**PP-212** Rapid detection of *Mycobacterium tuberculosis* complex in spinal aspirate from cases of Pott’s spine disease

S.G. Babu1,*, M. Kumar1, R. Kumar2, V.L. Nag3, U. Singh4, T.N. Dhole2,1 Babasaheb Bhimrao Ambedkar University, Lucknow, India, 1Department of Neurosurgery, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India, 2Department of Microbiology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India, 3Department of Biostatistics, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India

**Objectives:** Pott’s disease causing paraplegia is common and increasing its prevalence in developing countries. It has poor prognosis due to late diagnosis. Therefore, rapid diagnosis is essential to decrease the morbidity and mortality of this disease. Conventional laboratory diagnosing methods are time consuming and also suffers from low sensitivity. The present study was undertaken with an aim to assess the applicability of rapid methods such as PCR with the traditional BACTEC culture and Microscopic detection of *Mycobacterium* complex (MTBC) in spinal specimens.

**Methods:** Sixty two samples of suspected cases of Pott’s disease were included in this study. They were processed for Ziehl-Neelsen staining for acid fast bacilli (AFB) and BACTEC culture for *M. tuberculosis*. Further, they were also processed for PCR amplification of insertion element IS6110 of *M. tuberculosis* complex. The Sensitivity, Specificity and positive-negative predictive value were assessed and also Kappa coefficient calculated for agreement culture between these tests.

**Results:** Out of 62 suspected Pott’s spine cases 34 were male and 28 were female ranging the age between 12 to 78 yrs. As all these samples were tested against *Mycobacterium* by the different methods and ZN staining detected AFB in 19 (30.6%); BACTEC culture was positive for MTBC in 27 (43.5%) and PCR detected MTBC in 33 (53.2%) of the above tested cases. Considering BACTEC culture as gold standard, the sensitivity, specificity, positive and negative predictive values were 96%, 80%, 79%, 97% correspondingly for the PCR test and for ZN staining they were 52%, 91%, 82% and 71% respectively. Kappa agreement between cultures with ZN and culture with PCR is 0.51 & 0.75 respectively.

**Conclusion:** PCR results showed a good agreement with BACTEC culture. Further, the results also suggests that PCR is useful for early diagnosis of tuberculosis in spinal samples.

**PP-213** Identification of non-tuberculous mycobacteria: utility of the GenoType Mycobacterium CM assay compared with colloidal gold method and 16S rRNA gene sequencing

Y.J. Shen1, J.L. Jin1, W.H. Zhang1. 1Department of infectious disease, Huashan Hospital, Fudan University, China

**Background:** Non-tuberculous mycobacteria (NTM) causing clinical disease have become increasingly common and more diverse. A new reverse line probe assay, GenoType Mycobacterium CM (Hain Lifescience), was evaluated for the ability to differentiate mycobacterial species.

**Methods:** Culture positive isolates were analyzed using colloidal gold method and 16S rRNA gene PCR and sequencing. A total of 18 clinical isolates were identified.

**Result:** According to the result of the 16S rRNA sequencing, 2 strains (11.1%) were identified as *Mycobacterium tuberculosis* (MTB). Concordant results between the GenoType Mycobacterium assay and 16S rRNA sequencing were obtained in 18/18 clinical isolates (100%). But for colloidal gold method, 1 Non-tuberculosis Mycobacterium (NTM) strain was classified as MTB while 1 MTB strain was classified as NTM and the total concordant rate was 88.9%.

**Conclusion:** In conclusion, the GenoType Mycobacterium CM assay represents a useful tool to rapidly identify mycobacterial clinical isolates. The molecular system is as rapid and reliable as the 16S rRNA sequencing, but more accurate than the colloidal gold method.

**PP-214** Chemotherapeutic implications of thioridazine against active and latent tuberculosis

A. Singh1, S. Sharma1,*. 1Department of Biochemistry, PGIMER, Chandigarh, India

**Background:** Current chemotherapy of tuberculosis (TB) has been rendered quite ineffective by the emergence of resistant strains worldwide and ineffective strategies against latent tuberculosis infection. A rational approach is to develop/improve existing drugs to be used as new antitubercular agents. Phenothiazines, particularly thioridazine has documented *in vitro* activity against various strains of *M. tuberculosis*. Further, it has been shown that Phenothiazines analogues specifically inhibit type-II NADH dehydrogenase and may be effective in preventing the transition of *M. tuberculosis* from actively growing to non-replicating stage during chronic infections. The present study was designed to evaluate their *in vitro* and *in vivo* killing efficacies against active and latent TB.

**Methods:** Thioridazene was evaluated for its *in vitro* and *in vivo* inhibitory activity against active and latent *M. tuberculosis*.

**Results:** Thioridazine was found to be effective against *M. tuberculosis* with a MIC of 10 μg/ml. Thioridazine showed synergistic activity with front-line antituberculosis drugs Rifampicin and Isoniazid even at sub-MIC concentrations. *In vivo* studies confirmed the accumulation of Thioridazene in the alveolar macrophages. When Thioridazine was used in combination with Rifampicin and Isoniazid in a short-course chemotherapy model of experimental tuberculosis, it showed more potent activity than a combination of Rifampicin and Isoniazid. Similar results were observed in 6-week extended chemotherapy for experimental tuberculosis, when thioridazine was used as an adjunct drug in the standard regimen. Thioridazine also showed promising activity against *in vitro* and *in vivo* models of latent tuberculosis, where it was able to kill dormant/latent bacilli effectively.

**Conclusions:** Thioridazene has shown potential in vitro and *in vivo* activity against both active and latent tuberculosis. Our observations clearly show that phenothiazines, especially thioridazine may be considered as an adjunct drug for improving the chemotherapy of tuberculosis.

**PP-215** Effectiveness and safety of intrapleural tissue plasminogen activator in the prevention of pleural thickening and loculated effusions by infective pleurisy

J.-C. Lin1, C.-R. Zhang1,*, W.-M. Xu1, M. Li1, W.-L. Cui1. 1Huang Pu Hospital of the First Affiliated Hospital, Sun Yat-sen University, Guangzhou 510700, China

**Objective:** To explore the clinical curative effect of intrapleural injection of Tissue Plasminogen Activator (t-PA) in the prevention of pleural loculated effusions by infective pleurisy.

**Methods:** 32 patients with loculated effusions were randomized into 2 groups, intrapleural Tissue Plasminogen Activator therapy group and conventional group (control group). The patients in therapy group were injected with t-PA 10 mg and saline 50 ml intrapleurally after each
Analysis of features of chest X-ray and surveillance of blood glucose level on diabetes mellitus complicated with pulmonary tuberculosis

C.-R. Zhang1 *, X.-Y. Liu1, H. Zhou1, W.-L. Cui1, W.-M. Xu1. 1Huang Pu Hospital of the First Affiliated Hospital, Sun Yat-sen University, Guangzhou 510700, China

Objective: To observe the features of chest X-ray and the control of blood glucose on diabetic patients complicated with pulmonary tuberculosis.

Methods: The clinical data of a total of 316 diabetes mellitus patients with pulmonary tuberculosis were made a retrospectively investigation from Jan 1998 to Dec 2007.

Results: Chest X-Ray examination manifested mass confluence or plaque tuberculosis focus, there were bronchidissemination focus around the cavity. The GHBA1c, C peptide and the control of blood glucose level were 10.74±2.95%, 0.56±0.38 nmol/L, 13.11±5.63 nmol/L, 9.32±2.9%, 0.60±0.3 nmol/L and 10.61±2.9 nmol/L in the diabetic patients with and without pulmonary tuberculosis respectively. There were significant difference for GHBA1c and blood glucose level between the two groups (P<0.05). Conclusions: The characteristic changes of the cavity and surveillance of blood glucose level are helpful to diagnosis of pulmonary tuberculosis in the patients with diabetes mellitus.

Treatment for abdominal tuberculosis caused adhesive small bowel obstruction using ileus tube combined somatostatin

X.Y. Cao1, J. Jiang1 *, M.-S. Jin2, L. He2, Q. Wang2, J. Suo1. 1Department of Gastrointestinal Surgery, First Hospital of Jilin University, China, 2Division of Clinical Epidemiology, First Hospital of Jilin University, China

Background: Abdominal tuberculosis was an important cause for intestinal obstruction in many countries. The aim of this study was to evaluate the efficacy and safety of ileus tube and somatostatin for abdominal tuberculosis caused adhesive small intestinal bowel obstruction in a single center study.

Methods: Between January 2002 and April 2011, Fifty-one patients diagnosed with abdominal tuberculosis caused adhesive intestinal bowel obstruction were enrolled in the study. They were randomly divided into two groups: somatostatin (0.6 mg/day) + ileus tube group (Group A, n = 24), and nasogastric tube group (Group B, n = 27). All cases received conventional treatment, including fasting, maintaining electrolyte and acid-base balance, enteral and parenteral nutrition support, conventional antitubercular chemotherapy and antibiotics treatment.

Result: Group A had a quick recovery of flatus and stool compared with Group B, [(4.5±1.9) d] (P<0.05). Abdominal pain and abdominal distension recovered faster [(3.6±1.5) vs (8.4±2.2) day] in the group A compared with the group B. The rate of intestinal operation in Group A was 4.2%, which was significantly less than the 25.9% in Group B (P<0.05).

Conclusion: Abdominal tuberculosis is an important and increasingly common cause of acute bowel obstruction. The high improvement rate in abdominal symptoms suggested the efficacy of somatostatin and ileus tube in patients with intestinal bowel obstruction caused by abdominal tuberculosis. The application of somatostatin combined with ileus tube can improve the symptoms of tuberculosis adhesive intestinal obstruction and decrease the rate of operation. Aggressive surgery should be avoided and initial surgical intervention should be limited to tissue or fluid sampling.

The interferon-gamma release assay used in patients with Fever of Unknown Origin

Y. Wang1, K.Y. Zhang1, H.Y. Chen1, Y.X. Li1, X.Y. Yang1, W.G. Bao1, F. Wang1 *, 1The Infectious disease department of the 1st hospital of Jilin University, Changchun, China

Background: T-SPOT.TB is an interferon-gamma release assay to detect T-cell response to early secreting antigen target 6 and culture filtrate protein 10 peptides by enzyme-linked immunosassay for tuberculosis diagnosis. This assay has been licensed for in-vitro diagnosis in Europe, the United States and China. We enrolled 48 patients in the 1st hospital of Jilin University with fever of unknown origin whose blood culture and sputum culture results were negative and hematological disease and connective tissue disease were eliminated. Totally 48 patients took T-SPOT.TB assay to detect early secreting antigen target 6 or culture filtrate protein 10 peptides-specific T cells in the peripheral blood. The patients also took tuberculin skin test (TST). We use T-SPOT.TB produced by Oxford Immunotec Ltd.

Result: The results of T-SPOT.TB of 25 patients were positive. 19 of them received anti-tuberculosis therapies and improved. 6 patients’ body temperature decreased to the normal level after being treated with proper antibiotics. The TST results of 13 patients were positive. One patient was empirically treated with antibiotics first but failed. And then the patient was suspected to be with tuberculosis by hydrothorax tests and received experimental antituberculosis therapies and recovered soon. 20 patients were diagnosed as active tuberculosis. 6 patients were considered as latent tuberculosis. The sensitivity of T-SPOT.TB is 95% and the specificity of T-SPOT.TB is 100%. The sensitivity of TST is 40% and the specificity of TST is 61.5%. Most patients with latent tuberculosis refused the treatment of anti-tuberculosis.

Conclusion: The infection rate is high in China. Tuberculosis is an important etiology of fever of unknown origin. Interferon-gamma release assay has much higher sensitivity and specificity than TST.