278. Epidemiology of multidrug-resistant and extensively drug-resistant tuberculosis

P2610

Multi-drug resistant and extensively-drug resistant tuberculosis in the region of Seixal: A 6 years revision

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Introduction: Portugal is the european country with larger incidence of tuberculosis (TB). Multi-drug resistant tuberculosis (MDR-TB) corresponds to 1,9% of the new cases in Portugal among 2002-2006, of wich 22% were extensively resistant to the anti-TB therapy. MDR-TB is resistant either to, at least, isoniazid (H) and rifampicin (R) and extensively-drug resistant (XDR-TB) if there is resistance to HR, a Fluoroquinolones and at least 1 second line injectable therapy.
Objective and methods: Retrospective study with identification, characterization and evaluation of patients with TB, followed in the Pneumology Diagnosis Center (CDP) of Seixal CDP from 2002 to 2008 with diagnosis of MDR-TB and XDR-TB.
Results: There were notified 439 cases of TB in the area of the CDP of Seixal from January 2002 to December 2008. There were identified 9 cases of MDR-TB and no patient with XDR-TB. Concerning the 9 cases of MDR-TB, 4 showed resistance to all first anti-TB therapy. Sixty seven percent were male. The average of ages was of 38±17 years (21-79 years). Seven patients were diagnosed in hospital admittance. Forty four percent of the patients presented prior history of TB treatment. Five patients had alcoholic and/or drug habits, being 2 positive fo Human Immunodeficiency Virus (HIV) serology. Six patients presented lung TB. Six patients had good therapy adherence.
Conclusion: The number of new cases of MDR-TB in the studied population is smaller than in the general national population. The diagnosis of TB and its adequate treatment are crucial to avoid the emergence of MDR an XDR-TB, as leads to restrictions on the therapeutic options.

P2611

The results of drug resistance survey of MDR-strains on second line drugs obtains in national reference laboratory – "M.Nasta" Institute, Bucharest

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Objectives: To evaluate resistance of MDR strains to the second line drugs – Kanamycin and Ofloxacine and XDR-TB among patients MDR-TB.

Materials and methods: In 1 octombrie 2009-31 ianuarie 2010 was included in this study 419 patients 53 new and 366 previously treated cases which had positive cultures with MDR strains. The testing of this MDR strains was performed by indirect method of proportion to second line drugs for critical proportion 1%.
Results: 1.For new cases results showed the confirmation of MDR strains 8,83%; resistant to INH+RMP+KM 2,63%; resistant to INH+RMP+OFX 0,24.% and XDR strains 0,95%.
2. For previously treated cases results showed the confirmation of MDR strains 49,64%; resistant to INH+RMP+KM 22,20%; resistant to INH+RMP+OFX 7,16% and XDR strains 8,35%.
Conclusions: 1.The high percentage of MDR strains of previously treated cases-49,64% is due to large number of patients provide from our Excellence Center of MDR TB.
2.The percentage of XDR strains from MDR strains is 9,31%.

P2612
Epidemiological and microbiological characteristics of reported cases with multidrug-resistant tuberculosis in the Republic of Bulgaria for the period 2007-2009
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A retrospective study of all patients with multidrug-resistant tuberculosis (MDR-TB) registered and reported in Bulgaria during the period 2007-2009 was performed.
Aim: To make epidemiological and microbiological characteristics of all cases with culture confirmed MDR-TB recorded and reported in the country during the above-mentioned period.
Materials and methods: Case-based data for all TB patients recorded and reported by the regional TB health facilities for the period 2007-2009, data sent by the microbiological laboratories for TB diagnosis, and TB registries of the NRL-TB at the NCIPD were examined.
Results: According to the case-based data, a total of 149 MDR-TB patients (age range 18-87) were recorded and reported during the period 2007-2009, representing 5.3% of all tested with DST. Out of all MDR-TB cases, 107 (72%) were male. Fifty-six patients (38%) were new, and 93 cases (62%) were previously treated. Out of all registered MDR-TB patients, 88.6% were confirmed by the NRL-TB.
Conclusion: The case-based registries provide exact clinical, microbiological and epidemiological information, avoiding case duplication during the reporting period. The frequency of MDR-TB among previously treated TB cases is higher, mainly among the relapses and the defaulters after previous treatment. Active investigation among the contacts of MDR-TB cases and among targeted groups of TB patients (defaulters, failure of treatment, chronic cases), and confirmation of the resistance by the NRL-TB is needed, in order to provide timely and appropriate treatment of all confirmed MDR-TB cases.

P2613
Multy-drug resistance tuberculosis (MDR-TB) in Federation of Bosnia and Herzegovina during ten years
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Multidrug-resistant tuberculosis (MDR-TB) defined as TB caused by strains of Mycobacterium tuberculosis that are resistant to at least isoniazid and rifampicin. The aim of this paper was to describe the resistance patterns of MDR-TB in FB&H.
Material and methods: Retrospective analysis of the reported cases with MDR-TB in FB&H during ten years (2000-2009) notified through drug susceptibility testing (DST) in 5 laboratories according to the recommendation of the WHO and IUATLD in Europe.
Results: Total cases with DST results: 1034 (never treated 913; previously treated 121) in 2000;1184 (1054;129) in 2001; 1036 (936;100) in 2002; 1042 (951;91) in 2003; 1125 (1048; 77) in 2004; 769 (692;77) in 2005; 908 (827;81) in 2006; 951 (847;104) in 2007; 518 (471;47) in 2008; 581 (529;52) in 2009.
MDR-TB among never-treated cases: 1 (0.11%) in 2000; 2 (0.19%) in 2001; 4 (0.42%) in 2002; 1 (0.10%) in 2003; 4 (0.38%) in 2004; 4 (0.57%) in 2005; 2 (0.24%) in 2006; 7 (0.82%) in 2007; 3 (0.63%) in 2008; 0 (0.0%) in 2009.
MDR-TB among previously-treated cases: 2 (1.65%) in 2000; 7 (5.42%) in 2001; 9 (9.0%) in 2002; 1 (1.09%) in 2003; 6 (7.79%) in 2004; 5 (6.49%) in 2005; 3 (3.70%) in 2006; 10 (9.61%) in 2007; 9 (19.14%) in 2008; 1 (1.92%) in 2009.
Conclusion: Data from FB&H show relatively low prevalences of MDR-TB during ten years.The prevalence of MDR-TB remains low at 0.57% - 0.82% among newly detected cases and 9.61% - 19.14% among previously detected cases.Recent data also indicate a further desrease in MDR-TB. This decrease may likely be the result of well implemented DOTS.Establishing reference laboratory facilities with adequate capacity to supervise DST and surveillance activities in the country is a critical step in MDR-TB control and care.

P2614
First national survey results of mycobacterium tuberculosis drug resistance in Kosovo, 2007-2008
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Objective: To estimate the prevalence of DR to the first–line anti TB drug among new and previously treated cases of pulmonary tuberculosis.
Method: A national survey during 2007-2008 has been carried out, using "100% sampling" method, according to WHO and IUTALD standards. Smear-positive pulmonary TB patients aged ≥15 years were eligible. Drug susceptibility testing using simple proportion method was performed against four first-line drugs, i.e., isoniazid, rifampicin, ethambutol and streptomycin.
Results: During one year enrolling period, 207 initial isolates of M Tuberculosis were analyzed. Out of them 172 (83%) were from new cases and 35 (17%) from re-treatment cases. Any resistance among new cases was 20.9% and 45.7% among re-treatment cases. Resistance to INH was 0.6% among new cases and 5.8% among re-treatment cases. MDR-TB was 0% among new cases and 11.5% among re-treatment cases. All MDR-TB cases were distributed among re-treatment cases.
Conclusion: Low rates of MDR-TB in Kosovo are due to a well performing national TB control program.

P2615
Drug resistant tuberculosis among Greek and immigrant patients in a pulmonary department in northern Greece
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Introduction: The proportion of TB cases among immigrants is gradually increasing in Western European countries, posing a threat to disease elimination in the coming decades.
Aim: To evaluate differences in prevalence of drug resistant tuberculosis among native and immigrant patients treated in a respiratory department of a regional general hospital in Northern Greece.
Subjects - methods: Clinical records data of patients with tuberculosis (new detected cases-43, relapses-21) treated in our department during 2007-2010 were retrospectively studied.
Results: 64 patients were recorded, 50 males and 14 females, 38 natives and 26 immigrants recently moved from Former Soviet Union countries. 13 natives (34.2%) and 17 immigrants (65.2%) patients presented with extensive disease. 13 (34.2%) natives and 10 (38.4%) immigrants received therapy for a second time due to relapse, interrupted treatment or treatment failure. Resistance was confirmed in 11 natives (28.9%) and 12 immigrants (46.2%) (p: 0.253), monoresistance in 11, polyresistance in 8 and MDR TB in 4 patients.

Resistance patterms

Resistance	Greeks	Immigrants	Sum
INH	1		1
PZ	3	2	5
SM	2	3	5
INH + PZ + ETH + SM + PAS		1	1
RF + PZ + ETH		1	1
RF + PZ + PAS	1		1
PZ + SM	1	1	2
PZ + ETH	1		1
PZ + SM + ETH		2	2
INH + RF	1		1
INH + RF + EMB + SM		1	1
INH + RF + PZ + EMB + ETH	1		1
INH + RF + PZ + SM + ETH		1	1

Conclusions: TB cases among immigrants tend to increase, contributing significantly to overall higher incidence rates. Immigrants also tend to present with more severe disease and emerge more frequent relapses and higher prevalence of resistant and MDR-TB.

P2616
Drug resistance pattern of mycobacterium tuberculosis complex at the main reference tuberculosis centre in Greece, 2000-2010
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Background/Aim: Drug-resistant tuberculosis (TB) is a major issue for Public Health. This study was conducted to assess the prevalence of drug resistance to M. Tuberculosis at the main reference tuberculosis centre in Athens, Greece (Anti-Tuberculosis Department, "Sotiria" Chest Diseases Hospital).
Methods: We retrospectively reviewed 343 isolates of drug resistant M. Tuberculosis, from 2000 to 2010, and collected data about demographic characteristics and drug susceptibility. Antimicrobial drug susceptibility was tested using the method of proportion with Löwenstein–Jensen and BACTEC MGIT System.
Results: A total of 1747 patients (new culture-positive TB cases from 2000 to 2010) were analyzed. Individual drug resistance was as follows: 242 isolates (13,9%) were resistant to isoniazid, 167 (9,6%) to rifampicin, 130 (7,4%) to ethambutol, and 227 (13%) to streptomycin. The overall resistance to any drug was 19,6%, while 145 isolates (8,3%) were resistant at least to isoniazid and rifampicin (multidrug resistant, MDR) and 39 isolates (2,2%) were resistant at least to isoniazid, rifampicin, any fluoroquinolone and one of three injectable second-line drugs (extensively drug resistant, XDR). We should notice that none of the patients was HIV-positive.
Conclusion: A significant increasing trend in resistance rates to the four first-line anti-TB drugs, and any other drug, was observed during the 11-year period. MDR-TB and XDR-TB have emerged as a major public health threat in Greece, considering the immigration trend and the country's key-point. The development of "direct observed therapies" (DOTs) in Greece, according to WHO guidelines, is of great importance.

P2617
Multi drug resistant tuberculosis in a tertiary university hospital
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Objective: The interest of this study was to evaluate the rate of recovery and the mean time to detection (TTD) of mycobacterium tuberculosis in clinical specimens with two culture systems, the BACTEC MGIT 960 and Löwenstein-Jensen (LJ) medium. and determinate the type and rate of anti tuberculosis drug resistance.
Methods: We studied 325 specimens decontaminated with NaLC-NaOH then inoculated onto Bactec MGIT960, and L.J. medium. We compared, the rate of recovery, mean time to detection, contamination rates of MGIT and L.J. – (Lowenstein-Jensen)medium. We did identification to all positive specimen then we did susceptibility test to all Mycobactruim Tuberculosis samples.
Results: A total of 209 Mycobacterial isolates (161Mycobactruim tuberculosis, and 48 NTB (non tuberculos bacilli) were detected. The recovery rates were 64.3% with MGIT and 55.7% with L.J. the rates of contamination for each of the systems were 6.5% with MGIT and 4% with L.J.
The TTDs for mycobacteria were 13.1 days with BACTEC MGIT 960 and 27.3 days with LJ.
Resistance to STR was found in 7 (4.5%) patients, INH in13 (8.6%), ETH in 3 (1.8%), RIF in 5 (3.1%) and resistance to PYR in 6 (3.7%)
Conclusion: The Bactec MGIT system is a sensitive, rapid, mycobacterial culturing system. However, the high contamination rate is a concern that should be carefully evaluated in the clinical setting. Drug resistance was associated with a history of previous anti-TB treatment (p = 0.017). Monoresistance to a single first-line agent was found in 22 (13.6%), while polyresistance was noted in4 (2.5)%. Multidrug-resistant M. tuberculosis was noted in 0.6% of all MTB isolates. X-MDR TB was not detected in our specimens.

P2618
Multidrug resistant pulmonary TB: Characteristics of drug resistance profiles of MBT in Ukraine
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About 9% of newly diagnosed pulmonary (P) TB is accompanied by MDR, and among patients with chronic forms that level is 30-70%. Knowledge of drug resistance (DR) is important for treatment and to forecasting the outcome.
Aim: The aim was to determine the current DR profiles and their prevalence among PTB pts in Ukraine.
Materials and methods: Medical records, results of microbiological examination of pts for a year.
Results: 224 cases of verified MDR-PTB were established, 142 men and 82 women, average age – 32,54±3,9 years. The initial or secondary resistance were determined. It was in 59 (21,33%) and in 165 (73,66%) pts respectively. To analyze the DR profiles all patients were divided into 2 groups: the 1st included 59 (26,33%) pts with DR only to first-line drugs, and the 2nd - 165 (73,67%) pts with additional DR to second-line drugs (s). Profiles formed on the base of first-line drugs. We have identified 7 profiles in 1st group: HR, HRS, HRE, HRZ, HRSE, HRSZ, HRSZE; and 7 in 2nd: HR+s, HRS+s, HRE+s, HRZ+s, HRSE+s, HRSZ+s, HRSZE+s. The most common in 1st was HRS profile – 28 (46,67) pts. Less common are HRSE and HRSZ (21,67% and 10,0% respectively). The predominance of HRS and HRSZ profiles was found in the 2-d group – 71 (31,69%) pts and 41 (25,0%), respectively. Totally HRS profile was in 99 (44,19%) pts. The smallest spread has HRE and HRZ (1,79% and 3,57% respectively).
Conclusion: The majority of cases (73,66%) has secondary MDR and simultaneously DR to first-line drugs and to s. Most common is HRS profile – as with maintaining sensitivity to s, and in presence of additional resistance to the different number s. The smallest spreads have HRE and HRZ-profile.

P2619
Secondary drug resistance during an intravenous intermittent chemotherapy in newly cases TB
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The purpose: To study frequency secondary drug resistance M. tuberculosis (SDR) during an intravenous (IV) intermittent chemotherapy in newly cases TB.
Methods: 76 pulmonary TB patients without previous chemotherapy enrolled in study. IV intermittent chemotherapy (3 times a week) appointed to 38 patients (IIC-group): isoniazid (H) and rifampicin (R) – 10 mg/kg IV, streptomycin (S) – 16 mg/kg intramuscularly (IM), pyrazinamide (Z) – 25 mg/kg per os. 38 patients received daily same doses of H, R, Z per os and S IM (a group of comparison). Both groups were identical. We determined SDR initially and every 2 month of patient treatment during 5-14 months.
Results: Initially there were 16 patients IIC-group and 11 in a comparison group with fully sensitive TB. In IIC-group there were 6 patients with primary MDR and 16 with primary drug resistance (not the combination of H&R). In comparison group there were 4 patients with primary MDR, and 23 with primary drug resistance. During chemotherapy 36 patients IIC-group and 34 from comparison group became sputum negative after 3,17±0,4 and 2,7±0,5 months accordingly (p=0,17, Mann-Whitney U-test). During the IV intermittent chemotherapy SDR appeared at 5 patients, secondary MDR – at 1 from 5. In comparison group SDR appeared at 4 patients, secondary MDR at 3 from 4 (RR = 1,54, 95%CI: 1,34–1,75). The mean term of formation SDR appeared in 3±0,3 and 2±0 months accordingly (p = 0,03, Mann-Whitney U-test).
Conclusion: The occurrence risk of secondary MDR is lowered, SDR term is slower in IIC-group than in group of daily treatment, in about 3 months from the start of chemotherapy. This term coincides with sputum negative results at patients of both groups.

P2620
Drug resistance among new TB cases and relapses
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Purpose of the study: To study prevalence and range of drug resistance (DR) of TB mycobacteria (MbT) among 41,574 new TB cases and 5,890 relapses in 14 RF territories over the period of 2007-2009.
Materials and methods: Analysis of MbT DR was performed based on the official and applied statistical data quarterly received at the Center of Monitoring, CTRI RAMS.
Results: Over the period of 2007-2009, the proportion of new cases with DR MbT increased from 30.9% to 40.1%, and with MDR TB - from 10.8% to 13.2%. In the group of relapses the incidence of DR (48.4% and 55.4%) and MDR (26.7% and 33.0%) was much higher than among new TB patients. One third of new TB cases had resistance to isoniazid and streptomycin and 15.0-20.0%% of new TB cases were resistant to rifampicin and ethambutol. Among TB relapses DR TB, MDR TB and any other resistance to isoniazid, streptomycin, rifampicin and ethambutol was reported 2-3 times more often than among new TB cases. Over the period of 2007-2009, the rage of drug resistance was increasing in all TB patients; cases of XDR TB were reported regularly.
Conclusion: Over the period of 2007-2009, an annual increase in proportion and number of DR cases was reported. Therefore, it is necessary to perform monitoring of quality of the laboratory tests, data collection and follow up of TB patients' groups. Knowledge of DR MbT range of patients allows performance of the adequate chemotherapy, its adjustment, evaluation of the epidemiological situation on TB and timely managerial solutions. Increase in prevalence of DR MbT is the result of the previous failed courses of chemotherapy.

P2621
Drug resistance in pulmonary TB patients: Analysis of dynamics
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MBT drug resistance (DR) frequently causes lack of treatment efficiency in TB patients. The use of standard WHO treatment protocols has not brought about a MBT DR/MDR decrease: on the contrary, the share of patients with primary MDR has increased 15-27 times over the 2005-2008 period. In 2008, in some regions of Russia patients with primary MDR MBT constituted 20-25% of the total number of TB patients.
In 2010, we conducted an analysis of MBT DR in 312 pulmonary TB patients

treated in the specialized City TB City Hospital in Saratov, Russia. Primary DR was 60.7% (2008 – 54.6%). Secondary DR was 88.1% (85.6% in 2008), including 84.9% in previously treated and 93.1% in the chronic group. Monoresistance was observed very infrequently.
Primary MDR was 23.5% (2008 - 16.8%); MDR among secondary DR was 64.0% (2008 - 55.0%). In 2 group MDR level was 58.5%, in 3 group - 72.5%.
In newly diagnosed group, DR was mainly noted to the Line 1 drugs: Isoniasid (H) - 45.0%; Streptomycin (S) - 31.3%; Rifampicin (R) 26.0%; Mycobutin (Mb) and Ethambutol (E) - 23.5%. DR to Line 2 drugs was in the 2.0% - 9.8% range.
The previously-treated group displayed an even graver tendency: DR to S was 71.3% (over twice that of primary DR); H - 65.7% (20% higher); R - 60.1% (twice as much); E - 39.9% (10 times higher); Ofl - 8.4% (over two times higher); Cap - 10.5% (twice as much); K - 44.0% (4.5 times higher); A - 22.4% (11 times higher).
Conclusion: The situation clearly calls for a revision of the treatment protocols, as the use of four Line 1 drugs (with $\frac{1}{4}$ of the patients being DR to at least two of them) inevitably renders the treatment ineffective.

P2622
To determine the acquired resistance of mycobacterium tuberculosis by culture to 1st line anti-tuberculous drugs in non responding smear positive patients who have taken category 1
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Background: The strongest risk factor for drug resistance is previous history of tuberculous treatment. Currently the national tuberculosis control program recommends drug susceptibility testing in failures of retreatment cases. This study is being conducted to see the drug resistance pattern in failures and defaulters of initial treatment before starting a retreatment regime
Material and methods: Study Design: Descriptive case series
Setting: This study was conducted in the OPD of Thoracic Medicine JPMC Karachi.
Sampling technique: Non probability purposive sampling.
Results: Among 60 selected patients of category 1 sputum smear positive, 14 (23.3%) were defaulter, 38 (63.3%) relapse and 8 (13.3%) patients were of treatment failure.
Culture sensitivity has shown 58 (96.7%) positive patients and only two (3.3%) were negative.
Multidrug resistance was found in 15 (25%) patients. MDR cases were 6 (42.9%) among 14 defaulters, 4 (10.5%) among 36 relapsed and 5 (62.5%) among 8 treatment failure patients.
Rifampicin resistance was found in 20 (34.5%) patients. Isoniazid was resistant in 19 (32.8%) patients. Ethambutol was resistant in 21 (36.2%) patients. Pyrazinamide was resistant in 17 (29.3%) patients. Streptomycin was resistant in 10 (17.2%) patients. None of antitubercolous drug was resistant among two culture negative patients. Multidrug resistance (MDR) was observed in 15 (25.9%) patients.
Conclusion: We conclude that levels of MDR-TB is very high in patients not responding to CAT1 anti tuberculous drugs in our community.

P2623
Impact of drug resistance over sputum conversion in tubercular patients receiving re-treatment regimen
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Background: Previous tubercular treatment is known to be associated with high drug resistance.
Objectives: To assess the impact of drug resistance over sputum conversion in tubercular patients receiving supervised re-treatment regimen.
Methods: A total of 101 smear positive pulmonary tuberculosis patients [relapse (65), failure (23), and defaulter (13); all with age $\geq$ 15 years] registered for re-treatment at our Institute were included. Drug susceptibility testing (DST) was done using Lowenstein-Jensen media. All patients were given thrice weekly supervised re-treatment regimen. Sputum microscopy was done in all patients at initiation and also at the end of 1st, 2nd, and 3rd months.
Results: 41.50% of patients in relapse group, 85.71% in failure group, and 70% in default group had drug resistance. Sputum conversion during initial three months in relapse group was 29.23%, 60%, 64.61%, respectively; same for failure group was 0%, 0%, 4.36%, respectively; and that for default group was 23%, 38.46%%, 46.15%, respectively. Table-1 shows impact of individual drug resistance on sputum conversion.

Table 1. Sputum conversion across first 3 months

Drug	Resistant/sensitive	1st month	2nd month	3rd month
INH	S (n=38)	42.10%	86.84%	94.73%
INH	R (n=46)	2.17%	2.17%	2.17%
Rifampicin	S (n=53)	32%	64.15%	69.81%
Rifampicin	R (n=31)	nil	nil	nil
Ethambutol	S (n=68)	25%	50%	52.94%
Ethambutol	R (n=16)	nil	nil	6.25%
Streptomycin	S (n=59)	28.81%	57.62%	62.71%
Streptomycin	R (n=25)	nil	nil	nil

S = sensitive to drug; R = Resistant to drug.

Conclusions: Drug resistance was observed to be the most important determinant for poor sputum conversion across all subcategories in present study.

P2624
Patterns of drug resistance at initiation of re-treatment across relapse, default and failure subcategories in previously treated tubercular patients
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Background: Previous tubercular treatment is known to be a strong determinant for development of drug resistance.
Objectives: To assess for drug resistance at the start of re-treatment in tubercular patients attending our Institute.
Methods: 111 smear positive pulmonary tuberculosis patients [relapse (72), failure (26), and defaulter (13); age $\geq$ 15 years; 86 male] were included. Drug susceptibility testing (DST) was done using Lowenstein-Jensen media (LJDST) in all patients and Middlebrook 7H12 media (RMDST) in 37 patients.
Results: 41.50% of patients in relapse group, 85.71% in failure group, and 70% in default group had drug resistance over LJDST. Using RMDST, 63.63% of patients in relapse group, 100% in failure group, and 83.33% in default group had drug resistances. Individual drug resistances are shown in Table-1.

Table 1. Individual drug resistances

Drug & DST method	Relapse group	Failure group	Defaulter group
INH, LJDST	26.15%	86.96%	61.53%
INH, RMDST	30.76%	88.23%	71.42%
Rifampicin, LJDST	13.84%	78.26%	30.76%
Rifampicin, RMDST	30.76%	82.35%	57.14%
Ethambutol, LJDST	7.69%	34.78%	23.07%
Ethambutol, RMDST	15.38%	29.41%	28.57%
Streptomycin, LJDST	15.38%	47.82%	23.07%
Streptomycin, RMDST	23.07%	58.82%	28.57%
Pyrazinamide, RMDST	7.69%	23.52%	0%

Previous drug intake and subcategory were significant factors for drug resistance. It was also associated with smoking, poor education and economic factors but not with age or sex.
Conclusions: We observed significant drug resistance; highest for failure subcategory followed by default and relapse ones. Such high drug resistance requires DST at start of tubercular re-treatment in all patients.

P2625
Clinical characteristics and mortality patterns of MDRTB patients in India
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Introduction: This study gathered information on genesis of MDR TB at 3 centers in India which helps understand the current clinical practice and management of MDR TB and helps to standardize diagnostic and therapeutic strategies relevant for resource poor setting.
Primary objective: To describe the clinical profile, of patients with MDR TB and suspect MDR TB patients in India and their out come.
Study design: Descriptive follow up study.
Study setting and population: Private and public health sector: Patients attending primary, secondary and tertiary health care centers in selected study areas in India.
Study period: 1st June 2007 to 30th May 2009.
Study Variables Clinical Outcome Measures: Cure - Patients treated for 18 - 24 months and who remain smear and culture negative; Likely cures - patients treated for at least 12 months, and who remain smear and culture negative; Absconders/Defaulters and Death.
Results: 344 cases,either suspect or confirmed cases of MDR-TB from 3 different states in India were recruited. 71 cases were culture +ve for MDR TB. 15.77%patients died. 59.54% of the patients had far or moderately advanced chest X-ray lesions. The BMI of patients who died was less than 20 (87%). 27.4% of the patients who died had diabetes.75% were males. Smoking index was moderate to heavy for 25%.More than 50% of the patients were aged between 30 - 50. 58% of patients had previous treatment with 4 drugs and 10% had received second line drugs. 67% of the patients utilized government facility for their treatment. With proper treatment success was > 60%.
Conclusion: MDRTB if not treated can lead to early death among patients with low BMI, Diabetes Mellitus and far advanced chest X ray lesions.

P2626

Resistance pattern to WHO CAT IV regimen in patients suspected of drug resistance tuberculosis presenting to a specialist office practice in Mumbai

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Aim: Patients with suspected drug resistant tuberculosis (DRT) may be empirically started on WHO CAT 4 regimen until TB culture & drug sensitivity are awaited or may follow the entire regimen empirically. We undertook this study to find drug sensitivity pattern to CAT IV anti TB drugs in patients suspected to have drug resistant tuberculosis.
Methods: 27 patients with suspected DRT having sputum or BAL for TB culture positive were included. First line, second line and newer anti-tuberculosis drug susceptibility data were retrospectively analyzed. Sensitivity to cycloserine was not available.
Results: 18 patients (66.67%) had multi drug resistant TB, 2 patients (7.41%) had XDR TB and 12 patients (44.44%) showed resistance to all first line anti-tuberculosis drugs. Out of the 5 drugs tested in category 4, 2 patients demonstrated resistance to all 5 drugs, 6 patients to 4 drugs, 5 patients to 3 drugs, 6 patients to 2 drugs and1 patient to one drug. Drug resistance pattern is shown in the tables.

Table 1. Drug susceptibility pattern

Sr. No	1st line anti-TB drugs	Resistant (n)	Resistantce (%)
1	Isoniazid	21	77.78
2	Rifampicin	20	74.07
3	PZA	18	66.67
4	Ethambutol	12	44.44
5	Streptomycin	20	74.07

Table 2

Sr. No	2nd line anti-TB drugs	Resistant (n)	Resistance (%)
1	Amikacin	2	7.41
2	Capreomycin	2	7.41
3	Kanamycin	2	7.41
4	Moxifloxacin	8	29.63
5	Ofloxacin	15	55.56
6	PAS	8	29.63
7	Ethionamide	15	55.56
	Newer Drug		
8	Clofazimine	0	0

Conclusion: The occurrence of in vitro drug resistance to category 4 anti TB drugs is very high in patients suspected to have drug resistant tuberculosis. This poses challenges to administration of empiric anti TB treatment.

P2627

Multidrug-resistant tuberculosis in a kidney recipient

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A 38-year-old female, ten years after renal transplantation was referred to hospital with symptoms of fever and chest pain. The chest X-ray showed a massive solitary lession over the left hilus. The thoracic computed tomography detected infiltrative area in first, second and third segments in left lung with bilateral fibrosis and calcifications. The fiberoptic bronchoscopy showed a severe inflammation of the wall of upper left lobe, which was covered with white mucous material, easy bleeding on contact. The results of bronchoalveolar lavage were microbiological and histological negative for tuberculosis (TB) and other bacterial pathogens. The immunology test for TB (T-spot.TB) was positive. Due to the CT finding and positive T-SPOT.TB was started triple tuberculostatic therapy till the culture result for TB become ready. 34 days later the patient was re-hospitalized with fever and meningitis instead of the treatment. The result of the lumbal punction was lymphocyte liquid. The result from TB-culture was ready in the same time. Multidrug- resistant TB (MDR-TB) was proved in this patient. Antituberculosis treatment with four medicaments from second line was started.
Tuberculosis is a frequent infectious complication in patients on renal replacement therapy, as a result of immunosuppression from uremia and drugs in the post-transplantation period. The frequency of MDR-TB increases in last years. That requires treatment with second line drugs for longer period than patients infected with drug-sensitive strains and is with higher mortality rates.

P2628

Dynamics of production thyroid-stimulating hormone in patients with multiple-drug resistant tuberculosis (MDR-TB) on the background of prolonged chemotherapy

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Treatment of patients with pulmonary tuberculosis with MDR-TB requires the use of drugs 2 rows that have a large number of adverse reactions. It is assumed that prolonged simultaneous reception use of protionamide and PASK can reduce thyroid function.
Aim: Evaluation of trends in production of thyroid-stimulating hormone (TSH) in patients with MDR-TB on the background of prolonged combined chemotherapy.
Methods: TSH levels in serum were determined in 102 patients with MDR-TB, initially and after receiving patients 60, 120, 180 doses of a combination of antibacterial drugs (capreomycin, protionamide, pyrazinamide, PASK, ofloxacin, cycloserine) by immunoenzyme method.
Results: The level of TSH in patients with MDR-TB before therapy was low (mean 1,57±0,19 mkME/ml). After receiving 60 and 120 doses of the drugs level of the TSH of patients increased (2,95±0,57, p=0.046 and 3,32±0,41 mkME/ml, p=0.0016, respectively). Significant increase in TSH was observed in 20% of patients without clinical manifestations of hypothyroidism. On the background of receiving of drugs (180 doses) TSH levels decreased slightly (2,38±0,37 mkME/ml). Increased TSH persisted in 13% of patients.
Conclusions: In patients with MDR-TB in the background of the combined reception 6 drugs observed increase in TSH levels in the absence of clinical signs of hypothyroidism. The downward trend in TSH levels with continued therapy without the abolition of drugs (180 doses) may indicate the inclusion of compensatory mechanisms, and at this stage of treatment does not require additional correction of thyroid function.