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MEDICO-SOCIAL AND EPIDEMIOLOGICAL ASPECTS OF TUBERCULOSIS, COMBINED WITH HIV INFECTION IN THE IRKUTSK REGION

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Summary: The epidemiological situation of tuberculosis, combined with HIV - infection in the Irkutsk region is unfavorable because of the regions with the largest incidence of both infections. Indicator of the incidence of newly diagnosed STI, increased from 1.3 per 100 thousand population in 2000. to 20.4 per 100 thousand population in 2009, the total incidence rate increased from 1.8 per 100 thousand population in 2000. to 47.7 per 100 thousand population in 2009. and the mortality rate for the period 2005 - 2009. increased from 1.06 per 100 thousand population to 15.5 per 100 thousand population. The study of medical and social characteristics of revealed that TB patients combined with HIV infection are in most cases, the were not social and adopted persons (75.5%). According to the appealability (74.8%) combined pathology is revealed in health care establishments. TB develops on HIV-infection background (91.6%) and is characterized by an increase in the proportion of heavy and acutely progressive forms (37.3%).

Key words: tuberculosis, HIV - infection, the Tuberculosis epidemiological situation combined with HIV - infection.

The aim of the study. Study of features of the tuberculosis epidemiological situation combined with HIV infection and the medical and social characteristics of the firstly revealed patients with combined pathology in the Irkutsk region.
Materials and methods. Analyzed the data of reporting forms № 8, 33, 61, 2000 and 2010. And all credential form № 263 / a "personal record card to the patient with tuberculosis, combined with HIV infection" and № 089 "Report of patients with newly diagnosed in the life of tuberculosis, with recurrence of tuberculosis "in 2010.

Results and discussion. Retrospective analysis of epidemiological situation of HIV infection in the Irkutsk Region for the period 1998-2006 showed that up to 1999 the morbidity of HIV infection was of a sporadic nature. The situation worsened in 1999, which observed a high rise in the incidence of HIV infection among the population [2,3]. Since 2000, it has been observed a decrease of HIV incidence with a simultaneous increase rapidly (on average 14.3%) prevalence of HIV infection among the population (Fig. 1).

The dynamics of the incidence of HIV infection in the Irkutsk region can be divided into two periods: the first - 2000 - 2003 index decreased by 40.8%, the second one – 2004 – 2009 the rate tended to increase, and enlarged in 2009 by 79.8% compared to 2003., exceeding the same indicator for Russia is 2.7 times. The prevalence of HIV infection, in contrast to the incidence rate tended to increase, and for a given period it increased 2.6 times. In 2010 the incidence and prevalence of HIV infection decreased compared to 2009. 18.9% and 6.2%.

According to the data, high incidence and prevalence of the population of the Irkutsk region of TB and HIV infection cause the increase in the frequency of occurrence of tuberculosis in HIV-infected patients. A prerequisite for the growth of TB patients with HIV infection is a high HIV incidence of tuberculosis among the population. In addition, 30% of people who have had tuberculosis, the residual changes in HIV infection are formed, which have become a source of its reactivation.

Proportion of tuberculosis cases among the group of patients with HIV in 2010 in the Russian Federation was 3.7%, in the Siberian Federal District - 5.4%, in the Irkutsk region - 4.2%. Among the dead patients with HIV infection the part of registered cases of tuberculosis in was 70.8%, in the Irkutsk region - 76.7%.

In the Irkutsk region intense epidemiological situation in tuberculosis, combined with HIV infection still remains, the incidence rates of which is higher than similar indicators in the Siberian Federal District and the Russian Federation as a whole (Fig. 2).

Each year, it is observed an increase in the incidence of newly diagnosed active tuberculosis combined with HIV infection. During the reporting period the indicators were characterized by stable tendency to a growth and the morbidity rate increased in 16.8 times, the prevalence to 30.7 times and mortality over the past 5 years, 15.5 per cent. As the transition of HIV from the pre-clinical stages to the stage of AIDS, the tuberculosis epidemiological situation in the Irkutsk region will dramatically worsen with the primary-grown of the mortality rate from tuberculosis.

Among the new cases (446) of tuberculosis, combined with HIV infection, in the Irkutsk region in 2010 men were dominated - 65.0%, women - 35.0%. The structure of newly diagnosed TB patients, combined with HIV infection, by age and sex has a high value at the age of 20-29 years (49.4%), predominantly among men (32.3%) , the followed indicator decreased, reaching a minimum values in the age group 55-59 (4.3%).

The study of the social situation of TB patients, combined with HIV infection, found that most of them are unemployed - 75.5%, 13.5% - persons GUFSIN system, 3.5% - homeless persons, 7.5% - the workers.

In most cases (57.9%) TB patients with HIV infection are detected in general health care when the patient turns to the therapeutist (33.1%) with signs of pulmonary disease, or when he is in a therapeutic hospital (24.8%) Moreover, the major method of revealing of the disease is radiation - 87.0%, 12.5% bacteriological. Posthumously tuberculosis diagnosed in 0.5% of cases. Circumstances of the revealing of tuberculosis combined with HIV infection, in 74.8% of cases is the visit to a doctor with complaints, active detection was 25.2%.

Among newly diagnosed patients with combined pathology people with tuberculosis of respiratory organs are dominated. The incidence of respiratory tuberculosis among HIV-infected patients was 97.0%, the incidence of non-pulmonary was 3.0%. Among the clinical forms of tuberculosis in HIV-infected patients predominate: infiltrative - 45.1%, disseminated - 18.8%, fibrocavernous - 10.5%, focal - 7.8%, pleural effusion of tuberculous etiology - 6 8%, miliary - 5.0%, caseous pneumonia - 3.0%, tuberculoma - 1.0%, cavitary tuberculosis - 1.0%, generalized TB - 1.0. Among all cases the persons discharging bacteria accounted 47.0%. Resistance to chemotherapy was noted in 5.9% of cases, 26.2% of cases the result is not obtained in 23.3% of cases there is no resistance to chemotherapy, and in most cases, 44.6% of the study on the resistance was not conducted. A significant proportion (37.3%) forms, such as fibro-cavernous tuberculosis, disseminated tuberculosis, caseous pneumonia, miliary tuberculosis, evidence of clinically unfavorable structure of newly revealed pulmonary tuberculosis in HIV-infected patients.

At the time of detection of combined pathology the majority (88.5%) of patients had advanced stages of HIV - infection (Fig. 3). Analysis of tuberculosis patients with HIV infection showed that 91.6% of cases developed TB in HIV-infection, in 8.4% of HIV infections has been developing on background of the previous tuberculosis.

In 1999, with co-diagnosed HIV infection and tuberculosis, died just one patient in 2003 - 29 people, and in 2006 a third of deaths from HIV infection the cause of death was tuberculosis. It should be noted strong growth in mortality over the past 4 years. So, in 2007. 97 patients with combined pathology died, in 2008 – 268, in 2009 - 388 in 2010 - 411 people. An analysis of deaths by age and sex showed that in most cases - 27.3% - are men aged 30-39 years. Among

women, death rate predominate at the age of 20-29 years is 20.0%. The peak of deaths from tuberculosis among HIV-infected patients accounted for the age groups 20-29 and 30-39.

In the structure of mortality in patients with tuberculosis, combined with HIV infection, in 2010 66.7% were not social and adopted persons, 20.1% - working people, 13.2% - were persons of GUFSIN system.

The forms of tuberculosis in rank order of dead people are distributed as follows: disseminated tuberculosis - 60.0% of cases, infiltrative tuberculosis - 26.7%, miliary tuberculosis - 13.3%. All dead patients had stage IVB HIV infection.

To determine the reliability of the differences between the rates of TB patients and TB patients, combined with HIV infection, we used the criterion of reliability (t). Significant differences were found in comparison of the clinical forms of tuberculosis in patients without HIV infection and HIV status (Table 1).

It is observed the differences between patients with regard to development of severe clinical forms of tuberculosis (fibrocavernous, disseminated, miliary, caseous pneumonia), which confirms the unfavorable clinical structure of newly diagnosed tuberculosis in HIV-infected patients.

In comparison of the social status of patients with tuberculosis (660,0 ± 8,5) and tuberculosis, combined with HIV infection, (760,0 ± 20,2), we obtained significant difference $t = 4,6$, $p < 0.001$

In most cases the combined pathology among newly diagnosed patients are observed in people of 25-34 years old(419,3 ± 23,4), among tuberculosis patients without HIV infection in the same age group (300,7 ± 8,3). Validity criterion of indicators of differences was 4,79, $p < 0,05$.

Tuberculosis patients, combined with HIV infection, are mainly detected by a visit to a doctor (50,0 ± 20,5). In comparison of this index with the index of tuberculosis patients without HIV infection (570,0 ± 8,9), we obtained significant differences $t = 8,08$, $p < 0,05$.

Conclusion. The study of the epidemiological situation of tuberculosis, combined with HIV - and the medical and social characteristics of newly diagnosed patients with combined pathology revealed the following:

- Situation of tuberculosis, combined with HIV infection - estimated as a tough situation , tends to deteriorate with a poor prognosis for its further time development;
- High growth rates of mortality of patients with tuberculosis combined with HIV - infection;
- Patients with this disorder are not socially and adopted people (drug users, alcoholics, unemployed, those systems UIN) - 75.5%;
- Combined pathology is revealed mostly by a visit to a doctor - 74.8% of the agencies of general health;
- In most cases the tuberculosis was previously diagnosed on the background of HIV infection - 91.6%, and 88.5% of cases in the later stages of it;
- Among the clinical forms of tuberculosis there is a high proportion of disseminated, miliary, fibrous-cavernous tuberculosis
- Measures against the combined pathology should be directed at early detection and prevention of tuberculosis in HIV-infected patients.

REFERENCES

1. Organization of antituberculosis aid to patients with HIV: A Manual for Physicians / OP Frolov, AV Kravchenko, AA Martynov, FA Warriors. - Moscow - Tver: OOO "Publisher" Triad ", 2007. - 120s.
2. Rakin JN The spread of HIV / AIDS - a question of strategic, economic and social-ray security of the society / JN Rakin, MY Pashkovskaya, EA Syachina / / Actual problems of HIV infection: Proceedings of the III International scientific-practical conference dedicated to 15th anniversary of the Irkutsk Oblast AIDS Center. - Irkutsk, 2004. - S. 29-32.

3. Tuberculosis in HIV-infected and AIDS patients in the Irkutsk region / EA Syachina [and others] / / Actual problems of HIV and tuberculosis: Mater. joint-tion nauchn.-Pract. Conf. infectious disease physicians and the TB. - Irkutsk, 2004. - S. 53-54.
4. Frolova OP The epidemiological situation of tuberculosis, combined with HIV in the Russian Federation / OP Frolov, IG Shinkareva, OA Novoselova / / Proceedings of III All-Russia scientific-practical conference with international participation rd "TB drug resistance of mycobacteria in patients with HIV infection." - 2009. - № 7. - S. 56-57.
5. WHO. Interim policy on collaborative TB / HIV activites. Geneva, Switzerland. (WHO/HTM/TB/2004.330).

Table 1.

Reliability of differences of clinical forms of tuberculosis patients with and without HIV infection

	Tuberculosis patients			**Tuberculosis patients with combined HIV infection**			**Validation criteria (t)**
Clinical forms of tuberculosis	абс.	Per 1000 pop.	m	абс.	Per 1000 pop.	m	
infiltrative	1945	639,0	± 8,7	201	450,6	± 23,5	7,5, (p < 0,0005)
Focal	286	94,0	± 5,3	34	76,2	± 12,5	1,3 (p < 0,05)
Fibro cavernous	194	64,0	± 4,4	47	105,4	± 14,5	2,7 (p < 0,05)
Disseminated	270	89,0	± 5,1	84	188,3	± 18,5	5,2 (p < 0,005)
Pleurisy of tubes. etiology	94	31,0	± 3,1	30	67,2	± 11,8	3,0 (p < 0,005)
Miliary	43	14,0	± 2,1	22	49,3	± 10,2	3,4 (p < 0,005)
Cheesy pneumonia	27	8,8	± 1,7	13	29,1	± 7,9	2,5 (p < 0,05)
Tuberculoma	83	27,2	± 2,9	5	11,3	± 5,0	2,8 (p < 0,05)
Cavernous	3	0,9	± 0,5	5	11,3	± 5,0	2,1 (p < 0,05)
Primary tubes. complex	6	1,9	± 0,8	–	–	–	–
TVGLU	92	30,2	± 3,1	–	–	–	–
Generalized	–	–	–	5	11,3	± 5,0	–

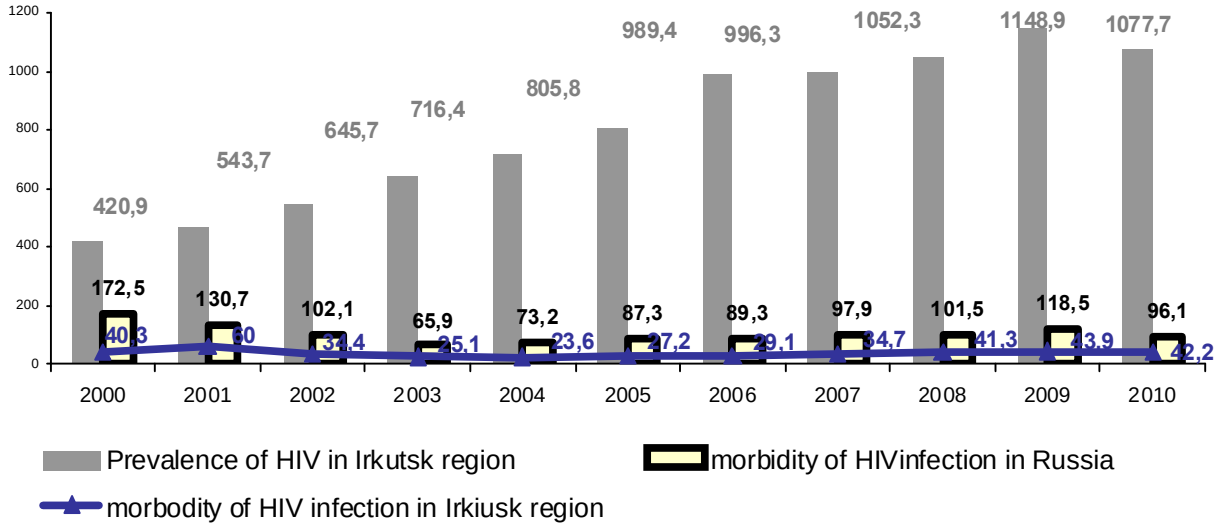

Fig. 1. Dynamics of the incidence and prevalence of HIV infection in the Irkutsk region and the Russian Federation for 2000-2010. (per 100 thousand of pop.).

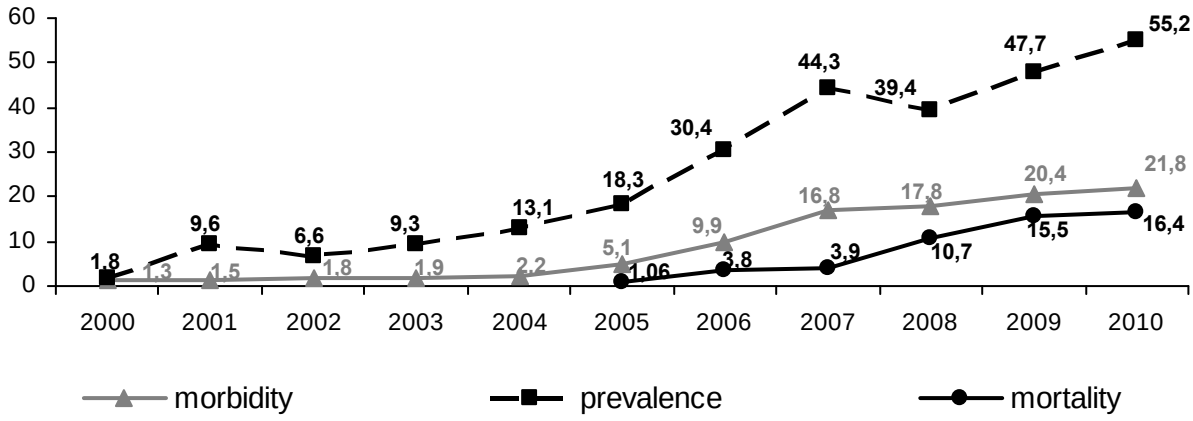

Fig. 2. The dynamics of incidence, prevalence and mortality of TB patients, combined with HIV - in the Irkutsk Region for the period 2000-2010. (per 100 thousand of population.).

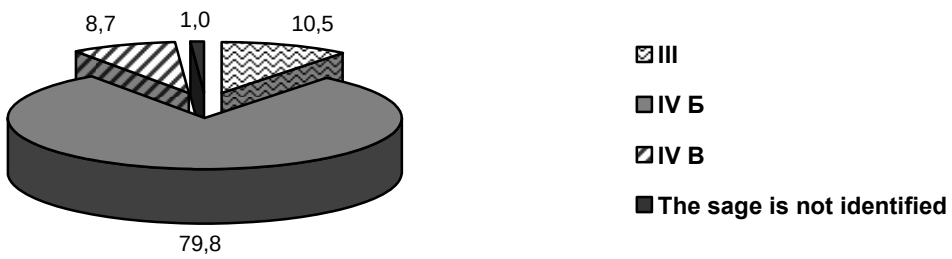

Fig. 3. The structure of newly diagnosed patients with combined pathology of the dependence on the phase of HIV - infection in 2010. (total %).

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