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## 276. Clinical tuberculosis

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**P2570****A cost optimization approach to occupational health screening for tuberculosis**

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**Introduction:** National UK guidelines recommend a two-staged screening process for Tuberculosis (TB) in new-entrants to the National Health Service using a chest radiograph (CXR), followed by a Mantoux test and or an Interferon Gamma Release Assay (IGRA) test. The IGRA test appears to be more cost-effective, with a higher sensitivity and specificity than the Mantoux test. Trials in community settings, using first line IGRA test, then CXR, have been more cost-effective compared to the guideline approach. Budgetary constraints necessitate allocating the existing screening resources judiciously.

**Aim:** To assess the effectiveness of first line IGRA test followed by CXR in TB screening.

**Methods:** A retrospective study of 246 new-entrant healthcare workers with risk factors for TB, based on symptoms, IGRA tests and CXR was undertaken. Criteria for Latent Tuberculosis Infection (LTBI) were positive IGRA test and a normal CXR.

**Results:** The prevalence of LTBI was 16.7%. CXRs were needed in 236 subjects. Only 128 (52%) had CXRs done, which did not show active TB; 87 of them had negative IGRA tests, and no documented risk factors for TB. The 108 that declined CXRs did not report any symptom of TB, and 105 of them had negative IGRA tests. Normal CXRs, within the preceding year, were associated with LTBI ( $p < 0.05$ ). CXRs could have been avoided in the 192 subjects (81%) who had a negative IGRA tests had this test been done first.

**Conclusion:** The "IGRA test first" protocol is more cost-effective than a "CXR first protocol", during TB screening, due to a reduction in the number of CXRs required. The presence of symptoms, a positive IGRA/Mantoux test, or risk factors for active TB should be indications for a CXR.

**P2571****Predictors of delayed sputum culture conversion in tuberculosis patients**

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**Introduction:** Failure to sputum culture conversion at the second month of tuberculosis (TB) treatment has been reported to be a predictor of patient infectivity and treatment failure.

**Aim:** To identify factors associated with delayed sputum culture conversion among pulmonary TB patients under anti-TB treatment.

**Methods:** Retrospective cohort of 136 adult patients with culture-proven pulmonary TB referred to an urban Chest Disease Centre (January 2006-June 2009). Delayed sputum culture conversion was defined as persistent culture positivity after 2 months of treatment. Socio-demographic, clinical, radiological, microbiological, and therapeutic data were evaluated. Univariate and multivariate logistic regression analyses were performed.

**Results:** Mean age was 43.3 ( $\pm$  13.8) years; 75.0% were male. Median sputum culture conversion time was 46 days. Delayed sputum culture conversion was found in 27.2% (n=37) of patients. In univariate analysis, unemployment (38.0% vs 20.9%,  $p=0.031$ ), HIV positivity (53.3% vs 24.0%,  $p=0.028$ ), bilateral radiological involvement (42.0% vs 19.0%,  $p=0.005$ ), cavitary disease (32.6% vs 15.9%,  $p=0.041$ ), and colony counts  $\geq$  100 (33.7% vs 8.7%,  $p=0.018$ ) were risk factors for persistent positive culture. In multivariate logistic regression analysis, only bilateral radiological involvement (odds ratio (OR) 3.7, 95% confidence interval (CI): 1.5–9.0) and higher colony counts (OR 5.8, 95% CI: 1.2–27.4) were independently associated with delayed sputum culture conversion.

**Conclusions:** Delayed sputum culture conversion was found in approximately one third of patients. Bilateral radiological involvement and higher colony counts were independent risk factors for delayed sputum culture conversion.

#### P2572

##### Clinical, epidemiological and evolving profile of miliary tuberculosis: Study of 48 cases

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Miliary tuberculosis is a rare but severe form of TB often due to hematogenous spread of *Mycobacterium tuberculosis*. It represents less than 2% of tuberculosis in our context. We conducted a retrospective study of 48 cases collected in our Respiratory Diseases department between 2003 and 2010. Female cases were predominant with 60%. The mean age was 35 years old. The history of tuberculosis and tuberculosis contagion were found in 10 cases each, the postpartum in 3 cases, trisomy-21 in 1 case, diabetes and HIV seropositivity in 3 cases each. The clinical setting was dominated by health impairment in all the cases and fever in 40 cases (83%). Chest X-ray spotted out miliary aspect in all the cases, cardiomegaly in 2 cases, pyopneumothorax in 5 cases, and excavated opacities in 4 cases. The intradermal tuberculin test performed for all the cases was positive in 20 cases. Bacterioscopies were positive in 15 cases. The spread assessment found out a cerebro-meningeal affection in 5 cases with cerebral tuberculomas in 1 case, pericarditis in 3 cases, mediastinal and peripheral lymph nodes in 6 cases; choroidal tubercle was found in 5 cases and a medullar affection in 2 cases. Antibacillary treatment according to the 2SRHZ/7RH regimen was started in emergency in 32 cases, 2RHZE/7RH in 3 cases and according to 2RHZE/4RH regimen in 5 cases. Evolution was good in 36 cases (75%), 9 patients were lost for follow up, and 3 deaths were reported. Throughout this work we emphasize the severity of miliary tuberculosis and the need for urgent and early therapeutic management.

#### P2573

##### Completion of treatment for latent tuberculosis infection

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**Background:** The effectiveness of latent tuberculosis infection (LTBI) treatment depends largely on adherence.

**Aim:** To identify factors associated with patients' completion of treatment for LTBI.

**Methods:** We reviewed the characteristics of all patients who were prescribed a six month course of treatment with isoniazid for LTBI at the Chest Clinic of a large tertiary hospital between 01/2000 and 04/2008. A supply of isoniazid was dispensed one month at a time by Chest Clinic nurses. Treatment completion was defined as pickup of  $\geq$  80% of prescribed doses.

**Results:** During the study period, 143 patients were started on this course of therapy. Their mean (SD) age was 25 (16) years and 43% were male. Seventeen patients were excluded from the analysis because their treatment was interrupted (n=4) or ceased (n=13) by their treating physician. Of the remaining 126 patients, 25 (20%) did not complete treatment. Treatment completion was not significantly related to patients' sex, age, tuberculosis (TB) incidence in their country of birth, TST conversion status, smoking status, baseline liver function tests, or indication for treatment (contact versus other indications). However, among those who were contacts of a patient with active TB (n=102) those who were not living in the same household as the index case were more likely to fail to complete treatment (relative risk 7.2, 95% CI 2.6 to 20.7).

**Conclusions:** In this cohort, with monthly supervision of drug collection, 1 in 5 patients who commenced treatment for LTBI did not complete their course of treatment. Non-household contacts of patients with active TB are at an increased risk of not completing treatment. This group may require additional strategies to encourage treatment completion.

#### P2574

##### Differences between age related clinical presentation of pulmonary tuberculosis (TB)

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**Aims:** This study aimed to compare clinical features, predisposing factors and imaginal findings of pulmonary TB in elderly and young adults and to determine any existing difference between the two groups.

**Methods:** A total of 179 patients diagnosed with TB were divided into two groups: younger (<65yrs) and older (>65yrs). Mean characteristics (gender, smoking, TB forms, lesion extension and type, symptoms, comorbidities, side effects) were analyzed. Statistical analysis was done using SPSS software (chi-square test and student's t-test)

**Results:** There were 102 young adults (mean age 38.97 $\pm$ 12.45yrs; 60 men, 42 women) and 77 elderly patients (mean age 73.58 $\pm$ 6.42yrs; 50 men, 27 women) with TB. The elderly patients were smokers (61% vs 45%  $P<0.05$ ), more likely to have dyspnoea (57.14% vs 28.4%  $P<0.001$ ) and night sweats (63.6% vs 24.5%  $P<0.001$ ). Young subjects present asymptomatic or anorexia associated forms. Elderly patients frequently showed extensive unilateral infiltration in chest X-rays (19.5% vs 3.9%  $P<0.001$ ); these lesions were often misdiagnosed as pneumonia (6.5% vs 1%  $P<0.042$ ). Predisposing factors were more prevalent in elderly subjects who had a significantly higher frequency of diabetes mellitus (14.3% vs 2%  $P<0.002$ ), ischemic heart disease (18.2% vs 2%  $P<0.001$ ), congestive heart failure (10.4% vs 1%  $P<0.04$ ), malignancy (15.5% vs 1%  $P<0.001$ ), arterial hypertension (32.5% vs 47%  $P<0.002$ ) and casexia (7.8% vs 1%  $P<0.02$ ).

**Conclusions:** In Romania, TB is more frequent in younger people, although older subjects represent a population at high risk to develop severe forms. Diagnosis in elderly patients can be challenging, since they may not display classic signs and symptoms.

#### P2575

##### Causes of delay in the diagnosis of pulmonary tuberculosis

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**Background:** Early diagnosis of tuberculosis and its treatment are essential in a control program, as it reduces the severity, mortality and transmission of the disease in the community.

**Aim:** To determine the time between symptom onset and demand of health services (patient delay) and between first consultation and start of treatment (health care delay). For each interval, determinants of possible delays were analyzed.

**Methods:** A cross-sectional study was performed in Porto (North of Portugal), based on data from the national tuberculosis surveillance system, including confirmed cases of pulmonary tuberculosis diagnosed during 2008/2009. We defined 3 weeks for patients' and 1 week for health cares' delays as cut off points to dichotomize the sample into either delay or non delay. Chi-square test were used to analyze associations ( $\alpha=0.05$ ).

**Results:** We analyzed 165 individuals and of those, 122 (76.5%) were male and the mean age 48 years old. Median patient delay was 4 weeks. Patient delay was more frequently associated (although not statistically significant -  $p>0.1$ ) with unemployment (68.4% vs 61.4%), alcoholism (76.5% vs 62.7%) and other co-morbidities (72.2% vs 64.9%). The median time of health care delay was 1 week. Negative sputum smear was significantly associated (69.7% vs 34.2% -  $p=0.001$ ) with this delay.

**Conclusion:** We could not identify target groups significantly associated with patient delay. Strategies should be directed to general population in order to increase awareness about the disease. Negative sputum smear was associated with health care delay which can be justified by the time needed to study these patients.

#### P2576

##### The effect of smoking on the treatment outcome in patients with pulmonary tuberculosis: A prospective cohort study

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Smoking and tuberculosis have great impact on health. Smoking is prevalent worldwide occurring in 20% of adults while tuberculosis is a universal problem. Studies have shown that although smoking has no etiological role in TB, higher prevalence of TB has been observed in smokers. However, only few studies have evaluated the impact of smoking on TB treatment.

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**General Objective:** To determine the effect of smoking on the treatment outcome among patients being treated for pulmonary tuberculosis.

**Specific Objectives:** To determine the prevalence of smoking among patients with PTB, incidence of treatment success and failure among patients being treated for PTB and to determine the association between smoking and treatment outcomes.

**Methodology:** A prospective cohort study done in Dr. Jose Rodriguez Memorial Hospital, Directly Observe Treatment Strategy (DOTS) Center included all patients diagnosed with pulmonary tuberculosis, ages 18 years and above under the DOTS program. Demographics, co morbidities and smoking history were obtained by standardized interview. Initially CXR and sputum AFB were done. Sputum examination was repeated on 2nd, 4th month and on completion of treatment.

**Result:** Of the 83 patients enrolled, 29 were non smoker while 54 had smoking history (24-previous smoker, 30- current smoker). Cavitory PTB was common among patients with smoking history. Only 3 patients had treatment failure, one was previous smoker while the other 2 were current smoker.

**Conclusion:** Patients under DOTS program have high success rate. Although the study did not reach statistical significance, there was a strong trend on the association of smoking with treatment failure.

#### P2577

##### **Pulmonary tuberculosis – Still a challenging diagnosis**

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**Background:** Pulmonary tuberculosis (TB) is a chronic disease, with slow evolution and slow recovery with specific treatment. Some of the cases have differential diagnosis doubt over a long period of time.

**Material and methods:** We present a series of 6 patients (5 females), mean age 43.1 years (range 27-70 years), with various respiratory symptoms and opacities on chest radiography, who needed multiple diagnosis procedures over a long period of time before the diagnosis of TB.

**Results:** Mean delay of diagnosis was 19.1 month (range 5-24 months). Symptoms consist of: cough (6), dyspnea (4), and low grade fever (2). Chest X-ray showed: pulmonary micronodular pattern (4), consolidation (1), and pseudotumor (1). CT-scan showed "tree in bud" pattern in patients with micronodules on chest radiography.

One patient monitored several times with CT-scan and bronchoalveolar lavage was diagnosed with TB after 2 years, when cavities appeared on CT-scan and sputum smear became positive for acid fast bacilli (AFB). Three cases needed lung biopsy for diagnosis. In one case sputum smear for AFB was negative initially and after 14 month. Only then, the culture for M. Tuberculosis became positive. One patient had lung tumor on CT-scan, severe discariotic cells on bronchial biopsy, and received 6 courses of chemotherapy before TB diagnosis. All patients received antituberculous treatment, with good clinical and radiological outcome.

**Conclusion:** Usually, the diagnosis of pulmonary TB is an easy task in a country with high incidence of tuberculosis. In some cases, pulmonary TB remains a challenging issue and invasive methods are needed for a correct diagnosis.

#### P2578

##### **Miliary tuberculosis: About 16 cases**

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**Introduction:** Miliary tuberculosis (MT) is a rare and severe form of tuberculosis (TB) due to hematogenous dissemination of tuberculosis bacillus (BK).

**Aim:** Describe radio-clinical and biological presentation of MT ant to identify prognostic factors in comparison with pulmonary TB.

**Method:** Retrospective comparative study including a group of MT and a group of pulmonary TB. The diagnostic criteria were radiological for definition of miliary and bacteriological or histological for TB.

**Results:** 16 cases of MT and 41 patients with pulmonary TB (control group) were included. Mean age was 48.3±22 years. Compared to pulmonary TB, we note that MT was more significantly associated with bad economic conditions, dyspnea, crackles, absence of night sweats and negativity of tuberculosis skin test. Presence of mediastinal lymphadenopathies, absence of excavation or other images, extra pulmonary localizations especially liver and lymph node and hyponatremia were also more significantly observed in MT. The analysis of the results had identified some mortality predictive factors such as the presence of night sweats, hepatic cytolysis, high sedimentation rate and the presence of excavations in the roentgenogram.

**Conclusion:** MT is a severe form of TB. The presence of night sweats, hepatic cytolysis, accelerated sedimentation rate and presence of excavation in the chest radiograph are predictive of poorer prognosis.

#### P2579

##### **Miliary tuberculosis: Diagnosis difficulties and prognosis factors**

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**Introduction:** Miliary tuberculosis (MT) is a form of tuberculosis which is characterized by wide hematogenous dissemination of Mycobacterium tuberculosis into the human body. The clinical presentation of MT is highly variable.

**Objective:** The aim of this study is to describe diagnosis difficulties and prognosis factors of MT in Tunisian patients.

**Methods:** A retrospective study was conducted in the female adult pulmonary department of the Tunis Chest Disease and Surgery Training Hospital between 2000 and 2010.

**Results:** Seventeen patients were found to have MT. The average age was 50 years [12-89]. Past history of Tb was noted in 1 case. Five patients had Tb contact history. Factors of immunodepression noted in 9 patients were: elderly (n=7), pregnancy (n=1) and corticosteroid therapy (n=1). Immunology of HIV was negative in all patients. Main symptoms were cough and wasting syndrome (n=15). On admission, 7 patients had an acute respiratory failure. Cachexy was noted in 8 cases. Chest X ray showed diffuse miliary shadow in all cases. Diagnosis was confirmed in 7 patients, by microscopic sputum tests (n=5), pleural biopsy (n=1) and lymph node biopsy (n=1). In the other cases (n=10), diagnosis was retained by a high index of clinical suspicion. Multifocal Tb was noted in 5 cases. The extrapulmonary sites were: central nervous system (n= 3), pleura (n=2), vertebral bodies (n=1), lymphatic nodes (n=1). Antituberculous treatment was started in all cases. The outcome was favourable in 15 patients. Two elderly were dead. Tb relapse occurred in 2 cases.

**Conclusion:** MT is a severe disease in which treatment must be early even without diagnosis confirmation. Advanced age seems to be one important prognosis factors.

#### P2580

##### **Miliary tuberculosis in immunocompetent and BCG vaccinated patients**

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Miliary (M) tuberculosis (TB) is a rare form of TB in BCG vaccinated patients and occurs more frequently in immunocompromised patients. To evaluate frequency and clinical features of MTB in immunocompetent patients, we analyzed all cases of MTB diagnosed in a pulmonary department between 2000 and 2010, in patients with negative HIV test. We study 5 cases of 35 mean aged patients leading to an incidence of 2.6% among all TB patients seen in the same period. All were male, smokers and BCG vaccinated. One patient had diabetes and one had had viral C hepatitis. All had fever and poor general condition. One patient presented with acute respiratory failure. Chest x ray revealed bilateral interstitial micronodules in all cases. Tuberculin skin reaction was positive in 3 cases. Three cases were smear positive. Medullary biopsy confirmed TB in 1 case. One case was retrospectively confirmed by good response to treatment. Extrapulmonary localization was: hepatic in 5 cases, splenic in 2 cases, lymph nodal in 1 case, cerebromeningeal, medullary, osteoarticular and renal in 1 case each. Treatment administered urgently was based on antituberculous drugs (HRZE) associated in 3 cases to corticosteroids. Outcome was favorable in all cases. One patient died 5 months after but due to another disease.

In conclusion, MTB in immunocompetent and vaccinated patients seems to be more easily confirmed with a better outcome compared to immunocompromised patients as reported in the literature, when anti TB treatment is established very early. Really, in patients with radiological M and fever TB should always evoked and treated urgently as such.

#### P2581

##### **Genitourinary tuberculosis and its association with infertility in women**

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**Introduction:** Infertility is a stressful event especially for women having both psychological and social impact.

Causes can be broadly classified under genetic, unknown etiology, environmental factors or of infectious origin.

**Aim:** Retrospective analysis for cause of unexplained infertility in women.

**Materials and methods:** Between 2008-2010, 200 female patients between age group 18 to 80 (mean age - 30.03) presenting with recurrent urinary tract infection not responding to antibiotics, irregular period and unexplained infertility were clinically evaluated.

Investigations included radiological and routine laboratory workup, monteux test,

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with screening for presence of Acid fast bacilli (AFB) done on early morning urine sample for three consecutive days. AFB culture was not done.

**Result:** Of the total 200 patients AFB was positive in (n= 120) 60% of female patients, of which (39%) were in productive age group of 18 to 25 years with history of infertility, apart from chronic urinary tract infection.

Risk factors in older age group seen was Diabetes and other constitutional disorders. Montoux positivity correlated with AFB positive patients.

Treatment with Anti TB treatment (ATT) under DOTS had a positive response with (n=15) 12.5% (age group 18-25) having reversal of symptoms and subsequent conception.

**Conclusion:** Thus early detection and treatment can have a positive impact on prognosis.

Education on healthy life style management for women can help in restoring their health.

#### P2582

##### Diagnosics of lung cancer in antituberculosis departments

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**Aim:** To study information of different examination methods for lung cancer diagnostics in patients of antituberculosis departments

**Methods:** We analyzed results of medical examinations (clinical, roentgen and bronchological) of 2516 patients in hospital departments of Scientific Practical Centre for Pulmonology and Phthysiology in 2006-2008

**Results:** Incidence rate of bronchological cancer was 1,7% (43 patients); average patient age was 60,3 years; males – 76,7%, females – 23,3%. 74,4% cases with lung changes were revealed during the patient visited to physishian and only 25,6% (11 patients) during the systematic R-examination. 18 persons had tuberculosis, the rest patients were examined for specific or nonspecific process. According to made examinations 33 patients had tumour lung lesion, 10 had combination of lung tuberculosis and cancer. Central cancer was suspected in 44,2% patients and peripheral cancer in 50% during the raunting R-examination. Computed tomography increased diagnostics of central lung cancer to 68,4%. In peripheral cancer data of computed tomography was informative in 7 of 9 patients. Bronchoscopy with lung and bronch bicepsy permitted to determine lung cancer in 88,9-100%. We had the most difficulties in lung cancer diagnostics because its combination with active tuberculosis and bacilli shedding.

**Conclusion:** Early diagnostics of lung cancer in antituberculosis departments is possible with availability of timely bronchoscopy and oncologic alert in physicians.

#### P2583

##### Intensive care of patients with tuberculosis

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**Introduction:** Multi and extensively drug resistance (MDR, XDR), HIV association, these nowadays TB phenomena related to long and aggressive chemotherapy, frequent disease progressions and complications, elective and emergency surgery lead to increase in intensive care (IC) requirement for TB patients.

**Aim:** The aim of the study was to describe the characteristics of patients with TB requiring IC, to evaluate the risk factors for intensive care unit (ICU) admission, and to identify the factors that predict ICU mortality.

**Patients and methods:** Patients with TB admitted to the National Research and Practical Centre for Pulmonology and TB (Centre) during one year (2010) entered the study. Demographic, clinical, radiological and bacteriological data at hospital admission and during ICU stay were recorded, and risk factors for ICU admission and death were calculated.

**Results:** A total of 1001 TB patients were admitted to the Centre during the study period. 280 of them had MDR-TB, 78 – XDR-TB and 20 – HIV-TB co-infection. 144 TB patients were admitted to ICU, in 43 of them admission was related to surgery. 31 patients died giving 21.5% of ICU mortality rate. Factors significantly related to ICU admission were: previous TB treatment, history of imprisonment, MDR and XDR of discharging Mycobacterium tuberculosis, HIV co-infection, and excessive alcohol use. Risk factors for ICU death were: low body mass index, pulmonary co-morbidity, disseminated disease with CNS involvement, previous ICU admission.

**Conclusions:** These data indicate a relatively high requirement in IC as well as high ICU mortality of TB patients. Our results can contribute to a better understanding of characteristics associated with IC and mortality for TB patients.

#### P2584

##### Characteristics of patients with pulmonary tuberculosis in intensive care unit

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**Aim:** To describe the characteristics of patients with tuberculosis (Tb) requiring intensive care treatment and to identify the factors affecting mortality.

**Method:** We conducted a retrospective study between 2004 and 2010 years. The 40 records of 53 Tb patients treated in intensive care unit were studied. Demographic, clinical, radiological and bacteriological data, reason for admission to the intensive care unit, APACHE II score, mechanical ventilation, duration of ICU and hospital length of stay, complication of intensive care, treatment and outcome were recorded. Predictors of mortality were assessed. Chi-square test was used for statistical analysis.

**Result:** A total of 40 TB patients (7 females, median age 54.5 yrs) admitted to ICU were included. 25 of them had COPD (30%) and diabetes mellitus (17.5%). The most common symptoms are dyspnea (80%) and cough (62.5%), respectively. All of the patients were pulmonary tuberculosis and 82.5% 's were new cases. Radiologically, 26 (65%) had widespread pulmonary infiltrates, 4 (7.5%) patients had miliary tuberculosis. 35 (87.5%) of the cases diagnosed with culture positivity. The most common reason for hospitalization in intensive care unit was acute respiratory failure (32 cases), and the median APACHE II score was 22 (17-26). 92.5% of the patients received mechanical ventilation and 30 (75%) of the patients died. There was no significant difference between the studied parameters in patients who have died, and alive (p>0.05).

**Conclusion:** In this study we found a high mortality rate in TB patients requiring intensive care unit.

#### P2585

##### Effect of pulmonary arterial hypertension on outcome of pulmonary tuberculosis

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**Objectives:** Due a growing range of therapeutic options, early diagnosis of pulmonary arterial hypertension may change survival of patients. This study performed to evaluate effect of concomitant pulmonary arterial hypertension on outcome of new cases of pulmonary tuberculosis.

**Methods:** A cross sectional study of 777 new cases of pulmonary tuberculosis were recruited in National Research Institute of Tuberculosis and Lung Disease, Tehran, Iran. Pulmonary arterial hypertension was defined as systolic pulmonary arterial pressure >30 mmHg estimated by resting transthoracic echocardiography. We assessed the relationship between pulmonary arterial hypertension on admission and survival during six months treatment of tuberculosis.

**Results:** Of 777 new cases of pulmonary tuberculosis, 74 (9.5%) had systolic pulmonary arterial pressure >30 mmHg. Ten of them (13.5%) died during treatment period in comparison to 5% among cases without pulmonary arterial hypertension (P=0.007). Logistic regression analysis confirmed this association.

**Conclusion:** A significant association was found between mortality and presence of pulmonary arterial hypertension among new cases of pulmonary tuberculosis. Therapeutic intervention may change outcome of these patients.

#### P2586

##### Pulmonary tuberculosis with polyneuro-radiculopathy: Not forget Guillain Barré syndrome!

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**Background:** Guillain-Barré syndrome (GBS) is an acute inflammatory polyneuro-radiculopathy and known to follow a variety of viral, mycoplasma, bacterial and chlamydial infections. The association with tuberculosis has been exceptionally reported. We report an unusual case of GBS associated with pulmonary tuberculosis.

**Case report:** An 19-year-old man was admitted to hospital with cough during one month and hemoptysis. Chest X-ray showed multiple ring shadows in both upper zones suggestive of pulmonary tuberculosis. Sputum-smears and culture were positives for mycobacterium tuberculosis. Anti-TB drugs were initiated and they were well tolerated. Twenty one days later, the patient suffered acute and progressive legs weakness that ascended to the arms and face with sensory loss and flaccid of 4 limbs. Cranial computer tomography and magnetic resonance imaging were normal. Antibodies to nuclear antigens were negative. Cerebrospinal fluid (CSF) revealed protein 210 mg/dl, sugar 75 mg/dl without cells. Neurophysiological study was consistent with sensitive- motor axonal and radicular neuropathy with denervation. These clinical, radiological and laboratory investigations were conform to description of GBS. Intravenous immunoglobulin therapy (0.4 g/kg over 5 days) and physiotherapy were given, with slow neurological recovery. At review 6 months later, patient had completely recovered.

**Conclusion:** The pathogenesis of GBS in infective disease is by no means clear. Authors suggested that GBS can be resulted from direct invasion of the nerve roots by tubercle bacilli.

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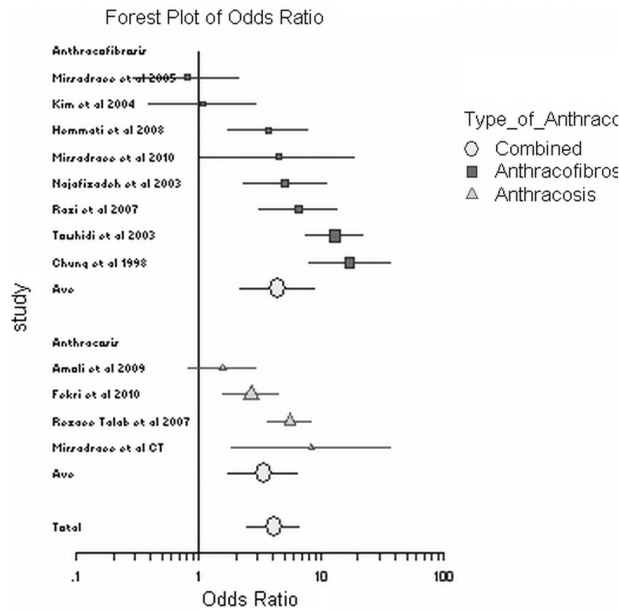
**Frequency of tuberculosis on bronchial anthracosis, systematic review and meta-analysis**

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**Introduction:** Anthracosis is the black pigment discoloration of bronchi which may cause bronchial obstruction. The objective of this study was to collect the data about the association of tuberculosis and anthracosis of lung by systematic review and meta-analysis.

**Materials and methods:** All studies that had enough information about frequency of tuberculosis in anthracosis (anthracofibrosis) patients and non-anthracotic control group were enrolled in meta-analysis. Tuberculosis should be confirmed by microbiological (smear or culture) or histopathological methods.

**Results:** Twelve studies (8 studies on anthracofibrosis and 4 studies on anthracosis as a general term) comprise of 6280 patients were entered in this meta-analysis. Frequency of tuberculosis in all anthracosis subjects was 22.5% (32.6% for anthracofibrosis and 17.25% for anthracosis) which were significantly higher than control group. Determination of risk showed that cumulated odds ratio of tuberculosis in all studies of anthracosis was 3.16 (95% CI= 2.49-6.85) which revealed significantly higher risk than control group Subgroups analysis showed cumulated odds ratio of tuberculosis in subgroups of anthracofibrosis (3.28; 95% CI=2.16-9.12) were significantly higher than anthracosis as a general term (2.85; 95% CI=1.73-6.61).



**Conclusion:** Association of tuberculosis with all type of anthracosis of lung was confirmed and further investigation is not recommended.

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**Vitamin-D supplementation in patients with new smear positive pulmonary tuberculosis (PTB) with reference to sputum conversion**

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**Back ground:** PTB is major problem in developing countries like india. Role of vit-D as immunomodulator which also suppresses growth of mycobacterial bacilli in macrophages, helps in treatment of PTB and early sputum conversion.

**Methods:** Study includes 60 patients of sputum positive PTB above age of 15 yrs with sex ratio 1:0.7, from may 2009 to October 2009 to avoid seasonal variation. All patients were divided in to 2 groups randomly, one group (28 patients) received only ATT and other group (32 patients) received ATT with oral cholecalciferol (vit d) 60,000 IU daily for 5 days. serum vit D were measured pretreatment and at every 2 weeks for 8 weeks. other measurements like sputum smear for AFB, Hb etc also measured. data were analysed.

**Results:** There is significant increase in Hb at 8 weeks (P-0.03), Decrease in mean ESR at 8th week (P-0.0001) and increase in weight gain after 8 weeks (P-0.0312) in group who received vit D along with ATT.

There was early sputum conversion in patient who received vit D and ATT but

Table 1

	Healthy	Pulmonary tuberculosis
Vit D level (M)	36.179 ng/ml	16.937 ng/ml
(F)	23.115 ng/ml	13.857 ng/ml
Mean	29.479 ng/ml	16.116 ng/ml

this difference was not significant stastically so further study with large sample is required.

Table 2

Sputum +ve	0 week	2 week	4 week	6 week	8 week
ATT with Vit D	32	4	2	0	0
ATT only	28	6	4	2	0

**Conclusion:** Supplementation with vit D in patients with smear positive PTB was of benefit in terms of haemoglobin, weight gain, ESR reduction and general well being. An early sputum conversion was observed in patients who received vit D supplementation.

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**Steroids related tuberculosis: Does a subgroup require a more cautious approach?**

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**Background:** Increased use of steroids for treatment of autoimmune and other respiratory disorders poses a danger of reactivation of tuberculosis. Patients receiving immunosuppression (non-anti-TNF) are generally offered a baseline CXR only. This potential susceptibility was investigated further.

**Results:** Our TB service treats 250 patients/year. Over 24 months, 4 patients requiring steroid therapy for primary lung pathology developed TB. 24 patients with no lung pathology were matched.

TB/Steroids

	ILD	Non-ILD	Matched patients
Mean (age)	50	38,65	45
Sex	Female (4)	M (1), F (1)	F (8), M (11)
Disorders	Sarcoidosis (3), Interstitial pneumonitis (1)	Lymphoma, Lung cancer	Auto-immune
Steroids (mean dose, duration in weeks)	30mg, 12 weeks	30mg, 4 weeks	15mg
Organ	Lung (4)	Lung (1), Spinal (1)	None

Only 2 cases of TB have been detected in patients given steroids for a non-pulmonary cause.

**Discussion:** A previous meta-analysis had concluded TB occurred more frequently in patients receiving steroids but wasn't statistically significant. [J Intern Med 1994;236:619]. Specifically a prospective study in steroids for lung disease had commented on an incidence of 4.9%. [J Ass Phys Ind 2000;48:881].

In our centre, reactivation was limited to patients with underlying chronic lung pathology, of ethnic origin not born in UK.

**Conclusion:** The incidence of TB among patients on steroids for lung pathology, born in areas of high incidence is unacceptably high and it seems prudent to investigate and treat them for latent tuberculosis before embarking on steroid therapy. This is particularly relevant for respiratory departments who deal with a high proportion of ethnic population. Further case controlled projective evidence is required to define this relationship.