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lowed to elaborate effective treatment regimen of patients with diseases of the respiratory system, namely pneumonia, by the inclusion nebulized Dekasan in the complex treatment.

Thus, aerosol inhalation therapy with antimicrobial medication Dekasan is one of effective methods of treatment community acquired pneumonia, which increases the treatment efficacy and reduces the time of clinical recovery such patients.

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A STUDY OF THE PREVALENCE AND CLINICO- IMMUNOLOGICAL SPECIFIC CHARACTERISTICS OF COEXISTENCE OF TUBERCULOSIS AND HIV/AIDS

L. D. Todoriko, A. V. Boiko

Department of Phthisiology and Pulmonology of Bukovinian State Medical University

E-mail: a_v_boiko@list.ru, tel. +38 066 692-57-78

The epidemic situation with HIV-infection/AIDS remains a topical problem of nowadays both in the world and in Ukraine. Ukraine ranks first in Europe as to the rates of prevalence of HIV/AIDS. The dynamics of registering new cases of HIV-infected persons in Ukraine over the last 10 years has increased by 149,5% or 2,5 times (from 17,5 per 100 thousand of the population in 1999 to 43,2 per 100 thousand of the population in 2009). The AIDS sickness rate has increased by 246,4% or 3,5 times (from 2,8 per 100 thousand of the population in 2002 to 9,7 in 2009). The tendency of the death rate is similar, it has grown in patients with AIDS by 229,4% or 3,3 times (from 1,7 in 2002 to 5,6 per 100 thousand of the population in 2009).

The risk of the development of the tuberculosis (TB) disease in HIV-negative persons during the lifetime makes up to 10, with the highest hazard of the development of the clinical form of tuberculosis during the first two years following infecting with mycobacteria (MBT). However, in people, living with HIV/AIDS without being treated, the risk increases by 5-10% in the year after being infected, resulting in general risk during the lifetime — 50%.

To-date, there is a number of problems that are associated with comorbid pathology:

1. Incomplete coverage with antiretroviral therapy (ART) of all HIV-infected persons, requiring it.
2. Partial laboratory monitoring of the course of HIV-infection.

3. Making the diagnosis of TB in HIV-infected persons with a delay.

4. Complexity of making the diagnosis of TB in HIV-infected persons with severe immunosuppression or the diagnosis of extrapulmonary TB.

Treating tuberculosis combined with HIV-infection under modern conditions is an extremely important problem. When treating such patients, there arises a necessity of a simultaneous intake of 4-5 antituberculosis remedies and 3-4 antiretroviral ones. Owing to the application of such a chemotherapeutic regimen the quality of the patients life improves and its duration increases (except in 2011).

Thus, a study of the clinicoimmunologic characteristics of the comorbidity of HIV-infection/TB, depending on the stage of the process, the time of detecting active tuberculosis and the proposed chemotherapeutic regimens turns out to be extremely topical and promising.

Material and Methods of the Research.

The object of the research: to study the question pertaining to the prevalence and the clinicoimmunologic characteristics of the tuberculous course with underlying HIV-infection.

Research objectives:

1. To establish the prevalence of pulmonary tuberculosis against a background of HIV-infection in Bucovyna.

2. To make an analysis of the clinical course of comorbid pathology, depending on the stage of the process and the time of detecting active tuberculosis.

3. To study the clinicoimmunologic features of the course of HIV-associated tuberculosis.

4. To study the most significant criteria of the diagnostics of tuberculosis in HIV-infected persons.

Practical value of the obtained findings.

Establishing the prevalence of pulmonary tuberculosis in HIV-infected subjects will contribute to an early and timely detection of the tuberculous process it will enable to prevent the development of opportunistic infections and will be of great importance, when preventing the development of neglected, intractable forms of comorbid pathology. A study of the clinicoimmunologic characteristics of the coexistence of two serious diseases will enable to specify the consistent patterns of the pathologic process and optimize therapeutic regimens.

Research results

The studies carried out by us have demonstrated that a tendency towards an increase of the number of HIV-positive women has been observed among patients with comorbid pathology in Bucovyna over the last five years.

The share of women among the total number of the HIV-infected subjects was constantly on the rise, except 2011. Nearly 80% were women of reproductive age among them.

The greatest number of cases of tuberculosis combined with HIV-infection was observed in the age group of 25-49 years — 74%. Thus, the most capable for work and reproductive part of the population prevailed among the patients with combined pathology TB/HIV/AIDS. The greatest number of cases was identified in the age group ranging from 25 to 49 years — 74%.

Firm stabilization of the epidemic situation as to TB has been achieved both in the Chernivtsi region and in Ukraine as a whole, since a positive dynamics of a decrease of the sickness and mortality rates is observed.

Disease incidence with all forms of tuberculosis among new-onset patients (per 100 thousand of the population).

The situation with the disease incidence with HIV-infection remains complicated, although over the last two years a reduction of the number of new-onset HIV cases has been registered.

The number of patients with AIDS in the region and around Ukraine was on the rise up to 2006. owing to the introduction of a large-scale antiretroviral therapy (ART) for the first time, in 2007/09 an insignificant decrease of the number of patients with AIDS was registered.

And, although over the last few years the number of people diagnosed as having AIDS are registered approximately at one level in terms of rates per 100 thousand of the population — 0,2, 0,4, 0,8 AIDS remains a serious challenge to practical medicine.

TB, as most prevalent opportunistic disease with underlying HIV-infection, became the chief cause of a deterioration of the disease course and death rate in patients with AIDS. HIV-infection enhances the risk of active TB and, vice versa, TB exerts an unfavorable effect on the course of the HIV-infection. The dynamics of the morbidity and mortality rates from AIDS in the Chernivtsi region has negative tendencies.

Among patients with new-onset AIDS TB ranks first — 66,1%: pulmonary tuberculosis — 69,7%; extrapulmonary — 30,3%. The second place is occupied by bacterial infections, polyinfections or recurrent infections (10,8%), candidiasis of the trachea, bronchi and esophagus is placed third (5,6%), pneumocystic pneumonia ranks fourth (2,3%).

A combination of two nosologies TB and HIV/AIDS has a manifestly malignant character with a combined lesion of the internal organs and system.

The causes of a negative prognosis in case of combined TB/HIV is tuberculous intoxication (a generalized mycobacterial lesion), pulmocardiac decompensation, cerebral coma (in case of a CNS affection), less frequently fatal pulmonary, gastric, intestinal hemorrhage.

The spread of HIV-infection, on the whole brought about radical changes in relation to TB epidemics, thus:

- both reactivation and secondary TB develop more often in HIV-positive patients than in HIV-negative ones;

- it has been corroborated that the risk of TB is considerably higher already in the first year after seroconversion to HIV. It should be noted that TB may develop at any stage with any number of CD4+ lymphocytes;
- a combination of TB and HIV-infection is characterized by a variety of clinical manifestations (pulmonary and extrapulmonary lesions) with a tendency towards a generalized specific process;
- not infrequently the symptoms of TB associated with HIV-infection are nonspecific, therefore the diagnostics of TB in HIV-infected persons particularly at stage of secondary disease, is hampered;
- combined pathology has an atypical course. More often infiltrative, disseminated and extrapulmonary forms of tuberculosis occur in persons with comorbidity HIV/TB;
- severe disseminated processes in the lungs with massive bacterioexcretions predominate in patients with TB/HIV comorbidity;
- such clinical symptomatology of these two diseases creates certain difficulties of timely diagnostics of TB and HIV/AIDS;
- at later stages of HIV-infection TB has an extrapulmonary localization in 60-70% with a tendency towards a generalization of the specific process, complicating the diagnostics still more;
- morphofunctional changes, developing in the organism of patients with the active TB and HIV/AIDS are accompanied with the appearance of clinical symptomatology that occurs in case of other diseases of bacterial or viral nature;
- the roentgenological characteristics of TB in HIV-positive patients and those afflicted with AIDS are an atypical middle-inferior lobular localization in the anterior segments and a relatively not high rate of pulmonolysis that may be the cause of a misdiagnosis of pneumonia and other opportunistic respiratory infections and late diagnostics of tuberculosis;
- pulmonary tuberculosis gets complicated with underlying HIV-infection: by exudative pleuritis, hepatitis, candidiasis, polyneuritis, encephalopathy, toxic kidney, chemoresistance;
- the greater part of patients is detected passively due to an insufficient coverage of this cohort by prophylactic fluorography of the organs of the thoracic cavity that is caused by organizational difficulties associated with their social status (unemployed).

Thus, HIV associated with TB of the lungs is diagnosed tardily, requiring a long-lasting treatment. Against a background of HIV-infection tuberculosis proceeds hard, progressing rapidly, multiple organ failure develops, resulting in an unfavorable prognosis and a fatal outcome of the disease.

The peculiar features of TB in HIV-infected subjects and patients with AIDS with CD4 \geq 200 cells/ml are such pathomorphologic changes: typical tuberculous granulomas diminish and later disappear completely, the typical

cells of Pyrohov-Langhans' cells are absent in them, the number of epithelioid cells decreases the tissue reaction manifests largely with caseous necrosis with a great number of tuberculous mycobacteria (MBT) and exudative-proliferative processes.

TB of the respiratory organs proceeds after the type of the primary one: a combination of a parenchymatous lesion with a localization in the anterior segments of the lungs, joining the process of the lymphatic system and serous membranes. The clinical picture is dominated by the intoxication syndrome: prolonged fever, weight loss, weakness, hyperhydrosis. The bronchopulmonopleural syndrome (coughing, chest pain, hemoptysis, dyspnea) is evident to a lesser extent. MBT are detected less often (in 30% of the cases), especially by means of the microscopy method.

A clinical evaluation of an interaction of antituberculous or the development of mycobacterial infection due to atypical MBT is completed in patients with HIV-infection with a concentration of lymphocytes $CD4 < 50-100$ cells in 1 ml of blood serum. The clinical manifestations of HIV-associated tuberculosis often change against a background of ART. It may be connected with one of its unfavourable consequences — immune disease of rehabilitation. An increase of the number of $CD4+$ cells as a result of a successful treatment is accompanied with a restoration of a wide antigen-specific repertory of immunocompetent cells with the exception of HIV-specific response. The concept of pathogenesis in conformity with which immune activation induced by the causative agent of tuberculosis stimulates viral replication and deteriorates the prognosis of HIV-infection, determining a search of new methods of a simultaneous effect on HIV and MBT, as well as a normalization of the function of the immune system. Just because of that a study of the clinicoimmunologic characteristics of the coexistence of two serious diseases make it possible to specify the consistent patterns of the pathological process and optimize the therapeutic regimen.

In patients with comorbid pathology at different stages of HIV-infection the T-cellular type of immunodeficiency accompanied with a decrease of the number of $CD4+$ has been established. Two basic mechanisms of the death of the $CD4+$ cells at the minimum are known: owing to a direct cytotoxic action of the virus, as well as at the expense of the fact that $CD4+$ become a target for cytotoxic lymphocytes $CD8+$. A decrease of the content of $CD4+$ and $CD8+$ is indicative of a deterioration of the function of the immune response.

When comparing the parameters in patients with HIV-infection without tuberculosis with healthy persons the T-cellular type of immunodeficiency is observed at all the stages of HIV-infection. In patients with TB/HIV distinctions of the parameters are observed only at an early stage of HIV-infection that may be associated with an activation of the T-helper defence of mycobacteria. A reduction of the number of the $CD4+$ cells in patients with a combined infection is accompanied with an abatement of the activity of macrophages, resulting

in an intensification of MBT proliferation, contributing to their dissemination. In 3 months since the initiation of the immunologic efficacy of the treatment. The development of such forms of TB characterized by fibrosis and encapsulation of tuberculomas against a background of HIV-infection associated with immunodeficiency and a loss of ability of the organism to form a tuberculous granuloma with a specific cellular transformation and connective tissue changes, contributes to a generalization of the process.

Conclusions:

1. The most capable for work and reproductive part of the population prevailed among the patients with combined pathology TB/HIV/AIDS. The greatest number of cases was identified in the age group ranging from 25 to 49 years — 74%.

2. The development of active TB in HIV-infected persons is accompanied with an elevation, whereas in the process of its treatment, on the contrary, a decrease of the concentration of the blood viral RNA. The ingress of the virus into the blood is due to an activation of lymphocytes that is induced by MBT. Therefore, the clinical pictures of TB and HIV-infection at early stages are identical.

3. TB may develop at any stage with any number of CD4+ lymphocytes.

4. When comparing the parameters in patients with HIV-infection without tuberculosis with healthy persons the T-cellular type of immunodeficiency is observed at all the stages of HIV-infection. In patients with TB/HIV distinctions of the parameters are observed only at an early stage of HIV-infection that may be associated with an activation of the T-helper defence of mycobacteria. A reduction of the number of the CD4+ cells in patients with a combined infection is accompanied with a abatement of the activity of macrophages, resulting in an intensification of MBT proliferation, contributing to their dissemination.

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IMMUNITY CONDITION AND EXPERIENCE OF USING CAGOCEL FOR ADULTS-PATIENTS WITH FIRST DIAGNOSED INFILTRATIVE PULMONARY TUBERCULOSIS

Y. A. Varchenko

Bogomolets National Medical University, Kyiv

E-mail: petrenko@bk.ru, tel. +38 044 430-46-20

This thesis studies immune system of 30 patients with infiltrative first diagnosed pulmonary tuberculosis (IFDTB) and effect of immunocorrection method