

TUESDAY, SEPTEMBER 27TH 2011

434. Challenges in tuberculosis control

P4360

Latent tuberculosis in patients with rheumatoid arthritis. Evaluating cellular response and new diagnostic strategies

Daniela Tannus-Silva¹, Bruna Silva², Pedro Paulo Torres³, Pedro Jose Junior³, Ana Paula Junqueira-Kipnis², Marcelo Rabahi¹. ¹Departamento de Clínica Médica-Hospital das Clínicas, Universidade Federal de Goiás, Goiania, Brazil; ²Instituto de Patologia Tropical e Saúde Pública, Universidade Federal de Goiás, Goiania, Brazil; ³Departamento de Imagem, Universidade Federal de Goiás, Goiania, Brazil

Introduction: Diagnosing latent tuberculosis (TBIL) in patients with rheumatoid arthritis (RA) has become more important with the introduction of the use of anti-TNF-alpha agents and the appearance of active tuberculosis in these patients. The tuberculin skin test (TST), has limited value when used in patient with AR. New tests based in the production and release of IFN-gamma have been studied but their role has not been well established for this specific group of patients.

Objectives: Comparing the diagnosis of TBIL in a group of patients with RA by using tuberculin skin test, T.SPOT-TB and by means of tomography findings compatible with TBIL.

Methods: A clinical-epidemiological evaluation, use of TST, T.SPOT-TB and high-resolution computed tomography (TCAR) in a group of patients with AR in University Hospital of Goiás, Brazil.

Results: The response to the TST was smaller in patients with AR (13.5%), relative to the response expected from the general population. The T.SPOT-TB identified a higher number of patients with TBIL, relative to the TST (36.8%). TCAR presented changes which were compatible with TBIL in 52.9% of the patients included in the study, and among the eight of the eleven patients with TST and T.SPOT-TB negative.

Conclusions: In isolation, TST is an insufficient test to diagnose TBIL. A higher number of positive results were obtained with T.SPOT TB, relative to TST, but it was negative in a large percentage of patients with tomography findings consistent with TBIL. The TCAR test is easily performed in most of the large centers and should be incorporated into the diagnostic strategy for TBIL in patients with RA.

P4361

P4362

Home and work place evaluation in contact tracing

Raquel Duarte^{1,2,3}, Maria Neto⁴, Aurora Carvalho^{1,2}, Henrique Barros³. ¹Pneumologia, Centro Hospitalar de Vila Nova de Gaia/Espinho, Vila Nova de Gaia, Portugal; ²Pneumologia, Centro Diagnóstico Pneumológico de Vila Nova de Gaia, Vila Nova de Gaia, Portugal; ³Higiene e Epidemiologia, Faculdade de Medicina da Universidade do Porto, Porto, Portugal; ⁴Saúde Pública, Administração Regional de Saúde do Norte, Porto, Portugal

In an urban city, a decision was taken in 2004 to modify tuberculosis (TB) contacts screening strategy from targeting only close contacts identified by interview with the index case (the national policy) to a screening strategy involving home and work visit.

The present study compares TB contact-tracing during the periods 2001 to 2003 and 2004 to 2006 trying to capture how the new contact tracing strategy addressed the three main questions: (i) Does this strategy increase TB screening compliance? (ii) Does it identify more at-risk contacts? (iii) Does it result in more TB cases being prevented?

Home and work visit allowed to identify more at risk contacts (8.4/index case) than the interview (2.5/index case); to improve compliance (87.3% of the identified contacts were screened, compared to 67.6%). More cases of active TB and LTBI cases were detected (1.4/index case compared with 0.75/index case) and prevented more TB cases in the future.

The newly implemented contact-screening program with home and work place evaluation of active TB patients, improved compliance to screening procedures, identified more at-risk contacts and should allow us to prevent more TB cases in the future.

P4363

Tuberculosis in prisons in Republic of Macedonia from 2005-2010

Maja Zakoska¹, Stefan Talevski¹. ¹Epidemiology Department, PHI Institute for Lung Diseases and Tuberculosis, Skopje, Macedonia, The Former Yugoslav Republic of; ²Clinical Department, PHI Institute for Lung Diseases and Tuberculosis, Skopje, Macedonia, The Former Yugoslav Republic of

Introduction: Prison's population (yearly approximately 2600 prisoners) is group with higher risk of tuberculosis (TB) due to fullness of prisons, bad living conditions and inadequate medical care. Total population's notification rate decreases continuously but the rate of TB cases in prisons is still high (384/2005, 0/2006, 115/2007, 230/2008, 307/2009 and 384/2010). Aim of this survey is to prove the situation with TB in prisons in Macedonia.

Material: Data for this survey are taken from the Central TB Registry. The forms of TB, previous treatment, bacteriological confirmation and treatment outcome between 36 prisoners (period 2005-2010) have been analysed.

Results: In the period 2005-2010, 36 cases of TB were registered, 91, 6% male and 8, 4% female. The pulmonary TB was identified at 83, 3%, extra pulmonary TB at 16, 7% cases. From all cases, 83, 3% were new and 16, 7% previously treated. Bacteriological confirmation of pulmonary TB with direct microscopy identified at 43,3% and bacteriological confirmation of culture at 63,3% cases. The drug sensitivity test demonstrated multi drug resistance in 2,7% cases. Treatment outcomes from 2005-2009 were following: successful treated 80, 9%, dead 3, 8%, default treatment 11, 5% and 3, 8% lost from evidence. Drug addiction is finding in 41, 6% prisoners with TB.

Conclusion: Rate of TB in prisons in Macedonia is higher than in total population. Among TB cases in prisons percentage of bacteriological confirmation is low. Appearance of multi drug resistant form of tuberculosis is bad prognostic sign.

P4364

Two major problems in TB patients today: MDR and the abandoned therapy

Gabriela Barbulescu, Laurentia Badulescu. *Pneumology, "Sf. Stefan" Hospital, Bucharest, Romania*

In the WHO strategy, "stop TB" is the ultimate goal in the fight against this extended infectious disease. However, despite this ambitious purpose and the tools developed in this matter, some impediments may occur.

Aims: In this paper, the authors proposed to emphasize the latest and striking observations on difficulties encountered in TB treatment, in a pneumology department.

Methods: We observed the TB cases admitted in our service in 2010 compared with 2009 and noted the chronics, relapse cases. We noted why these patients couldn't reach to a proper end of their treatment and be cured. Equally, we were interested in number of MDR cases admitted in both years, comparative.

Results: All TB patients evaluated in 2010 were 456. From these, 255 were chronics, developing at least a third treatment (by failed or abandoned treatment). From these ones, 12 patients were with secondary MDR (5 of them with additional resistance to SM or EMB). Besides, we had 2 patients with XDR. In 2009 we had 468 TB patients, from which 214 were chronics, 165 abandoning their schedule and coming to hospital in 2010. In 2009 we noted just 5 patients with MDR. It is worth noting the lack of secondary aminoglycosides like Kanamicine and Amikacine and the impossibility of admitting all these patients in the unique service of MDR in town.

Conclusions: We are worried about the increase of number of cases with treatment abandon and the MDR cases. There is an important number of patients who cannot be compelled to follow the treatment when they leave the hospital (because of different reasons: social, tolerance, first treatment failed). Isolation of MDR cases from other TB patients in the same hospital seems difficult.

P4365

Profile of TB deaths in Romania during 2007-2009

Nicoleta Cioran, Elmira Ibraim, Horia Cocci. *National TB Program, Marius Nasta Institute of Pulmonology, Bucharest, Romania*

Introduction: Even TB is a curable disease from several decades, it's estimated that it is still killing over 1.7 million people early worldwide. The TB mortality rate decreased in Romania since 2003, in parallel with the decrease of notification

WITHDRAWN

TUESDAY, SEPTEMBER 27TH 2011

rate, but the proportion of deaths from all reported TB cases is keeping more than 6.5%.

Aims and objectives: To study the profile of TB deaths in Romania during 2007-2009, on the demographics data of the deceased persons, their associated diseases and depending on the bacteriological confirmation of pulmonary TB case.

Methods: Descriptive retrospective study of demographic and clinical characteristics of deaths among TB cases notified in Romania in 2007-2009. Data and information have been extracted from electronic National TB Register.

Results: A total of 4920 TB deaths have been reported in the analyzed 3 years: 1657 in 2007, 1728 in 2008 and 1535 in 2009. Of them 80.8% were men and 58.9% were living in rural area. The highest frequency of deaths occurred in 50-54 years in each analyzed year. The ratio of pulmonary site was 93.4%, with bacteriological confirmation rate by microscopy 71.6% and by culture 63.5%. The share of deaths caused by TB decreased from 82.2% in 2007 to 80.8% in 2008 and 75.4% in 2009. MDR-TB cases represented 8.5%. The most common associated diseases were alcoholism, liver diseases, diabetes and renal diseases. HIV co-infection has been reported in 104 cases (2.1%).

Conclusions: In the analyzed period of time the highest number of deaths has been recorded in 2008. The highest proportions of TB deceases were observed in men, from 50-54 age group, living in rural area, most commonly alcoholics, with advanced pulmonary forms of disease.

P4366

Results of retrospective study of TB contact investigations in Iasi County, Romania

Adriana Sorete Arbore¹, Violeta Cococariu¹, Rodica Sorete Arbore². ¹ Outpatient Service, Clinic of Pulmonary Diseases, Iasi, Romania; ² Epidemiology Laboratory, "Sf. Spiridon" Emergency Clinical Hospital, Iasi, Romania

Romania, EU country with high TB incidence, with programmatic TB control, implemented DOTS since 1998.

Aim: To assess the role of contact tracing in detection and prevention of appearance of TB new cases in an area with high TB case notification rate.

Method: Retrospective study of the records from 1998, 1999 for 1341 TB definite cases. Follow up of the house hold contacts included TST, chest X ray, INH preventive therapy.

Results: 836 contacts, 0-14 years, were identified from 467 "source" TB cases. At index case detection, 287 (43, 7%) contacts were TST positive, 224 (26, 7%) had chest X-ray. 51,7% received INH preventive therapy 3-12 months. 16,4% had no records about TST, chest X ray or preventive therapy. At the initial checking of the contacts, 7 active TB cases were detected; other 36 active TB cases were registered in the next 10 years. 62,7% (27) TB cases in contacts were registered in the first 3 years. 1,7% of the contacts developed TB in the first year, 1,45% in the next 2 years. 7 contacts with no initial records developed active TB later.

Conclusions: 5,1% of the TB contacts developed TB disease in the 10 years follow up period of time. Effective contact investigation and prevention of TB spreading in house hold contacts should consider:

- Lack of algorithm for contact tracing (no clear moments for contact follow up after the first control) in the NTP,
- The recommended tools for investigation of contacts were not entirely used,
- Different approaches for preventive therapy regarding number of months, doses, monitoring of treatment,
- Lack of knowledge in the group of patients, their families and GPs' network regarding the importance of preventive therapy and also about periodic control.

P4367

Tuberculosis in prison

Valeri Andreev¹, Antoaneta Karcheva², Kamelia Petrova³, Emilia Lazarova¹. ¹ Pulmonary Clinic, University Hospital, Pleven, Bulgaria; ² Mycobacteriological Laboratory, University Hospital, Pleven, Bulgaria; ³ Medical Center, Prison of Pleven, Pleven, Bulgaria

Introduction: Prison tuberculosis is a major problem because society "behind the walls" is overcrowded and isolation of patients is difficult and time-consuming. The program for improvement of the control on tuberculosis in Bulgarian prisons was started in order to solve these conditions.

Aims and objectives: Our aim is to present the ability of the program to provide better care for patients and contact people and better working conditions for medical personnel on both sides of the walls.

Methods: We observed a one year period from the beginning of the program in the Pleven prison. Measures like regular screening questionnaires, bacteriology, chest radiology and consultations with a supervising pulmonologist were provided regularly. Patients with pulmonary tuberculosis were isolated and sent to the prison hospital. Contact people were tested with a tuberculin test and were given isoniazid.

Results: This prison is inhabited by 600 prisoners and only 2 of them were diagnosed as sufferers of active tuberculosis. Other 2 continued therapy in prison after active hospital treatment. Prevalence of prison tuberculosis is about 900 out of every 100 000 prisoners. 421 questionnaires were filled, 110 prisoners gave sputum for bacteriology and 52 tuberculin tests were done. A room was built for induction of sputum and another for patient isolation.

Conclusion: The above measures guarantee the ability of the program to provide good medical service to prisoners, however most of them contracted tuberculosis outside the walls before imprisonment.

P4368

How did the tuberculosis patients reach to a tuberculosis dispensary and how long did it take?

Dilek Karadogan¹, Betül Abdullu², Göksel Kiter¹. ¹ Chest Department, Pmukkale University Medical Faculty, Denizli, Turkey; ² Tuberculosis Dispensary, Denizli Tuberculosis Dispensary, Denizli, Turkey

The aim of this study is to evaluate the patients diagnosed as tuberculosis and registered to a Tuberculosis dispensary in year 2010 according to the health care units which they applied beforehand and the time period since first symptom of tuberculosis has occurred.

For this descriptive study, the questionnaires which consist of questions about enrolled tuberculosis patients' characteristics, symptoms, duration between the first symptom and diagnosis, and health care units they applied before coming to tuberculosis dispensary have been filled with face to face interviews.

Total 127 questionnaires were completed, the majority of patients were male (59.1%). Mean age was 51±20 years. The rate of lung tuberculosis was 59.1% and the rest were extrapulmonary tuberculosis. City center was declared as residency place in 54.3% of patients. By the time of tuberculosis diagnosis, 5.5% of patients have no health insurance. The most common symptoms were cough (55%), weakness (52.8%) and night sweat (44.9%). At least one symptom has started more than one month before the diagnosis in 47.2% of patients, while in 19.7% less than one month. First application rates were found as 7.9%, 59% and 29.1% to primary, secondary and tertiary care units, respectively. The rate to be sent to another health care unit after first application was 66.1%. Tuberculosis was diagnosed mostly in university hospital (35.0%), the rate for tuberculosis dispensary was 23.6%.

A strategy targeted to improve the role and efficacy of primary care units in referral of the patients with highly suggestive symptoms to the tuberculosis dispensaries should have the priority to avoid the time lag in diagnosis.

P4369

The pathology of a thorax at the men getting to the penal institutions

Kseniya I. Aksenova. Tuberculosis, Moscow State Medical Dentistry University, Moscow, Russian Federation

The goal of current research was to study a pathology of a thorax at the men getting to the penal institutions. The study has been carrying out during four years in one investigatory isolation ward in Moscow. Fluorographic examinations of all prisoners conducted on the first by three days when men have got at this place. Fluorographic films made in 29298 convicts aged 19-60 were analyzed. Abnormal fluorograms were revealed in 7.4% prisoners; the changes were tuberculosis-associated in 78% of cases. 40.4% persons of them had posttuberculous changes: calcifications in the lungs and thoracic lymph nodes, fibrosis, solid foci and 59.6% persons of them had signs of active pulmonary tuberculosis. Among a pathology of organ of the thorax which has been not bound to a tuberculosis acute pneumonia, chronic obstructive pulmonary diseases (COPD), a lung cancer prevailed. Acute pneumonias were 71%, COPD – 16.7%, lung cancer – 4.3%.

P4370

Forecasting the risk of medicinal complications from the chemical therapy in patients with multi-resistant pulmonary tuberculosis

Fatima Tashpulatova. Branch of Therapy of a Pulmonary Tuberculosis, National Centre of Phthisiology and Pulmonology, Tashkent, Uzbekistan

Objective: Development of forecasting method for medicinal complications (MC) in patients with multi-resistant pulmonary tuberculosis (MPT).

Research methods and materials: 116 patients with MPT which were divided into two groups were examined: the 1st group – 88 patients with MC from chemical preparations and the 2nd group – 78 patients without MC.

Results: For each risk factor was determined risk rate (RR). Important in forecasting were such factors as intolerance to chemical preparations in the past and existence of pernicious habits (RR-1,4), length of sickness from 4 to 5 years (RR-2,25), existence of concomitant diseases (RR – 2,5), existence of fibro-cavernous pulmonary tuberculosis (RR – 1,7), biochemical changes in the liver (RR -2,9) and kidney (RR -3,7), changes in electrolyte metabolism (RR -2,2), leukocytosis (RR – 3,6), existence of lymphopenia (RR – 2,3), increase in ESR (erythrocyte sedimentation rate) to more than 40 mm/h (RR – 2,5), in the age of 30 - 40 years (RR – 1,77). According to decimal logarithm of their production maximal and minimal risk range of MC comprising the value from -9,9 up to +6,4 were determined.

Conclusion: The developed forecasting method of MC in patients with MPT allows from the first days of sickness forecast the risk level of MC from the chemical preparations.

P4371

XDR and MDR-TB genetic markers of M. tuberculosis strains circulating in Kyrgyz Republic

Jainagul Isakova, Nurmira Sovhozova, Barchynay Kabylova, Almaz Aldashev. Molecular and Cell Biology, Institute of Molecular Biology and Medicine, Bishkek, Kyrgyzstan

In Kyrgyz Republic multidrug-resistant tuberculosis (MDR-TB) is a real public health problem. For treatment of MDR-TB the second-line drug fluoroquinolone

TUESDAY, SEPTEMBER 27TH 2011

(FQ) is used. The use of this drug has led to the emergence of fluoroquinolone-resistant *M. tuberculosis* (M.tb).

Aim: The aim of this study was to assess the fluoroquinolone resistance in MDR-TB cases and to reveal the main mutations of *gyrA* gene associated with FQ resistance in Kyrgyz Republic.

Materials and methods: DNA samples of *M. tb* were collected from 70 adult patients with primary MDR-TB. From all samples the 33 sputum samples were taken from patients from the penitentiary system and 37 sputum samples were taken from patients from the civilian sector. The resistance to rifampicin, isoniazid and fluoroquinolone were analyzed by biochip assay.

Results: 70 selected samples of *M.tb* strains carried mutations leading to MDR and including 5 cases with FQ resistance. The most prevalent mutations of *gyrA* gene was Asp94Gly, the second was Ala90Val. One case had the combination of both mutations Asp94Gly and Ala90Val of *gyrA* gene. These mutations of *gyrA* gene were coexisting in the same samples with Ser531Leu mutation of *rpoB*, Ser315Thr of *katG* and *inhA* T₁₅ mutation of *inhA* gene.

Conclusion: In XDR-TB cases mutations of *gyrA* gene leading to FQ resistance of *M.tuberculosis* are mostly associated with presence of Ser531Leu mutation of *rpoB*, Ser315Thr mutation of *katG* gene and *inhA* T₁₅ mutation of *inhA* gene.

P4372

To evaluate primary default among smear positive pulmonary tuberculosis patients at three chest clinics of Ojha Institute of Chest Diseases, Karachi, Pakistan

Nisar Rao¹, Tehzeeb Anwer¹, Iftikhar Arain¹, Ismat Ara². ¹Department of Pulmonology, Ojha Institute of Chest Diseases, Karachi, Sindh, Pakistan; ²Health Department, Provincial TB Control Program, Hyderabad, Sindh, Pakistan

Objective: To evaluate the magnitude & reasons of primary default among smear positive TB cases at 3 chest clinics of Ojha Institute of Chest Diseases.

Method: Prospective study, conducted from 1st January 2010 to 30th June 2010. The TB suspects were asked for sputum Acid Fast Bacilli smear examination. Then sputum positive cases were checked for registration for treatment. Those who did not report for treatment initiation were labeled as "primary defaulters (PD)". They were then contacted on phone/ home visit with the request to get registered for treatment. They were also asked about reasons for not reporting.

Results: Out of 7467 TB suspects 5167 (69.19%) submitted sputum. 1121 (21.69%) were smear positive TB. 947 (84.5%) registered for treatment while 173 (15.5%) did not (PD). 91/173 (53%) were successfully traced and registered for treatment. 15 patients (8.6%) were taking treatment from physicians outside chest clinic, 7 (4%) were admitted without registration, 7 (4%) were suspected Drug-Resistant TB. 24 (13.87%) were untraceable PD. One patient was reported to have died at home due to unknown cause. Thirty seven out of 173 patients (21.38%) were unaware of their disease.

The major reason for primary default was distance to clinic i.e. 83 (47.97%). 12 (6.93%) defaulted due to loss of wages, 8 defaulted due to the timing of the clinic, 9 were not interested in taking treatment.

Conclusion: The primary default is high in the chest clinics of Ojha Institute. Proper counseling/default tracing will help to reduce the primary default rate.

P4373

Clinical and genotypic pattern of multidrug resistant tuberculosis isolated from extrapulmonary tuberculosis cases in tertiary care hospitals in northern India

Anand Kumar Maurya¹, Surya Kant¹, Vijaya Lakshmi Nag², Ram Awadh Singh Kushwaha¹, Tapan N. Dhole², Anand Kumar Maurya. ¹Department of Pulmonary Medicine, Chhatrapati Shahaji Maharaj Medical University, Lucknow, Uttar Pradesh, India; ²Department of Microbiology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

Background: Extra-pulmonary tuberculosis (EPTB) is an important clinical problem in India as well as worldwide. The diagnosis of EPTB in its different clinical presentations remains a true challenge. The emergence and widespread dissemination of multidrug resistant (MDR) strains of *Mycobacterium tuberculosis* pose a serious threat to EPTB.

Objectives: To compare clinical pattern of MDRTB patients and genotypic pattern of these *Mycobacterium tuberculosis* isolates from EPTB cases.

Methods: A total of 789 specimens from patients of EPTB cases with varied presentation were studied. A total of 123 *M. tuberculosis* isolates recovered during the period Jan 2008-Dec2010 were tested for drug susceptibility against SHRE using the proportion method on Radiometric BACTEC. MDR isolates were sequenced in *rpoB*, *katG* and *inhA* for mutation analysis.

Results: 165 (20.7%) of 797 patients clinically suspected to have EPTB were BACTEC culture positive for mycobacteria. Out of 123/165 (74.5%) were *M. tuberculosis* cases, 94 (77%) were newly diagnosed and 29 (23%) retreated cases. Based on the phenotypic drug susceptibility testing results, 15 (12.1%) was MDR-TB. On basis of genotypic characterization of 15 MDR isolates, Rifampicin resistance related mutations in the *rpoB* gene were detected in 13/15 (86.7%). Isoniazid resistance-related mutations in the *katG* and *inhA* genes were detected in 12/15 (80%) of the MDR isolates.

Conclusions: Our study provides incidence of MDR-TB has been increasing in the clinical isolates of EPTB in Northern India. Genotypic pattern of MDR could be offer necessary information for improved TB control in the future.

P4374

Study of cross referrals between ICTC & RNTCP centres in G SVM Medical College Kanpur

Puneet Kr. Gupta¹, Sudhir Chaudhri², P.K. Singh³. ¹Tuberculosis and Respiratory Diseases, G SVM Medical College Kanpur, Kanpur, Uttar Pradesh, India; ²Tuberculosis and Respiratory Diseases, G SVM Medical College Kanpur, Kanpur, Uttar Pradesh, India; ³Pathology, G SVM Medical College Kanpur, Kanpur, Uttar Pradesh, India

Background: India has over 1.982 million incident TB cases per year and world's 3rd highest HIV burden. The estimated PLWHA is 0.34% (2.38 million) of Indian population. TB-HIV coordination activities are being implemented since 2001.

Objectives: To study overall efficiency of cross referral between DMC cum DOTS centre and ICTC.

Methods: All patients registered at our DMC for DOTS between 1st July 2009 to 31st July 2010 (13 months) were referred to Integrated Counseling and Testing Centre. During the same period ICTC was asked to refer all TB suspects to our DMC. Before this period no effective cross referral strategy was in vogue in our medical college DMC and ICTC.

Results: During the study period, our DMC cum DOTS centre registered 1287 TB cases (664 were bacillary). They were advised to get tested at ICTC where only 1063 reached. 54 of them were HIV positive. During same period 8683 clients were registered at ICTC Centre. Out of these 424 (123 HIV positive, 301 HIV negative) were TB suspects and referred to our DMC cum DOTS centre. Out of these only 287 (121 HIV positive, 166 HIV negative) reached at our DMC cum DOTS Centre. Among 121 HIV positive there were 81 had tuberculosis of which 31 were bacillary. Among 166 HIV-negative patients 49 had tuberculosis out of which 15 were smear positive. The detailed analysis will be presented in conference.

Conclusions: RNTCP and ICTC Cross referral was found highly useful strategy.

P4375

Factors responsible for relapse under revised national tuberculosis control programme (RNTCP)

Richpal Meena¹, Nirmal Jain², Mukesh Sharma², Rohan Aurangabadwalla², Nitin Jain². ¹Department of Chest & TB, ESIC Model Hospital, Jaipur, Rajasthan, India; ²Department of Chest & TB, Hospital for Chest & TB, SMS Medical College, Jaipur, Rajasthan, India

Background: Relapse is considered to be an important measure of the efficacy of tuberculosis treatment and there is a wide variation in relapse after successful treatment, ranging from 0% to 14%. If relapse is substantial, current end of treatment targets may be too low to bring about the predicted declines in incidence.

Objective: To identify factors responsible for Cat-I and II relapse among successfully treated tuberculosis (TB) patients under DOTS programme.

Design: This was a prospective observational study conducted at Department of chest disease and tuberculosis, Jaipur. 280 patients of DOTS Cat-I and II relapse were taken as cases along with 150 control patients with successful outcome and no relapse within 2 yr follow up. Both group were analysed regarding possible factors (Sex, Initial weight, BMI, Sputum smear grade, Radiological status, Cavitary disease, Smoking, Alcoholism, HIV, DM) responsible for relapse.

Results: Smokers ($p < .001$, OR=6.966, 95%CI=4.26-11.37), alcoholics ($p < .001$, OR=6.267, 95%CI 3.04-12.9), low weight ($p < .02$, OR=4.80), low BMI ($p < .001$, OR=7.308, 95%CI=4.56-11.7), cavitary status ($p < .001$, OR=4.49), advanced radiological status and diabetes were found to be significantly associated with relapse of disease. No association was found between smear grade, age, sex and relapse. Counselling for smoking cessation, de-addiction measures, strict control of diabetes and strengthening of regimen for cavitary and advanced disease patients may be some additional measure to decrease the relapse rate. There is strong need to study these measures with a long term follow up of relapse in patients treated under DOTS.

P4376

Private physicians participation on public-private mix-DOTS at St. Paul's Hospital Iloilo

Sheilla Mae Checa-Jalandra, Malbar Ferrer. *Internal Medicine, St. Paul Hospital Iloilo, Iloilo City, Iloilo, Philippines Center for Respiratory Care, St Paul Hospital Iloilo, Iloilo, Philippines*

SPH-PPMD-Unit was the first private PPMD unit in the region, and there was a perception among the private practitioners that they may lose patients after referring to the PPMD-DOTS system. This study aims to determine the effect of PPMD DOTS center in private practice. This is a prospective descriptive study done at St Paul hospital Iloilo, 88 DOTS referring physicians given questionnaire, 54% responded.

Results: All respondents participated in DOTS referring physician training seminar conducted in 2003-2008. 69% were certified DOTS referring physician. 62.5% of the respondents claimed that there was no change in the number of their patients since they started referring patients to DOTS clinics. 35.4% subjects answered that all of their patients were aware of the DOTS and 45.8% answered that all of their patients agreed to be treated at DOTS and 45.8% answered that none of their patients disagree to be treated at DOTS. 31.2% of the respondents answered that 75% of referred patients came back for follow up. 68.8% received regular updates

TUESDAY, SEPTEMBER 27TH 2011

from DOTs clinics. 54.2% of the respondents answered that many of their patients came back and expressed satisfaction. 58.3% of the respondents answered that few of their patients complained of DOTs treatment. The most common negative comment was delayed supply of medications. The most common positive comment was medications are for free. 81.2% respondents did not receive PHILHEALTH incentives for every patient they referred to DOTs. This study recommends to conduct retraining or seminars on private practitioners.

P4377**Who are at risk for tuberculosis recurrence?**

Anda Nodieva^{1,2}, Girts Skenders³, Inta Jansone⁴, Matiss Bauskenieks⁴, Ilva Pole³, Lonija Broka³, Ilze Morozova¹, Viesturs Baumanis⁴, Vaira Leimane¹.

¹*Clinic of Tuberculosis and Lung Diseases, Infectology Centre of Latvia, Riga, Latvia;* ²*Infectology and Dermatology, Riga Stradins University, Riga, Latvia;* ³*Mycobacteriology, Laboratory of Infectology Centre of Latvia, Riga, Latvia;* ⁴*Biomedical Research and Study Centre, University of Latvia, Riga, Latvia*

Multi-drug resistance (MDR) is much higher among recurrent tuberculosis cases than among new cases in Latvia and globally.

Aim: To find out the risk factors for TB reinfection (RI) and reactivation (RA).

Design and methods: Retrospective case control study. Non-probability convenience sampling of retreatment cases (RC) according to WHO definitions of 54 available *M.tuberculosis* (MT) cultures for current and previous TB episodes from years 1999 to 2007. Drug sensitivity test and genotyping in both episodes, data extraction. Cases (RI) - 43 TB RC with genotypically different MT in both episodes, suggesting reinfection with different strain. Controls (RA) 11 TB RC with genotypically identical MT in both episodes, suggesting reactivation.

Results: 31 RI cases (72%) in previous TB episode was treated in hospitals till the year 2002 (OR 4.52, p<0.05), but most part of RA controls 7 (62%) from 2003 to 2007. 30 from RI cases (70%) were drug-susceptible (OR 6.15 p<0.05) with more earlier (80 days) sputum smear conversion to negative in comparison with controls (141 days), but prolonged hospital treatment (229 and 154 days accordingly). RI cases in 77% becomes reinfected with MDR MT strains, predominantly (70%) Beijing and LAM9 genotype. Controls in 45% were MDR, with acquisition of drug resistance and prevalence of Beijing and LAM9 genotype in 73%.

Conclusion: Non-MDR TB patients were at risk for reinfection with MDR MT strains during prolonged hospitalization in conditions of poor infection control. To decrease risk of TB transmission in hospitals; strong infection control measures and ambulatory treatment should be enforced. As a risk factor for TB relapse drug resistant MT in the previous episode is suspected.

P4378**Management and follow up of non-tuberculosis mycobacteria pulmonary infection in 55 infected cases in Iran**

Parvaneh Baghaei Shiva, Payam Tabarsi, Majid Marjani, Mohammad Reza Masjedi. *Clinical Tuberculosis and Epidemiology Research Center, NRITLD, Tehran, Islamic Republic of Iran*

Background: Non-Tuberculosis Mycobacteria (NTM) are increasing worldwide. This study defines type and outcome of treatment in a referral center in Tehran

Methods: Study was done in national referral center in Tehran during 2002-2009. All patients with documented NTM pulmonary diseases (based on ATS criteria) were included in study. Patient's data and treatment outcomes were extracted from medical records.

Results: 55 patients with NTM pulmonary disease were diagnosed. Female were predominant (52.7%). Mean age was 54.43±15.61. History of smoking was present in 17 (30.9%) and 9 (16.4%) were opium addicted. Only one patient was HIV positive.

The most common type was *Mycobacterium simiae* in 26 (47.3%) followed by *M.Chelonae* in 8 (14.5%), *M.Kansasii* in 8 (14.5%), *M. Abscessus* in 6 (10.9%), *M.Avium* in 5 (9.1%) and *M.Farcinogen* and *M.Genavense* each in one case.

Cavitary lung lesion was seen in 72.8% and bronchiectasis in 80% of patients.

The most predominant symptoms were cough (89.1%), sputum (85, 5%) and dyspnea (65.5%). Fever was present in 22 (40%) of patients.

Cure occurred in 38 (69.1%) of patients. Sixteen patients failed treatment and only one patient died.

Conclusion: In comparison with other studies *M.Simiae* was more prevalent and HIV seropositivity was rare.

P4379**Increasing frequency of pulmonary nontuberculous mycobacteria (pNTM), and accumulation of the patients, observed in a city hospital in Tokyo**

Kozo Morimoto¹, Takashi Yoshiyama¹, Hideo Ogata¹, Atsuyuki Kurashima¹, Shoji Kudoh¹, Kazuro Iwai². ¹*Respiratory Medicine, Fukujuji Hospital, Japan-Antituberculosis Association, Kiyose-shi, Tokyo, Japan;* ²*Consultant, Fukujuji Hospital, Japan-Antituberculosis Association, Kiyose-shi, Tokyo, Japan*

Introduction: There are many papers reporting that the prevalence of pNTM is increasing especially in developed countries including Japan. However, there were few articles that discuss yearly accumulation of the patients. We planned to elucidate the frequency of NTM isolation and also the accumulation of pNTM patients in a center hospital of mycobacteriosis in Tokyo area.

Methods: Initially, we reviewed all kinds of pulmonary mycobacteria isolation from January 2004 to December 2009, based upon the laboratory database with clinical chart. When multiple isolates were detected, species identification was performed for one species per patient per year. Next, we investigated, on the 2009 patients, the initial year of MAC diagnosis during the past 20 years. Thirdly, we followed the course of 2004 MAC patients up to 2009, speculating the yearly accumulation of the disease.

Results: From laboratory data, the yearly number of all NTM isolation increased from 353 in 2004 to 488 in 2009 (mean annual increase, 5.9%), and of MAC from 291 to 418 (increase, 6.8%). Proportion of MAC to all NTM showed a constant value of 81.4%, indicating that increase was due to an increase of MAC. From clinical data, many of MAC patients in 2009 had an initial diagnosis of MAC during the period from 1978 to 2008. Follow up analysis on the cases found in 2004 and having yearly bacteriological examination, showed over half of the positive MAC patients in 2004, were still culture positive in 2009. MAC-related death was observed on 8 cases among the total 99 cases in 2004.

Conclusion: An accumulation of MAC patients in recent years was likely to occur in Tokyo, Japan.