streptomycin (S, SM) for the first 3 months (3SEO/9EO) under routine clinical care conditions. It was a retrospective study of a cohort of TB patients prescribed 3SEO/9EO was conducted over a 66-month period. Data were obtained by review of existing medical records. Primary outcomes assessed were cure, treatment failure, treatment default, TB relapse and death. Outcomes were assessed for 40 patients with hepatic injury who met study criteria. Twenty-three (58%) were male and 13 (33%) were human immunodeficiency virus seropositive. Thirty-four (85%) patients were cured while three (7.5%) defaulted from treatment, and three others died (7.5%). There were no treatment failures or relapses during two years of follow-up. Clinically recognized drug toxicity occurred in five patients (12.5%), and in each case was attributed to SM. In this series of TB patients with serious liver injury, 3SEO/9EO was well-tolerated, and it was effective in 85% of patients when used under routine clinical care conditions.

Cost-utility of Tuberculosis Prevention among HIV-infected adults

R.K. Shrestha, B. Mugishaq, R. Bunnell, J. Mermin, R. Odeke, P. Madra, C. Hitimana-Lukanika, F. Adatu-Engwau and J.M. Blandfort. *Int J Tuberc Lung Dis* 2007; **11(7)**: 747-754.

The study was conducted to analyze the cost-utility of an IPT program for persons newly diagnosed with HIV. The cost-utility analysis of the Isoniazid Preventive Therapy (IPT) program was conducted using Markov cohort simulation methods. Newly diagnosed HIV-infected persons were evaluated using tuberculin skin test (TST); those

with positive TST were offered IPT for 9 months (targeted testing strategy). An alternative strategy of offering IPT to all HIV-infected clients without TST screening was also evaluated (treat all strategy). The cost-utility of targeted testing was compared to the 'no programme' and the 'treat all' strategies. The IPT programme with the targeted testing strategy would produce 11 quality-adjusted life-years (QALYs) per 100 HIV-infected clients compared to no program. Offering IPT using the treat all strategy gained an additional 30 QALYs per 100 clients compared to targeted testing. Compared to no program, the incremental cost-utility of the targeted testing program was US\$102/- QALY gained. The cost-utility of the IPT program under the treat all strategy was US\$106/QALY gained compared to the targeted testing strategy. The provision of IPT for HIV-infected persons was cost-effective. The use of TST screening prior to IPT reduced costs per QALY gained, but saved fewer overall QALYs.

Association of Common Chronic Infections with Coronary Artery Disease in Patients without any conventional Risk Factors.

Puneet Goyal, Shailaja C. Kale, Rama Chaudhry, Sandeep Chauhan and Naseem Shah. *Indian J Med Res* 2007; **125**: 129-136.

Reports from the West suggest an association of infections and inflammation with atherosclerotic coronary artery disease (CAD). Entire microbial burden from several simultaneous chronic infections could be more important than a single infection in promoting atherosclerosis. No study has been done in Indian population, investigating the association of various chronic infections with CAD. We, therefore, evaluated the presence of markers of chronic infections in CAD patients having no conventional risk factors and healthy individuals in a tertiary care hospital in north India.

Seropositivity to IgG antibodies was investigated for *Chlamydia pneumoniae*, *Mycoplasma pneumoniae*, and *Helicobacter pylori* in 30 CAD patients with no conventional risk factors

scheduled for coronary artery bypass surgery and in healthy blood donors. Periodontal pathogens were isolated by aerobic and anaerobic culture.

All patients, except one, were <55 years of age and six under 40 years. Seropositivity to *C. pneumoniae* was significantly higher in CAD patients than healthy controls (63.3 vs. 23.3%, $P<0.01$). Combined seropositivity to both *C. pneumoniae* and *M. pneumoniae* was significantly higher in CAD patients with myocardial infarction (MI) than those without MI (61.5 vs. 11.8%, $P<0.05$). Aerobic and anaerobic cultures for the isolation of periodontal pathogens were positive in seven patients and five healthy blood donors. Possibly CAD in young is not (or less) governed by conventional risk factors, and infectious agents can be potential risk factors for the development of atherosclerosis and CAD in this subset of patients.

Rapid identification of Mycobacteria by Gene Amplification Restriction Analysis Technique targeting 16S-23S Ribosomal RNA Internal Transcribed Spacer and Flanking Region

V.M. Katoch, Deepti Parashar, D.S. Chauhan, D. Singh, V.D. Sharma and S. Ghosh. *Indian J Med Res* 2007; **125**: 155-162.

Conventional identification of a clinical isolate of mycobacteria, primarily based on culture characteristics and biochemical tests, needs several weeks and may remain inconclusive. This study was undertaken to develop a new rapid method to identify the mycobacterial isolates at species level by gene amplification restriction analysis using primers encoding 16S-23S rRNA internal transcribed spacer (ITS) region and flanking parts of the 16S as well as 23S rRNA gene. This system is based on the amplification of approximately 1.8 kb fragment encoding 16S-23S rRNA spacer region and flanking parts of the 16S as well as 23S rRNA gene. This assay was applied on 13 reference strains and 480 clinical isolates of mycobacteria to validate the technique. Restriction was carried out with three restriction endonucleases *Hha I*, *Hinf I* and *Rsa I*. Distinct gene amplification restriction analysis patterns were obtained by restriction of amplicons with three distinct restriction endonucleases (*Hha I*, *Hinf I* and *Rsa I*) which could differentiate various mycobacterial species. Restriction patterns with the

enzymes used in this study could clearly distinguish *Mycobacterium tuberculosis* complex from other non-chromogenic clinically important species *M. avium* and *M. intracellulare*. Results indicated this assay to be a simple, rapid and reproducible method to identify clinically relevant mycobacteria.

Persistently high HIV Seroprevalence among adult Tuberculosis patients at a Tertiary Care Centre

P. Piramanayagam, Mohammad Tahir, S.K. Sharma, Duncan Smith-rohrberg, A. Biswas and M. Vajpayee. *Indian J Med Res* 2007; **125**: 163-166.

This study was designed to estimate HIV seroprevalence among tuberculosis patients presenting to a tertiary care centre in Delhi. This is a cross-sectional prevalence study among all patients presenting to the inpatient and outpatient departments of All India Institute of Medical Sciences (AIIMS), New Delhi, and receiving anti-tuberculosis treatment from May 2003 to April 2005. Of the 448 patients presented to the TB clinic during the study period, 23 (5.1%) were previously tested HIV-positive. An additional 21 patients (4.6%) refused testing, and 30 (6.7%) were lost to follow-up. Of the remaining 374 patients who consented to testing, 31 (8.3%) were found to be HIV-positive. Risk factors for HIV seropositivity included high-risk sexual behaviours (48% in HIV-TB co-infected vs 6% in TB infected patients, $P<0.001$) and history of blood transfusion (23% vs 5%; $P=0.002$). Previous studies from the same hospital published in 2000 and 2003 reported HIV seroprevalence among TB patients to be 0.4 and 9.4 per cent respectively. The current study documents a persistently high seropositivity among TB patients. These results emphasize the acute need for improved detection and treatment for HIV among TB patients in northern India.

Impact of HIV Infection on Radiographic features in patients with Pulmonary Tuberculosis

Soumya Swaminathan, G. Narendran, Pradeep A. Menon, C. Padmapriyadarsini, N. Arunkumar, N.M. Sudharshanam, S. Ramesh Kumar and S. Chandrasekhar. *Indian J Chest Dis Allied Sci* 2007; **49**: 133-136.

We examined the chest radiographs of 181 patients including 82 HIV positives with newly diagnosed sputum culture positive pulmonary

tuberculosis before and after the completion of anti-tuberculosis treatment (ATT). Patients with smear/culture positive pulmonary tuberculosis were treated with Revised National Tuberculosis Control Programme (RNTCP) Cat-I regimen (2EHRZ₃/4HR₃). An independent assessor blinded to HIV and clinical status of patients read the radiographs. At presentation, HIV seropositive patients were significantly more likely to have normal chest radiographs (14.2% vs 0), miliary tuberculosis (10.7% vs 1%) and pleural effusion (16.6% vs 3%), and less likely to have cavitation (17.8% vs 39.4%) as compared to HIV negative patients. At the end of treatment, HIV positive patients were more likely to have normal radiographs (42.8% vs 1.2%), and less likely to have fibrosis (17.8% vs 42.5%). The radiographic presentation of pulmonary tuberculosis in HIV-infected patients is atypical with less cavitation, and more dissemination. On completion of ATT, patients with HIV have less radiographic sequelae in the form of fibrosis. These features may be due to the reduced inflammatory response that patients with HIV infection may be able to mount.

Evaluation of the Technical Details of Bronchoscopic Endobronchial Sealing: Review of 67 Patients

Parthasarathi Bhattacharyya, Dipankar Sarkar, Saibal Ghosh, Saikat Nag, Sushmita Roy Chowdhury, Sujan Bardhan, Arunava Banerjee and Anjan Dutta. *Indian J Chest Dis Allied Sci* 2007; **49**: 137-141.

Management of haemoptysis not responding to conservative management is often difficult. Bronchial artery embolisation is costly and often not accessible, especially in the resource poor areas. Hence, surgery often remains the only therapeutic option despite its high morbidity and mortality rate. Therefore, an alternative easy but effective therapy is required. Endobronchial sealing is a recently described new method of therapy for haemoptysis. We carried out transcatheter endobronchial sealing procedure using an injection of n-butyl cyanoacrylate in 67 patients of haemoptysis with the help of a fiberoptic bronchoscope. The patients were followed up for a mean period of six months to document the recurrence of bleeding or other complications. The success rate on long term follow up was 79.1 per cent. There were procedure failures in 21.9%; the

cause being false localisation (46.15%), proximal or inappropriate placement of the glue (30.79%) and difficult cannulation (23.0%). Endobronchial gluing with n-butyl cyanoacrylate appears to be an efficient, safe and simple method for treating haemoptysis. The success depends on the proper identification of the bleeding bronchus and the appropriate placement of the glue.

Efficiency of a third Serial Sputum Smear Examination in the Diagnosis of Tuberculosis

A. Katamba, D. Laticevschi and H.L. Rieder. *Int J Tuberc Lung Dis* 2007; **11**(6): 659-664.

It was a retrospective laboratory register study to determine the prevalence and the incremental yield of TB cases from a third serial sputum smear examination among suspects in Moldova and Uganda, with the reciprocal of the product of these two fractions providing the number of examinations required to identify one additional TB case. In Moldova, 9% (1141/12525) and in Uganda 20% (7280/36054) of suspects met the TB case definition with at least one positive sputum smear. The incremental yield from the third examination was 4% in Moldova and 3% in Uganda. To detect one additional TB case on a third smear, 273 examinations (95%CI 200-389) in Moldova and 175 (95%CI 153-222) in Uganda were thus required. This corresponded to an average of 11 days (8-16) and 7 days (6-9), respectively, to diagnose one additional case of TB. In both countries, the third serial sputum smear examination was inefficient in diagnosing sputum smear-positive TB.

Utility of three Mammalian Cell Entry Proteins of *Mycobacterium Tuberculosis* in the Serodiagnosis of Tuberculosis

S. El-Shazly, A.S. Mustafa, S. Ahmad and R. Al-Attiyah. *Int J Tuberc Lung Dis* 2007; **11**(6): 676-682.

The Mammalian Cell Entry (MCE) proteins Mce3A, Mce3D and Mce3E, encoded by the mce3 operon of *Mycobacterium tuberculosis*, have recently been shown to be expressed during natural infection in humans. Aim was to determine the potential of Mce3A, Mce3D and Mce3E proteins in the serodiagnosis of tuberculosis (TB). The quantitative detection of anti-Mce3A, -Mce3D and -Mce3E antibodies in serum samples from active TB patients

($n = 58$), healthy contacts of TB patients ($n = 24$) and bacilli Calmette-Guerin (BCG) vaccinated healthy subjects ($n = 24$) was performed using enzyme-linked immunosorbent assay (ELISA). Antibodies in serum from 98%, 86% and 90% of active TB patients and from 92%, 75% and 96% of healthy contacts of TB patients reacted with Mce3A, Mce3D and Mce3E proteins, respectively. However, none of the serum

from BCG-vaccinated healthy subjects reacted with Mce3A and Mce3E proteins, and only 8% of serum samples reacted with Mce3D protein. Overall, serum from 98% active TB patients, 96% healthy contacts and 0% BCG-vaccinated healthy subjects were positive for anti-Mce3A and/or -Mce3E antibodies. Our results suggest that Mce3A and Mce3E proteins may be useful for the serodiagnosis of TB infection.

Dr. S.C. Kapoor, who retired from the South Central Railway as Chief Medical Officer, passed away on 1st September, 2007 after a prolonged illness. Dr. Kapoor contributed a lot to the *Indian Journal of Tuberculosis* during the period when he was its Associate Editor. He was also a member of the R.C. Garg Memorial Award Committee, for a number of years. The Tuberculosis Association of India places on record its deepest condolences