
25. Epidemiology of drug resistant tuberculosis

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Drug resistant tuberculosis in hospitalized patients

Ghiulten I. Apti¹, Anamaria V. Trailescu². ¹*Pneumology, Hospital of Pneumology, Constanta, Romania;* ²*Pneumology, V.Babes Hospital, Bucuresti, Romania*

The drug resistance phenomenon is becoming to reach epidemic and remain a great concern in developing countries.

Aim: to asses the clinical, epidemiological, radiological features of resistant tuberculosis and type of resistance.

We analyzed the recordings of patients hospitalized in our hospital with pulmonary Tb between 12.2004-12.2005 (1451) and from 321(22%) with antibiograms made in 2005, we selected 43 with resistance at least to one drug.
mean age 41,6 +/-14,3

Male 74,4%; urban residence 53,5%; socioeconomic status precarious in 72%; smokers 88,3%; Alcoholism in 60%; chronic hepatitis in 11,6%; Diabetes mellitus in 7%; low weight in 81,4%; epilepsy 6,9%; Radiological profile; cavitary lesions 69,7%(extensive80%);cazeous ulcerated 23,3%(extensive 60%)

The initial antibiogram was performed only at patients contact with resistant TB, or positive smear after T2;

In 68,4% patients with relapses was performed susceptibility tests.

Susceptibility test revealed: primary resistance 23,(1 case MDR, mono-resistance to Streptomycin(SM) 60%) ;

Secondary resistance: 76%(MDR 56,7%-3 cases resistant to all drugs line 1 and 2) Mono-resistance: INH 30%; RIF 3,3%; INH-SM 6,7%; SM 13%; EMB and PZA was not specified;

Mean number of treatment before resistance occurrence was 5; cause of resistance: non compliance to treatment 88% (mean period before quit -2,5 month), inadequate treatment 4,7% other conditions 7,3%

11,6% of patients with known resistant strains received inadequate regimens ;

Conclusions: primary resistance occurred frequent to SM (used for other diseases previous); secondary resistance was associated with inadequate regimens ;

MDR is associated with extensive forms and frequent relapses due to associated conditions.

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Characterization of the aetiological agent in patients with lung tuberculosis

Marina V. Chernykh, Galina I. Alexeeva. *Bacteriologic Laboratory, Tuberculosis Research Institute, Yakutsk, Russia*

We compared the characteristics of aetiological agent in newly diagnosed and chronic lung tuberculosis (TB) patients, using bacteriologic diagnostic tools.

80 strains of *M.tuberculosis* (MTB) from specimens of 80 patients with various forms of TB were studied. Group 1 included 40 MTB cultures from newly diagnosed lung TB cases. Group 2 included 40 strains from patients with chronic disease who had been treated with anti-TB drugs for a long time.

In group 1 strains grew in 28.3 days, and showed massive (15;37.5%), moderate (2;5.0%) and low growth (23;57.5%). There were 11(27.5%) drug-susceptible strains and 29(72.5%) drug-resistant (DR), with 18(45.0%) multidrug-resistant (MDR) ones. In group 2 strains grew in 26.6 days, and showed massive (12;30.0%), moderate (8;20.2%), and low growth (20;50.0%). Only 1(2.5%) was drug-susceptible. 39(97.5%) were DR, and 30(75.0%) MDR.

Biochemical strain typing confirmed that all strains were of the *M.tuberculosis* species. Biochemical study of enzymes as indicators of MTB viability showed that strong catalase activity was present in 37(92.5%) cultures in both groups, while strong peroxidase activity was present in 34(85.0%) cultures in group 1 and in 37(92.5%) in group 2. By presence and abundance of cord factor, both groups were comparable. Biological test on 35 white mice confirmed that strains from both groups preserved virulence.

MTB exposed to prolonged anti-TB chemotherapy were as active as strains from newly diagnosed patients. They showed remarkably high viability while remained virulent, which is a bad prognostic sign.

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Change of M.tuberculosis drug susceptibility spectrum during chemotherapy

Volha A. Budnik, Larysa K. Surkova, Evgeni R. Sahalchik, Andrei P. Astrauko, Aksana M. Zalutskaya. *Laboratory, Research Institute for Pulmonology and Phthiology, Minsk, Belarus*

The purpose of research was studying frequency and the reasons of amplification of *M.tuberculosis* (Mtb) drug resistance. We carried out comparative analysis of Mtb drug susceptibility testing (DST) results of 65 TB patients (53 male patients, 12 female patients in the age of 23 - 75 years) during chemotherapy. Initial Mtb drug sensitivity was in 19 (29.2%) cases, Mtb drug resistance in 46 (70.7%) cases. The spectrum of drug resistance was distributed in the following way: mono-resistance was in 5 cases (10.8%), poly-resistance in 15 cases (32.6%), multi-resistance in 26 cases (56.5%). After carrying out one or more inefficient courses of chemotherapy, Mtb drug sensitivity was in 5 patients (7.7%), drug resistance was in 60 (92.3%) patients including mono-resistance in 5 (8.3%) cases, poly-resistance in 6 (10.0%) cases, multi-resistance in 49 (81.6%) cases. During chemotherapy, additional drug resistance developed in 44 (67.7%) patients, no changes was observed in 18 (27.7%) cases, reduction of drug resistance spectrum was observed in 3 (4.6%) cases. We found amplification of Mtb strains drug resistance in 21.6±1.5 month on average. The analysis of reasons of additional Mtb drug resistance development shown that principal causes were absence of strict control of antituberculous drugs taking and timely correction of chemotherapy regimens.

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Dynamics of primary drug resistance in Novokuznetsk

Irina B. Viktorova^{1,2}, Sergei A. Dolgikh^{1,2}, Arkady L. Khanin¹, Tamara A. Jasukevitch². ¹Phthysiopulmonary Department, State Medical Institute for Postgraduate Training, Novokuznetsk, Russia; ²Phthysiopulmonary Department, TB Hospital, Novokuznetsk, Russia

The level of primary drug resistance is known to be the one of the indicators of tuberculosis (TB) control programme efficacy. Primary drug resistance, particularly multidrug resistance (MDR) is one of the main causes of ineffective treatment of new TB cases.

The aim of the study was to estimate the dynamics of primary drug resistance in a big industrial city of Western Siberia where the programme of MDR TB management was started in 2003.

The results of drug susceptibility test (DST) to I line anti-TB drugs among new (never previously treated) TB cases of civil sector were studied. DST was performed on Löwenstein-Jensen media using absolute concentration method in a laboratory with controlled quality (concordance with reference laboratory >95%). Level of primary resistance has been decreased from 62,8 to 38,2% during the 5-yr period (table 1). Mono-resistance also decreased (11,5% and 6,1% respectively). But significant resistance (to H or R) is on the same level, as well as primary MDR.

The results of DST

Primary resistance	2000		2004		2005	
	n	%	n	%	n	%
Resistance to at least 1 drug	234	100,0	304	100,0	314	100,0
Any resistance with H	147	62,8	159	52,0	120	38,2
Any resistance with R	93	39,7	129	42,4	105	33,4
MDR (at least H+R)	47	20,0	58	19,0	54	17,2
Mono-resistance	40	17,1	57	18,8	53	16,9
Resistance to 2 drugs	27	11,5	40	13,0	19	6,1
Resistance to 3 drugs	31	13,2	43	14,0	42	13,4
Resistance to 2 drugs	75	32,0	76	25,0	59	18,8

Conclusion: Primary MDR is detected in every sixth new TB patient in Novokuznetsk. High level of primary drug resistance, particularly of primary MDR (about 17%) needs to improve TB control measures.

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Treatment results of multidrug-resistant pulmonary tuberculosis

Gulcihan Ozkan, Nur Dilek Bakan, Aygun Gur, Senem Beres, Resat Kendirlihan, Mehmet Bayram, Gungor Camsari. *Chest Diseases, Yedikule Teaching Hospital for Chest Diseases and Thoracic Surgery, Istanbul, Turkey*

Objective: To evaluate the clinical characteristics, resistance patterns and treatment results of patients with multidrug-resistant tuberculosis (MDR TB).

Methods: Records of MDR TB patients were retrospectively reviewed. Previous antituberculous treatment histories, treatment regimens, side effects, smear and culture conversion times and treatment results were analyzed.

Results: Thirty-eight patients with MDR tuberculosis treated over a 10 year period from 1994 to 2004 were included. Two patients were female, 36 were male. Mean age was 38.4 (range 18-62). Ten (26.3%) of the patients had primary drug resistance, 28 (73.7%) had secondary drug resistance. Thirty-four (89.5%) patients had in addition to isoniazid and rifampicin resistance at least one further drug resistance. The mean number of drugs given for MDR antituberculous treatment was 6 (range 5 to 8). Mean duration of treatment was 20.2 (range 2-30) months. Cultures became negative after a mean of 53.5 days (range 7-106). Side effects were as follows; 21.1% (8/38) of the patients had ototoxicity, 10.5% (4/38) had psychiatric disturbance, 13.2% (5/38) had gastrointestinal complaints and 2.6% (1/38) had hepatotoxicity. Seven (18.4%) patients underwent surgical resection as an adjunct to antituberculous chemotherapy. The overall success rate of treatment was 79.4% (27/34), with 41.2% (14/34) cures and 38.2% (13/34) treatment completion. Five (14.7%) of the patients did not complete their treatment and 2 (5.9%) of the patients died. Four (10.5%) patients are still under treatment.

Conclusion: Despite the small number of patients, our treatment results suggested that the use of surgery adjunct to appropriate treatment regimens is promising in MDR TB.

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Follow-up and treatment of patients who were diagnosed multidrug resistant tuberculosis

Canan Ones, Armagan Hazar, Arzu Soyhan, Dida Marasli, Nur Keren, Sinan Bodur, Cevriye Sisman Kartoglu. *Chest Diseases Department, Sureyyapasa Chest Diseases Hospital, Istanbul, Turkey*

Clinical analysis of our patients with multidrug resistant tuberculosis, who were admitted between 1997-2005 at our clinics was performed respectively. Sixty-two patients that were found resistant at least to isoniazid and rifampin were included in this study. Patients were evaluated for age, sex, case definitions, side effects to minor drugs, need for surgery and results of the therapy. Forty-tree of them were male (mean age:35.4) and 19 of them were female (mean age:26.5). Thirty

patients were primary resistant (M:20, F:10) and 32 patients were secondary resistant (M:23, F:9). During minor drug treatment we observed side-effects in 12 patients and in 7 of them we had interrupted the treatment. Lobectomy was performed in 4 patients. Thirty-five patients were completed the treatment and 16 patients abandoned it. Treatment of 11 patients are still ongoing during our study. The treatment of multidrug resistant tuberculosis is long and expensive and the existence of abandoned patients in a chest disease hospital indicates a need for improvement in the tuberculosis control programme.

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Characteristic of resistance of mycobacteria of tuberculosis to antibacterial preparations for acute progressing forms of tuberculosis of the lungs (APFTL) in females of fertile age

Kayum S. Muhamedov, Muhabbat H. Jurabayeva. *Department of Tuberculosis, The Tashkent Medical Academy, Tashkent, Uzbekistan; Department of Tuberculosis, The Tashkent Medical Academy, Tashkent, Uzbekistan*

Causes of development of resistance for APFTL are the following: in adequate treatment of tuberculosis in the past, contact with patients, discharging resistant strains of mycobacteria of tuberculosis, application of antibacterial preparations for different non-specific diseases in hospitals of common medical net.

Drug resistance of MBT to antituberculous preparations (ATP) was studied on 36 females, drug resistance was found in 28 (77.8%) females with APFTL. Monoresistance found to be in 21.4% cases, chiefly to streptomycin (17.8%). In 8 (28.6%) patients resistance of MBT to two preparations was established, more often to streptomycin + rifampicin. Resistance to three ATP found to be in 7 (25%) patients, chiefly to combination HSR – in 4 (14.3%) cases. Attention attracts a high frequency of polyresistance of MBT to four ATP. Resistance to SHRE was fixed in 7 (25%) patients. Primary drug resistance of MBT to ABP was established in 11 (39.3%), of them chiefly to S and SR – in 4 (36.35%) cases respectively. Secondary resistance was revealed in 17 (60.7%) patients, and more often to four – 6 (35.3%) and three SRH - 3 (17.6%) ABP.

Results of treatment of 28 patients with drug resistance of MBT to ABP showed that positive dynamic was noted in only 2 (7.1%) cases, insufficient improvement in 9 (32.1%), without dynamic - in 11 (39.3%), progressing tuberculous process in 3 (10.8%) and progressing with lethal outcome - in 3 (10.7%) cases.

Thus, APFTL in females of fertile age is characterized by a high percent of developing drug resistance and are a cause of a low efficacy of treatment.

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Using of results of drug sensibility of infection source in start chemotherapy choice in TB children and teen-agers

Vera A. Firsova, Elena S. Ovsyankina, Mariya G. Kobulashvili, Marina F. Gubkina, Lyudmila V. Panova. *Pediatrics, CTRL, Moscow, Russia*

With the aim of revealing of correlation of sensibility of M.tuberculosis in teenagers and an infection source it was made a comparison of sensibility of M.tuberculosis in 23 bacteria eliminators-teenagers of family or well-known tight contact with TB patient with data in infection source. Most of patients – 21 (91.3%) were newly revealed, early not treated.

In 16 incidences of 23 (which composed 69.6%), was observed full or partial coincidence of data of resistance of patient and an infection source. A rate of coincidence of type and number of drugs is different and fluctuated of 25% till 100% and in most patients was 40 – 75%.

So, received data, indicating on full or partial coincidence of data of M.tuberculosis resistance in teenager and infection source in 69.6% incidences, evidences of possibility of using of M.tuberculosis resistance data of infection source on the first stages of treatment of teenagers till receiving own inoculation results.

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Initial antituberculosis drugs resistance

Banu Eris Gulbay¹, Serhat Erol¹, Fatma Arslan¹, Ismail Ceyhan², Zeynep Pinar Onen¹, Turan Acican¹. ¹Department of Pulmonary Diseases, Ankara University School of Medicine, Ankara, Turkey; ²Tuberculosis Research and Reference Laboratory, Refik Saydam Hifzıssıha Institution, Ankara, Turkey

Resistance of Mycobacterium tuberculosis to drugs is an important worldwide problem in anti-tuberculosis (anti-TB) treatment. We investigated the initial resistance of the *Mycobacterium tuberculosis* which is isolated in 61 patients with newly diagnosed pulmonary tuberculosis to anti-TB drugs over the period of 1999-2004. All strains were isolated from the lower respiratory tract. None had a history of anti-TB drugs use. We compared the clinical and radiological features of these patients. Sixty one *M. tuberculosis* was isolated and their susceptibility to Isoniazid (INH), Rifampin (RIF), Ethambutol (EMB) and Streptomycin (SM) was examined by the proportion method in Loewenstein-Jensen medium. The overall rate of initial drug resistance among *M. tuberculosis* isolates resistant to at least one drug was 19.7%. Two patients (3.3%) had multidrug-resistant. Initial resistance to SM was the most frequent (13.1%; 8 cases), followed by RIF (6.6%; 4 cases), EMB; (4.9%; 3 cases), INH (3.3%; 2 cases) and. Initial resistance was noted as 1.6% to 3 drugs and 1.6% to 4 drugs. No age, radiological extension or duration of hospitalization differences was observed between patients who did and did not have initial resistance to drugs. Although there were a low number of

patients in our study, the outcomes which related to initial resistance to anti-TB drugs are consistent with previously published studies. In our country, high initial drug resistance which may affect the success rates of anti-TB treatment is still an important problem, and it is responsible for using anti-TB treatment with at least 4 first-line drugs in the initial phase of the treatment and also replacing SM with EMB, owing to high initial resistance to SM.

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Marina V. Chernykh, Galina I. Alexeeva. *Bacteriologic Laboratory, Tuberculosis Research Institute, Yakutsk, Russia*

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80 strains of *M.tuberculosis* (MTB) from specimens of 80 patients with various forms of TB were studied. Group 1 included 40 MTB cultures from newly diagnosed lung TB cases. Group 2 included 40 strains from patients with chronic disease who had been treated with anti-TB drugs for a long time.

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Biochemical strain typing confirmed that all strains were of the *M.tuberculosis* species. Biochemical study of enzymes as indicators of MTB viability showed that strong catalase activity was present in 37(92.5%) cultures in both groups, while strong peroxidase activity was present in 34(85.0%) cultures in group 1 and in 37(92.5%) in group 2. By presence and abundance of cord factor, both groups were comparable. Biological test on 35 white mice confirmed the preserved virulence of MTB strains from both groups.

MTB exposed to prolonged anti-TB chemotherapy were as active as strains from newly diagnosed patients. They showed remarkably high viability while remained virulent, which is a bad prognostic sign.

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Monoresistance to rifampicin – a problem for treatment results?

Valentina V. Esanu, Cristian Grigoras, Corina-Elena Horodniceanu. *Outpatients Service, Clinic of Pulmonary Diseases, Iasi, Romania*

Aim: To find out the treatment outcomes of TB patients with monoresistance to rifampicin on sputum culture.

Material and methods: There were 34 cases (24 new cases and 10 relapses) of pulmonary TB registered in our district between 1998-2004. Average age was 48.4 years for men (29 cases) and 30.8 years for women (5 cases). Standard regimen category I DOTS received 8 new cases and category II received 2 relapses cases. The others patients (16 new cases and 8 relapses) were treated with individualized therapy.

Results: 87.5% of cases treated with individualized therapy were cured, 8.33% died and 4.17% interrupted treatment. 80% of cases received category I or II DOTS were cured.

Conclusions: There were no significant differences between patients treated with standard regimen and patients received individualized therapy. Treatment success rates were high in both cases. Furthermore our study showed that despite the resistance to rifampicin, cure with standard course treatment was possible in majority of new cases/relapses pulmonary TB.

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MDR tuberculosis as the principal cause of death

Volha A. Budnik, Larysa K. Surkova, Andrei P. Astrauko, Aksana M. Zalutskaya. *Laboratory, Research Institute for Pulmonology and Phthiology, Minsk, Belarus*

We analysed causes of death in TB patients died of tuberculosis within the first year after TB revealing. Multi drug resistant (MDR) tuberculosis was detected in 74 from 115 (64.3%) cases, primary MDR of *M. tuberculosis* (*Mtb*) was in 30%. Among died of tuberculosis within the first year after TB revealing, 67.0% patients were in able-bodied age (41 - 60 years), 91 (72.1%) were male patients, 24 (26.3%) were female patients. Duration of last hospitalization till 1 month was in 73 (63.4%) cases, among them 15 patients (20.0%) died within the first 3 days from the moment of hospitalization. The most frequent TB form was disseminated pulmonary tuberculosis - in 37 (32.2%) cases. Caseous pneumonia was in 35 (30.4%), fibrous-cavernous pulmonary TB - in 14 (12.2%), miliary tuberculosis – in 6 (5.2%), tuberculous meningitis - in 3 (2.6%), other assets - in 20 (17.3%) cases. The most frequent direct cause of death was TB progressing - 89 cases (77.3%). Pulmonary-cardiac insufficiency was in 16 (13.9%), pulmonary hemorrhage - in 4 (3.4%), other reasons – in 6 (5.2%) cases.

Thus, we observed great deal of MDR TB patients among died of tuberculosis within the first year of supervision. Among them, TB progressing prevailed as the direct reason of death.

anorexia (64%), and night sweats (53.3%). Extra-pulmonary signs were observed in 43% of cases and consisted of lymphadenopathy (25%), cutaneous lesions (14.8%), hepato-splenomegaly (7.4%) and nervous signs (7.4%). Sixty per cent of chest radiograph showed military pattern. In the remaining cases, radiography was normal or showed suggestive signs of active tuberculosis. Lymph node was the most frequent extra-pulmonary location (9 cases).

The diagnosis was provided by bacteriological examination: Mycobacterium tuberculosis was isolated from 16 patients (sputum 75%, bronchial aspiration 12%, urine 12%, adenopathy 6%). In 14 cases, histology showed characteristic granulomas on pleural biopsy (36%) and from other sites (peripheral adenopathy 28.5%, skin 14%, bronchi 7%, bone 7%, bone marrow 7%). The evolution was favourable in 22 patients with no resistance or relapse after treatment.

Conclusion: dTB is a severe disease. A good knowledge of its presentation and active bacteriological and histological investigation lead to an early diagnosis and ameliorate the prognosis.

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Pulmonary tuberculosis without bacteriological confirmation – a diagnosis problem

Ioana M. Stefanescu, Claudia C. Popovici, Viorel A. Olar. *Pneumology, Central Military Hospital, Bucharest, Romania; Pneumology, Central Military Hospital, Bucharest, Romania; Pneumology, Central Military Hospital, Bucharest, Romania*

Introduction: For bacteriological confirmation of pulmonary tuberculosis we use smear and culture from sputum and bronchial aspiration at bronchoscopy. Sometimes our efforts haven't any results. There are situations when starting investigations for another disease (usually neoplastic) we put the diagnosis of pulmonary tuberculosis after histological analysis.

Material and method: At the patients with pulmonary tuberculosis admitted in our department between October 2004-2005 we had a bacteriological confirmation rate of 72% at smear and 62% in culture. Five cases that were smear and culture negatives had histological confirmation. In these cases the initial diagnosis suspicion was of a neoplastic disease and surgery had therapeutically purposes.

Results: We had three women and two men aged between 25 and 74 years. In two cases the lesions were only on one lung and in the other three bilateral. One patient had a secondary lesion in a suprarenal but was benign and then pulmonary surgery was performed. The lesions had a macro nodular aspect some of them with necrosis.

Conclusions: In the presence of a tumoral aspect at CT scan the diagnosis of pulmonary neoplasia is the first in mind but we need histological confirmation. If we send a patient with tuberculosis for oncological treatment he will aggravate and this will be considered as his neoplastic disease evolution. On the other hand "treating" a neoplasm with antituberculous therapy we lose the surgical moment.

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Features of immune system impairment in different types of diffuse TB process in adolescents

Vladislav Y. Gergert¹, Mikhail M. Averbach, Larisa I. Rusakova. *Immunology, CTRI RAMS, Moscow, Russia; Immunology, CTRI RAMS, Moscow, Russia; Pediatrics, CTRI RAMS, Moscow, Russia*

We conducted the complex immune investigation of patients aged 15-17 years old with different types of flow of diffuse TB process (smooth accelerated flow, slow, undulate flow).

For smooth flow situations, more prominent specific blast-induction was characteristic, which dynamically fell down and normalized at the end of main therapy course. In cases of smooth slow flow, initially low reaction parameters grew up till the 3rd month of therapy, and after that reduced gradually. The lowest reaction indicators' scores were obtained in patients with undulant flow of disease, and increased only up to 9-12 months of therapy. T-lymphocytes functional activity repair in a whole was fixed only for smooth accelerated type of disease flow. Even at the end of therapy course we did not obtained B-cell percentage reduce in undulant flow. Anti-TB antibodies rate decreased most of all in patients with smooth accelerated type of disease flow in the process of therapy, whereas in undulant flow patients TB-specific AT were revealed in high titre.

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The clinical current of tuberculosis at patients with different genetic markers

Mirazim A. Khakimov. *Ministry of Public Health, Research Institute of Phthysiology & Pulmonology, Tashkent, Uzbekistan*

The aim of the study was the assessment of clinical-laboratories peculiarity current of lungs and nephrotuberculosis (NT) of patients with different combining genetic markers (CGM) at nowadays.

Material and methods: 237 patients with lungs and NT were examined. We found next markers: the phenotype of haptoglobin (Hp), the type inactivation of GINK, the activity of erythrocyte enzyme of glucose 6-phosphate dehydrogenase (GPDG). All patients were break up four groups by combining genetic markers (CGM): 1. unfavourable – the combining of homozygous phenotypes Hp 2-2 or Hp 1-1 + the poor of type inactivation of GINK + the reduction of activity of erythrocyte enzyme of GPDG; 2. favourable - the combining of heterozygous phenotypes Hp 2-1 + the strong of type inactivation of GINK + the increasing of activity of

erythrocyte enzyme of GPDG; 3. relatively unfavourable – the combining of two unfavourable and one favourable markers; 4. relatively favourable – the combining of two favourable and one unfavourable markers.

Results: We found that the various forms of NT by 2.3 times often of patients (14.4 and 6.4%) in 1st group and by 1.8 times often in 2nd group (50.9 and 28.3%), than at patients in 2nd and 4th groups. At the most patients with cavernous, polycavernous and fibrocavernous forms of lungs and NT, we found the 1st and 3th. We observed dull ache in loin by 3 times (15.4 and 5.2%), strangury - by 1.8 times (12.0 and 6.5%) weakness – by 2.8 times (15.6 and 5.5%) often than at patients with favourable CGM.

Conclusion: The clinical-laboratories change of patients with unfavourable and relatively unfavourable CGM of lungs and NT by 2-3 times often than patients with favourable and relatively favourable CGM.

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Clinical peculiarities and laboratory indices in respiratory organs tuberculosis with dysfunctions of respiratory system

Larissa A. Gorbath. *Minsk, Scientific Research Institute of Medical and Social Examination and Rehabilitation, The City of Minsk, Minsk, Belarus*

Research of features of clinic and laboratory parameters at patients with a tuberculosis with functional infringements of respiratory system is lead. Object of research of steel of 66 patients with a tuberculosis of bodies of breath which have divided into two identical groups on number (on 33 persons). The first group included sick functions without infringements of external breath, in the second - patients with functional infringements of respiratory system of a different degree of expressiveness. The data received during research were processed by various statistical methods. Comparison of quantitative attributes was carried out with the help of calculation of criterion Student, qualitative - z criterion. Calculated criteria were compared to their critical value for 5% of a significance value.

At the patients with a tuberculosis having functional infringements of respiratory system is often, in comparison with patients with normal function of external breath, the widespread forms of disease and bacterioexcretion were registered. At this category of patients the short wind and rattles in easy is more often was observed at auscultation, the increase in frequency of the intimate reductions, more expressed a voltage of mechanisms of adaptation, lower contents of hemoglobin, accelerated erythrocyte sedimentation rate, the greater contents of quantity of leukocytes in peripheral blood was marked, more expressed intoxication was observed in comparison with patients without functional infringements. The revealed law specified value of an intoxication in occurrence of functional frustration of respiratory system.

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Latent activity of primary respiratory tuberculosis in children newly diagnosed in the phase of calcification

Valentina F. Eluphimova, Natalia V. Yuhimenko, Lyubov A. Mitinskaya. *Central TB Research Institute, Russian Academy of Medical Sciences, Moscow, Russia; Central TB Research Institute, Russian Academy of Medical Sciences, Moscow, Russia; Central TB Research Institute, Russian Academy of Medical Sciences, Moscow, Russia*

The paper shows the latent activity of newly diagnosed tuberculosis in the phase of calcification in children: clinical and X-ray changes, tuberculin activity (Mantoux test), the presence of Mycobacterium tuberculosis (MBT) in the sputum and blood (cultivation, bacterioscopy, polymerase chain reaction PCR), the blood levels of acute-phase reagents: haptoglobin and α_1 -protease inhibitor (α_1 -PI), immunological parameters, tuberculosis antibodies (TAB), and MBT antigen. Ninety children were examined before treatment. Twenty-five children (Group 1) were found to have single minor calcified masses in one group of intrathoracic lymph nodes or in lung. Thirty-five children (Group 2) had multiple lymph nodes or foci in the lung in the phase of consolidation and calcification. Thirty children (Group 3, controls) were diagnosed as having intrathoracic tuberculosis in the phase of infiltration. The signs of latent activity of tuberculosis were detected in all the children, being more pronounced in Group 3. Thus, MBT and TAB were revealed in 90% of children in Group 3 and in 52.9 and 76.0% in Groups 3 and 1 respectively. There were higher levels of α_1 -PI in 96.6 and 75.0% in Groups 3 and 1. There were signs of intoxication in 80 and 88% and a hyperergic Mantoux reaction in 44.0 and 43.3%, respectively. The frequency of the signs of activity did not greatly differ. Thus, children with newly diagnosed respiratory tuberculosis in the phase of calcification should be regarded as having the signs of tuberculosis activity, followed up as Group 1 patients, and prescribed chemotherapy for 6 month or more, depending on the extents of the process. (2H, R, Z+4H +Z).

E201

Endobronchial tuberculosis followed by sepsis-case reports

Katerina Boskovska, Mirjana Dilberovska, Dragan Dacevski, Natasa Chadikovska. *Department for Tuberculosis, Institute for Respiratory Diseases in Children, Skopje, Macedonia*

Tuberculosis (TB), in some cases can be followed by sepsis, mostly by dissemination from, until than, unknown septic focuses.

Case 1: Anamnesis: Ten years old child, male, with positive contact with TB

patient. Ten days before admission, with high temperature, anorexia, vomiting and cough.

Status at admission: Afebrile, with pallor skin, dehydrated, with frequent cough. On auscultation of lungs: Bronchial breathing on the right side.

Investigations: Mantoux test: 20mm, Sedimentation: 70/105, Perfusion scan: Low perfusion in the right middle lobe. Haemoculture: Staphylococcus coagulase negative; Bronchoscopy: Endobronchial TB on the right bronchus. The other laboratory investigations and Mycobacterium TB culture were negative.

Case 2: Anamnesis: Five years old child, female, with positive intrafamilial contact with TB patient. Two weeks before admission, with high temperature and frequent cough.

Status at admission: Febrile, with pallor skin, with frequent cough. On auscultation of lungs: Pneumonic finding both-sided, and mild bronchospasm.

Investigations: Mantoux test: 12mm, Sedimentation: 138/146; X-ray of lungs: Left-sided pneumonia with pleural drain and enlarged hilum; Haemoculture: Staphylococcus coagulase negative; Ultrasonography of abdomen: Liver enlarged, with supradiaphragmatic drain on the left. Bronchoscopy: Endobronchial TB on the left bronchus.

Treatment: Both of the children were successfully treated with antibiotics, and modified antituberculous therapy.

Control investigations: X-ray was normalised after 6 months, and bronchoscopy findings were evidently regressed after 1 year.

Conclusion: TB can be followed by other infections, which modifies the treatment and the prognosis. Infective foci are hidden, which requires more diagnostic procedures than usual.

E202

Social problems of drug resistant tuberculosis

Liubov E. Parolina. *Phthisiatri Department, Saratov State Medical University, Saratov, Russia*

The level of tuberculosis (TB) case rate in antisocial persons group essentially affects an epidemic situation of region as a whole.

The purpose of research was a definition of the most significant social factors of risk at patients for the first time the revealed TB, TB mycobacteria of excreting drug resistant form.

The carried out analysis of medical and social characteristics of 144 patients with a drug resistant TB (DRTB) has shown that men younger 45 years prevailed (68.1%) among patients. At 91.0% attributes of a social disadaptation were fixed. Persons with the low educational qualification and serious conditions of physical work prevailed among patients. Unfavorable conditions of residing had depressing number of patients. The lonely persons who are not having monogynopaediums averaged 18.1%. 82.0% of patients from among persons of able-bodied age did not have constant place of work. 82.0% of them abused alcohol and 61.0% of patients with DRTB were released from prison. From number for the first time revealed patients at 63.9% of them two were taped as a minimum and three chronic diseases were more often. Most the chronic bronchitis and a chronic gastritis were frequently recorded. 72.9% of patients were malicious smokers and smoked more than one pack of cigarettes a day. At 66.7% of patients wide-spread forms of a TB that is connected to insufficient attention to own health have been revealed. At fluorographic inspection only 4.9% of patients were revealed.

DRTB is characterized by a high level of social problems among the patients. They determine a necessity of carrying out of the differentiated actions on prophylaxis of diffusion of TB with medicinal fastness TB mycobacteria among socially disadapted persons.