TUESDAY, SEPTEMBER 27TH 2011

435. Novel strategies for the diagnosis of tuberculosis

P4380
Late-breaking abstract: Expression of IFN-g/IL-10 in active pulmonary tuberculosis patients and household contacts
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There is an increase in the prevalence of tuberculosis in young adults. Since, cytokine mediated immune responses to Mycobacterium tuberculosis infection are important determinants of disease development and pathology, the aim was to investigate the role of candidate cytokines in active pulmonary tuberculosis patients (APTB) of younger age (15 to 25 yrs) & their HouseHold Contacts (HHC). T cell assays were stimulated with r32-kDa antigen of M. bovis BCG (Ag85A-BCG), IFN-g & IL-10 were measured in the culture supernatants by ELISA in APTB (15), HHC (PPD-positive) (15) & Healthy Controls (HC) (PPD status not known) (15). Expression levels were determined by quantitative real time-PCR in 4 individuals from each group. The mean proliferative responses of stimulated cells were significantly low (p<0.05) in APTB and HHC compared to HC (1.35 ± 0.72; 1.55 ± 0.89 and 4.48 ± 4.43) respectively. The mean IFN-g (p<0.05) (43.4 ± 24.8; 46.0 ± 22.2 & 70.9 ± 41.5) & IL-10 (85.7 ± 58.7; 63.0 ± 44.2 & 11.4 ± 7.7 pg/ml (P<0.003 & <0.0006) levels were significantly low and high respectively in APTB & HHC when compared to HC. The expression of IFN-g was high (5-fold) in HC when compared to APTB (1.5-fold) &HHC (3-fold), against the corresponding unstimulated cells. IL-10 expression increased by 8-fold in APTB & 6-fold in HHC compared to HC (2-fold). In conclusion, elucidation of the mechanism by which Th1 cytokine is down-regulated may enhance our understanding of susceptibility to disease. Also, follow-up of the contacts for their clinical status may help in identifying a biomarker for house-hold contacts useful for early diagnosis.

P4381
Analysis of C-reactive protein and fibrinogen as possible predictors of secondary fibrosis in pulmonary tuberculosis
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Aim: To study the influence of C-reactive protein (CRP) level in the blood, fibrinogen level and general inflammatory syndrome as the predictors of development of secondary fibrosis in patients with pulmonary tuberculosis (TB).

Methods: Concentration of CRP, fibrinogen level was measured using immunoturbidimetric method including criteria was presentation of TB process in both lungs, as the sign of widespread TB process.

Results: We examined 85 patients treated in one year. Mean CRP level was 22.6 mg/mL, range 5-245 mg/mL; normal level (up to 8 mg/mL) was measured in 23.4% patients, medium level (9-20 mg/mL) was measured in 31.3% patients, high level (21-50 mg/mL) were measured in 26.2% patients, and in 23.7% patients CRP were higher than 50 mg/mL. Average fibrinogen level in whole group was 6.9 g/L (SD 5.8). Normal level of fibrinogen (up to 4 g/L) were measured in 6.4% of patients; 5.1-10 g/L were measured in 24.6% patients, 10.1-20 g/L were measured in 31.1% patient and level more than 20 g/L were measured in 37.9% patients. Using statistic method of partial correlation statistical significane at level p<0.05
was shown between them. Correlation of CRP and fibrinogen level with appearance of fibrosis on X-ray of the lung was shown. Thereafter, closer correlation was shown with fibrosis and CRP level than with CRP and fibrosis. 

Conclusion: Predicted value of CRP and fibrinogen for pulmonary fibrosis was shown in TB patients. So, attenuation of fibrosis development, possible with antifibroblastic activity of pentoxyphyllin, should be taken in consideration, for shown in TB patients. So, attenuation of fibrosis development, possible with antifibroblastic activity of pentoxyphyllin, should be taken in consideration, for shown in TB patients.

Methods: A cross sectional study was carried out on 29 patients from Sep 2007 till Dec 2010. All of the tuberculosis patients included had a positive sputum smear or positive biopsy or bronchoalveolar lavage (BAL). ESR and ADA were checked for these patients in treatment initiation, 30th and 60th day of treatment. According to ADA diagnostic kit values, ADA more than 15 is high.

Results: Mean age of the patients was 38.9 ± 9.9 years. Mean ADA before therapy was 19.31 which gradually decreased to 12.37 (on day 30) and 11 (day 60). Significant difference (p=0.000). Mean ESR before initiation of therapy was 65 which decreased gradually to 38.66 (day 30th) and 23.28. Male patients were 55.2%, 82.8% suffered from pulmonary TB. Comparison of ADA and ESR at the end of therapy showed a significant difference (p<0.001). Male patients were 11.84±1.60 and in females were 10.76±2.04. Mean ESR (60th day) in males was 25.50±5.48 and in females was 23.03±2.02.

Conclusion: Decreasing level of serum ADA is a valuable and reliable predictor in successful treatment of tuberculosis.

P4382 Decreasing level of serum ADA: A valuable predictor of treatment in smear positive tuberculous

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Background: High titer of adenosine deaminase (ADA) in pleural effusion is an indicator of pleural tuberculosis and necessity of treatment initiation. On the other hand high serum titer of ADA is a characteristic of tuberculosis, and is used for treatment follow up in patient on standard antituberculosis regimen. Decreasing level of ADA could be a predictor of treatment response.

Methods: A cross sectional study was carried out on 29 patients from Sep 2007 till Dec 2010. All of the tuberculosis patients included had a positive sputum smear or positive biopsy or bronchoalveolar lavage (BAL). ESR and ADA were checked for these patients in treatment initiation, 30th and 60th day of treatment. According to ADA diagnostic kit values, ADA more than 15 is high.

Results: Mean age of the patients was 38.9 ± 9.9 years. Mean ADA before therapy was 19.31 which gradually decreased to 12.37 (on day 30) and 11 (day 60). Significant difference (p=0.000). Mean ESR before initiation of therapy was 65 which decreased gradually to 38.66 (day 30th) and 23.28. Male patients were 55.2%, 82.8% suffered from pulmonary TB. Comparison of ADA and ESR at the end of therapy showed a significant difference (p<0.001). Male patients were 11.84±1.60 and in females were 10.76±2.04. Mean ESR (60th day) in males was 25.50±5.48 and in females was 23.03±2.02.

Conclusion: Decreasing level of serum ADA is a valuable and reliable predictor in successful treatment of tuberculosis.

P4383 Adenosine deaminase, an useful tool for the diagnosis of tuberculous pleuritis in France

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Pleural tuberculosis is a diagnosis challenge for usual mycobacterial analysis given that the bacillary concentration is low in the pleural effusion. Adenosine deaminase is a pleural inflammatory marker recommended for the diagnosis of pleural tuberculosis in the high-prevalence countries. There is not enough data to support its use in a low-prevalence country.

Objective: To know the utility of ADA for the diagnosis of pleural tuberculosis in France, a low prevalence country.

Material and method: Retrospective study of the exudative pleural effusion with the ADA dosage (Giusti’s method) done in two military hospital near Paris. We compared tuberculous and non-tuberculous pleural effusion. The best cut-off value of ADA for the diagnosis of pleural tuberculosis was found using ROC curves.

Results: 183 patients were studied, including 29 tuberculosis, 65 cancers, 5 malignant hemopathies, 32 paraneumonic pleural effusions, 24 purulent pleuritis, 12 old transudative effusions, 14 effusions from others aetiologies. Sixty-eight of ADA for the diagnosis of pleural tuberculosis was found using ROC curves.

Conclusion: ADA dosage is useful in France. Lower than 47 UI/l, it may exclude tuberculosis. When ADA ≥ 47 UI/l, the result should be interpreted considering the context and the pre-test probability of tuberculosis. When this pre-test probability of tuberculosis is important, ADA ≥ 70 UI/l is very likely for tuberculosis.

P4384 Clinical utility of a lateral flow serologic test in the rapid diagnosis of pulmonary TB in a public-private mix for DOTS setting in Iloilo City, Philippines

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Background & rationale: Diagnosis of PTB in a developing country with a limited resource relies largely on clinical features, sputum exam and chest xray. In an endemic area such as the Philippines, the urgent implementation of intensified case-finding and infection control measures which reduce the burden of TB is essential to saving lives. Culture methods are not routinely used in the locality due to the low cost-effectiveness and time constraints. By using serologic methods, the time required to reach a clinical decision to treat a suspected case of TB may be significantly reduced. We have investigated the utility and diagnostic accuracy of a lateral flow serologic test in PTB diagnosis when used as an adjunct in the Fast-DOTS setting.

Methods: An immuno-chromatographic TB STAT PAK II Assay was employed for the detection of antibodies to M. tuberculosis in the human whole blood of TB suspects. Humoral response was analyzed in a group of 105 TB suspects (74 in the active PTB group - 47 smear-positive and 31 smear-negative, and 31 in the non-active/control group - 31 smear-negative and 6 healthy subjects).

Results: The proportion of all test subjects with PTB who tested positive on the assay was 65%, while the proportion of all subjects without PTB who tested negative was 100%. The positive predictive value (PPV) and the negative predictive value (NPV) was 100% and 50.94%, respectively.

Conclusion: The serologic test performed with excellent specificity and acceptable sensitivity in PTB diagnosis in an endemic setting, though not enough evidence exists that they perform well enough to replace sputum microscopy.

P4385 Prognostic values of serum IP-10 and IL-17 in patients with pulmonary tuberculosis

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Objective: To identify patients at high risk of relapse after anti-tuberculosis (TB) therapy or with poor outcomes.

Methods: Fifty-one patients with pulmonary TB: 7 were classified as high risk of relapse (HR, both cavitations on initial chest radiograph and positive sputum smear/cultures after two months of anti-TB treatment); 19 moderate-risk (MR, one risk alone); and 25 low risk (LR, neither risk). Serum interferon (IFN)-γ-inducible protein 10 (IP-10, IP-10), and interleukin-17 (IL-17) levels were investigated.

Results: There was a trend towards higher serum IP-10 level (p=0.026) was independently associated with all-cause mortality. There was a trend towards higher serum IP-10 level (p=0.026) was independently associated with all-cause mortality. There was a trend towards higher serum IP-10 level (p=0.026) was independently associated with all-cause mortality. There was a trend towards higher serum IP-10 level (p=0.026) was independently associated with all-cause mortality.

Discussion: IP-10 was positively correlated with serum IL-17 levels, and both were significantly correlated with serum IFN-γ levels. Multivariate analysis demonstrated that a month-2 serum IP-10 level of ≥7 pg/ml (p=0.026) was independently associated with all-cause mortality.
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IP-10 is an additional marker to evaluate the RD1-specific responses in HIV-infected subjects

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Background: The current sensitivity of IFN-γ-based assays, especially in immunocompromised individuals, emphasizes the need for alternative markers for diagnosing tuberculosis (TB). Objective of this study was to evaluate whether IP-10 can be a useful biomarker for evaluating a specific response to RD1 antigens associated to active TB in HIV-infected individuals. Control with QuantiFERON-TB Gold In tube (QFT-IT) was performed.

Methodology: 118 HIV-infected individuals were prospectively enrolled in Rome, 21 with active TB and 98 without. Epidemiological characteristics and markers were analyzed: IFN-γ and IP-10 response to QFT-IT was performed. Plasma was harvested at day1 and soluble factors evaluated by ELISA.

Results: Significant differences between those with or without active TB were found for the CD4 T cell counts (p=0.02), and IFN-γ and IP-10 response to QFT-IT (p=0.001 for both analysis). Differences in significant differences were found for the age and HIV-RNA. Based on the commercial cut-off of the QFT-IT and on a cut-off found by ROC analysis for the IP-10-based responses, the sensitivity for active TB of QFT-IT and the IP-10 to QFT-IT was 52% and 67% respectively (p=0.001; K: 0.545). The response to IP-10 was not influenced by the ability to respond to the mitogens. The specificity for active TB of QFT-IT and of the experimental test were 84% and 77% respectively (p=0.001; k: 0.710). Among those with no active TB a significant correlation between a positive score and Mtb exposure was found (p<0.001).

Conclusions: These data suggest that IP-10 is an additional marker to evaluate the RD1-specific responses in HIV-subjects confirming data previously obtained in high TB endemic countries.

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Evaluation of platelet count and indices in pulmonary tuberculosis and pneumonia

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Recent studies show that platelets (Plt) have important roles in the immune system. It is known that MPV (mean platelet volume) and PDW (platelet distribution width) increase during platelet activation. Some research indicates their roles in coronary artery disease, thromboembolic disease and endotoxemia. The aim of our study, changes in platelet count and indices are investigated in pulmonary tuberculosis and pneumonia. Platelet count and indices were evaluated in 98 patients with active tuberculosis (mean age 38.78±15.42) and 35 patients with pneumonia (mean age 40.46±17.37) and 20 healthy control (mean age 36.20±11.62). Radiological extent of the diseases were assessed. In the active tuberculosis group values were significantly higher (Plt: 381683±125046; MPV: 8.57±1.39; PDW: 14.67±2.10; PCT (plateletcrit): 0.31±0.09) than pneumonia group (Plt: 283457±125046; MPV: 8.74±0.42; PDW: 14.74±1.35; PCT: 0.25±0.04) and healthy control group (Plt: 266150±55084; MPV: 8.75±0.42; PDW: 12.84±0.86; PCT: 0.24±0.03). In the pneumonia group values were significantly lower than active tuberculosis group; but only PDW values were significantly higher than healthy control group (p<0.05). Platelet count and PCT showed significant correlation with radiological extent of tuberculosis, while MPV and PDW correlations with radiological extent of tuberculosis were not significant. Plt, MPV, PDW and PCT correlations with radiological extent of pneumonia were not significant. These results emphasize that Plt, MPV, PDW and PCT change in tuberculosis. These changes may not reflect only disease activity and acute phase reaction. Plt and indices may be potential role in tuberculosis immunopathogenesis.

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Urinary neopterin levels discriminate active from latent mycobacterium tuberculosis infection

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Background: Neopterin is released by macrophages in response to stimulation by interferon gamma. Objective: To assess whether urinary levels of neopterin can discriminate between latent and active mycobacterium tuberculosis infection.

Methods: Urinary neopterin/creatinine ratio’s were determined in patients with active and latent m. tuberculosis infection and controls without m. tuberculosis infection. Latent m. tuberculosis infection was defined as reactive interferon gamma release assay for m. tuberculosis in the absence of active disease.

Results: Seven patients with active tuberculosis, 27 patients with latent m. tuberculosis infection and seven controls were recruited. There was no difference in age or gender between groups. Urinary neopterin/creatinine ratio was higher in patients with active tuberculosis (412.8 micromol/mol, 95% CI 89.7 to 735.8) than patients with latent m tuberculosis infection (147.5 micromol/mol, 95% CI 114.0 to 180.8) and controls (122.2 micromol/mol, 95% CI 71.2 to 173.1) (p<0.01). ROC curve analysis revealed an area under the curve of 0.81 (95% CI 0.62 to 0.99). A cut-off of 349 micromol/mol showed 100% diagnostic specificity in detection of active tuberculosis in people with m. tuberculosis infection.

Conclusions: Urinary neopterin/creatinine ratios are significantly higher in patients with active tuberculosis compared to patients with latent m. tuberculosis infection. These findings suggest that neopterin appears to be a suitable marker to reflect tuberculosis disease activity.

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Delays in the diagnosis and treatment of tuberculosis in a south London hospital: The role of chest X-rays

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Introduction: Early referral of patients with suspected tuberculosis (TB) has a significant impact to clinical outcome (leading to shorter infectivity and reduced morbidity and mortality rates).

Aim: To identify factors contributing to delays in the diagnosis of extra-thoracic (pulmonary, mediastinal and pleural) TB.

Methods: A retrospective review of all patients who were diagnosed with intra-thoracic TB (January 2003 to January 2011) in Queen Elizabeth Hospital, Woolwich. Allowing for a chest X-ray (CXR) turn-around time of 3 weeks and a median period of 7 days between TB diagnosis and commencing treatment, we reviewed the full radiological history of all patients for whom the cut-off period of 28 days was exceeded. Delayed cases were divided into five groups, according to the reason for the delay:

1. Clinical diagnostic delay (unreported/missreported CXRs)
2. Delayed referral to specialist services
3. Pleural effusion (CXRs with effusions, subsequently proven to be tuberculous)
4. CXRs with concurrent pathologies
5. Lost to follow up

Results: 634 intra-thoracic TB notifications were made within the specified time period. 121 patients (19%) had at least one abnormal CXR taken 28 or more days prior to starting treatment (group 1: 38, group 2: 43, group 3: 16, group 4: 8, group 5: 16). The time delay between first abnormal CXR and starting treatment varied considerably (median: 69.5 days, range: 29–1020 days) and was greater in male (73%) and Asian patients (40%). 32 patients (26.4%) were smear positive.

Conclusion: The diagnosis of RTB is delayed for a significant number of patients and appropriate measures should be taken in order to minimise such delays.

P4390

The role of bronchoalveolar lavage in suspected pulmonary tuberculosis with negative sputum

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Objective: The aim of this study was to assess the yield of bronchoalveolar lavage in early diagnosis of negative sputum smear pulmonary tuberculosis and its impact on management of these patients.

Methods: The study was conducted for 27 months in a central hospital. Bronchoalveolar was performed in patients after three consecutive negative sputum smears following acid-fast bacilli, in United Kingdom. Informed consent was obtained.

Results: The overall diagnostic yield of fiberoptic bronchoscopy was 39% (39 out of 100) and included 18% of other diagnosis than tuberculosis with 3 cases of malignant disease. Through bronchoalveolar lavage smear and nuclear acid amplification test for Mt. tuberculosis an immediate diagnosis was obtained in 57.1%. Median time to positive culture was lower in bronchoalveolar lavage compared to smear (p=0.001). The global resistance and without drugs was 19%.

Conclusions: Bronchoalveolar lavage samples were helpful in the management of...
P4391 Diagnostic accuracy of sputum induction test compared with bronchoscopic results for the diagnosis of pulmonary tuberculosis

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Rationale: Diagnosis of pulmonary tuberculosis is difficult in patient who do not produce sputum spontaneously, or who have AFB smear (+) sputum. Bronchoscopy is helpful in these patients, but in many cases cannot be readily available. We prospectively compared the diagnostic yield of sputum induction test with bronchoscopy.

Methods: Between February 1 to July 31, 2010, we included the patients suspected active pulmonary tuberculosis, who could not produce sputum spontaneously, or who had a pair of AFB smear (+) sputum. They underwent sputum induction test and bronchoscopy. We calculated the sensitivity of AFB smear, culture for Mycobacterium tuberculosis, TB-PCR of each test, and evaluated the concordance rate by kappa test.

Results: Sensitivities of AFB smear were 36.1% in sputum induction test and 33.3% in bronchoscopy. Sensitivities of culture for Mycobacterium tuberculosis were 69.4% and 75.0%, and TB PCR were 52.8% and 58.3% in sputum induction and bronchoscopy, respectively. The results of AFB smear by sputum induction and bronchoscopy were concordant in 94% (63/67 case, Kappa test=0.819). In culture for Mycobacterium tuberculosis, the results were concordant in 82% (54/67 case, Kappa test=0.684) and the results of TB-PCR were concordant in 88% (59/67 case, Kappa test=0.75).

Conclusions: In this study, sputum induction test had shown similar diagnostic value and sensitivity with bronchoscopy in the diagnosis of active pulmonary tuberculosis. In patients who are difficult in collecting sputum, or have AFB smear-negative sputum, sputum induction test can be an alternative approach to the diagnosis of active pulmonary tuberculosis.

P4392 Use of fiberoptic bronchoscopy in early diagnosis of sputum smear-negative pulmonary tuberculosis

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Background: Pulmonary tuberculosis (PTB) is a major health problem worldwide. Rapid diagnosis allows early treatment and infection control, which is hard to achieve among sputum smear-negative (SSN) subjects. Different bronchoscopy and fiberoptic bronchoscopy techniques have been used but their roles remain unclear.

Objectives: To evaluate the value of fiberoptic bronchoscopy in the diagnosis of PTB among SSN persons in a regional hospital in Hong Kong.

Methods: Medical records of 22 patients, who have undergone bronchoscopy in the North District Hospital, HKSR, in 2009, and were later diagnosed of having PTB, were reviewed. Results of their pulmonary specimens were recorded. The exclusive diagnostic test was identified.

Results: Bronchoalveolar lavage (BAL) was performed in all 22 cases. Positive acid-fast smear and culture were obtained in three (13.6%) and six cases (27.3%) respectively, providing the exclusive means of diagnosis for four cases (three from smear, one from culture). Molecular study from BAL was done in 14 cases, in which five cases were test positive (35.7%), two cases gave exclusive diagnosis. Transbronchial lung biopsy (TBBL) was performed in 19 cases. All were sent for histology, while six were sent for acid-fast bacilli (AFB) culture. Histology gave positive results in five cases (26.3%), which was the exclusive means of diagnosis for two. TBBL AFB smear was all negative, but three gave positive AFB culture. Among them, one provided exclusive diagnosis.

Conclusions: While sputum examination remains the cornerstone in diagnosing PTB, fiberoptic bronchoscopy plus various sampling techniques served as a useful adjunct to optimize the diagnostic yield, especially among those SSN cases.

P4393 Rapid molecular detection of rifampicin and isoniazid resistance and identification of mutations in resistant genes of multi-drug resistant tuberculosis (MDR-TB) patients

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Recently identification of mutations responsible for drug resistance by molecular methods are used to detect antimycobacterial resistance in MDR-TB patients and to overcome difficulties of treatment planning in some TB patients. In our study 29 patients were evaluated - 16 patients who were treated with minor therapy or with suspicion of MDR-TB and 13 patients with treatment failure, relapsing and returning after defaulting, who were taking retreatment regime. Mutations in rpoB, katG and inhA gene zones specific for rifampicin and isoniazid were investigated with molecular methods in 14 patients from direct smear positive samples and in 15 patients from positive culture. AFB stain, culture and drug susceptibility testing with BACTEC 460 were also done for all samples. 28 samples (22 MDR-TB, 5 susceptible to four drugs, 1 culture negative) were identified as M. tuberculosis complex. 1 patient was detected as M. intracellulare. 27 Patients who were culture positive for MTB were positive with molecular methods, 1 patient who was determined as MDR-TB and isoniazid resistance was detected in 21 (9/5.5%) patients. In 5 patients who were susceptible to four drugs, no mutation was found. In 3 patients with HR resistance, cure was achieved with retreatment.

Conclusion: The detection of HR resistance with molecular methods is a guide to diagnosis of MDR-TB patients and shortens the time to starting of MDR-TB treatment.

P4394 Real time polymerase chain reaction (RT-PCR) based rapid detection of multi-drug resistant (MDR) mycobacterium tuberculosis (MTB)

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Objective: Rapid confirmation of diagnosis of MDR and MDR-MTB in clinical samples by real time PCR and Melting Curve Analysis (MCA).

Introduction: TB is one of the leading causes of mortality in world. An extremely robust aspect of MTB is the recent rise in MDR- MTB cases in several countries. The culture based diagnostic procedures take weeks to detect TB and its drug resistant variants. In developing countries this delay could compromise efforts to interrupt TB transmission. There is, therefore, intense interest to develop rapid and precise molecular diagnostic methods.

Methods: DNA was extracted from sputum or body fluids of about 100 patients suspected of TB. MTB diagnosis was confirmed by RT PCR amplification and subsequent melting curve analysis, using specific probes (goH2) and primers for rifampicin (RIF) and isoniazid (INH) respectively. The data obtained from culture and molecular methods was compared.

Results: MTB diagnosis was confirmed by RTPCR with 100% sensitivity on subgenus format. For detection of MDR, complete agreement between diagnoses from RTPCR and Culture was observed in 38 cases out of 40 cases. 2 false positive for RIF resistance were was observed. No false positive or false negative cases were observed for resistance to INH in this study.

Conclusions: Real time PCR based assay with MCA has considerable promise for confirmation of diagnosis of MTB and MDR TB. Development of more specific probes can further improve its diagnostic potential.

P4395 Effectiveness of TB diagnostics with microbiological methods in TB service and general health care institutions

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Objective: To evaluate the effectiveness of TB diagnostics with microbiological methods in TB service and general health care institutions.

Materials and methods: The effectiveness of TB diagnostics with microbiological methods was studied in TB patients diagnosed in 2007-2009 in three TB centers in Russia. The proportion of patients with positive sputum smears and positive culture results was determined.

Results: In 2007-2009 the proportion of SS+ among TB patients examined by microscopy in CDL of GHC institutions increased by 33.3%. The indicator (1-5%) in 2009 was achieved in 7 out of 15 Russian regions. The proportion of newly detected pulmonary TB patients, SS+ by microscopy, among all registered SS+ by microscopy new cases of pulmonary TB has increased by 11.6% (2007 - 24.3%; 2008 - 23.6%; 2009 - 27.5%). The proportion of newly detected patients, SS+ by microscopy, examined in CDL of TB service institutions, increased by 1.0% (48.8% and 49.3% accordingly).

Conclusion: In general, thanks to funding from different sources (FTP, World bank and GFATM) during 2005 - 2009 all doctors and laboratory technicians of TB service and GHC institutions were trained to detect TB with microbiological methods, the laboratory equipment and supplies were received and put to use and that resulted in improving performance quality of laboratory service.
P4396
Laboratory diagnostics of pulmonary mycobacteriosis
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Increase in risk groups on mycobacteriosis (AIDS and other immunosuppressed patients), difficulties in differential diagnostics with TB, differences in mycobacteriosis incidence in different countries demand studying regional features of nontuberculous mycobacteria (NTM) occurrence and improving mycobacteriosis diagnostics.

The aim of the study was definition of occurrence and clinical value of NTM and improving mycobacteriosis diagnostics. In 2009, 45 NTM cultures were isolated from 23 patients with TB or TB suspicion in centre using solid media and BACTEC MGIT 960. The proportion of NTM among all mycobacterial cultures was 0.9%. NTM identification was carried out using biochemical and cultural tests and molecular method Genotype Mycobacterium CM (Hain Lifescience, Germany).

60.9% NTM strains isolated from 14 patients were fast-growing (M. abscessus, M. fortuitum, M. cheloneae, M. peregrinum, M. smegmatis, M. phlei) and 39.1% strains isolated from 9 patients were slowly growing (M. avium complex, M. kansasii, M. gordonae, M. terrae). 73.9% NTM strains isolated from 17 patients were clinically relevant; NTM strains isolated from 6 patients hadn’t clinical relevance. NTM cultures were isolated many times from 10 patients, once from 13 patients. Mixed cultures (M. tuberculosis and NTM) were isolated from 5 patients. This fact can be evidence of TB superinfection in patients with mycobacteriosis during hospital stay. Mycobacteriosis can be diagnosed in patients with pulmonary inflammatory process progressing in spite of antituberculous therapy in case of NTM culture isolation in 3 samples and more. Laboratory diagnostics of pulmonary mycobacteriosis should include a complex of microbiological and molecular methods.

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Diagnostic culture confirmation and bacteriological evidence of cure in English adult TB cases: Can we do better?
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Background: WHO and European guidelines recommend high levels of culture confirmation of pulmonary tuberculosis (TB) cases, and that clinicians report evidence of bacteriological cure. To date these criteria are not used in the UK.

Objectives: 1. To determine why not all cases of notified pulmonary TB have microbiological confirmation, and to identify factors required to improve the proportion of cases confirmed by culture. 2. To investigate the feasibility of obtaining bacteriological cure in culture confirmed cases.

Methods: Records for adults diagnosed with pulmonary TB and notified in 2009 from 3 hospitals in England (Bristol Royal Infirmary, St Mary’s and Royal Free) were reviewed. A standard tool collected clinical and demographic data.

Results: 123 cases were identified (85% confirmed HIV negative). 95% of subjects had sputum or lung fluid samples sent for smear and culture. 58% of subjects had smear positive disease. Culture was positive in 79% cases. 5% had no cultures performed - mainly because non-TB specialists requested samples. At treatment completion, 16% of subjects were documented as microbiologically cured and 83% not tested. The main reasons were absence of symptoms and radiological resolution.

Conclusion: To improve bacterial confirmation at diagnosis, current culture techniques need enhancing. An awareness of needing specific mycobacterial samples amongst non-TB specialists may help. Given that documentation of bacteriological cure is rarely performed, optimising simple sputum collection may be the only option as it is unlikely that induced sputum or bronchoscopy in asymptomatic patients at treatment end is acceptable, and unlikely to be cost effective.