The Course of Tuberculosis in Elderly Patients with Comorbid Background

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ABSTRACT

Pulmonary tuberculosis often develops against the background of diseases that lead to dysfunction of organs and systems, and in a joint course, they have a mutually aggravating interaction. This complicates the timely diagnosis of tuberculosis, and in the treatment entails forced polypharmacy, the development of drug complications and failures in treatment.

Keywords: comorbidity, underlying diseases, pulmonary tuberculosis, drug complications

Introduction

The term comorbidity was first proposed by A.R. Feinstein in 1970 [1], denoting the coexistence of two and/or more syndromes or diseases in one patient, coinciding in time. At the same time, mosaicity, blurring, interweaving of complaints and symptoms make the process of diagnosing diseases and treating patients complex, difficult and often non-standard. All this fully applies to a patient with pulmonary tuberculosis (PT). Each background disease introduces its own specifics during the tuberculous process, while the diseases have an aggravating effect, which makes tuberculosis unrecognizable for a long time, late diagnosed.

Materials And Methods

Among the causes of progression, negative dynamics of the tuberculous process, ineffectiveness of treatment of tuberculosis patients, along with evasion from treatment and non-systematic use of anti-tuberculosis drugs (ATPs), drug resistance, concomitant, background diseases (BD), their exacerbations during the period receiving ATP. The frequency of FZ in patients with tuberculosis varies widely from 1–5 to 75–87%. The wide range of incidence of adverse reactions to anti-TB drugs is explained by the difference in observed patients by age, gender, concomitant diseases, and treatment methods [3]. Often several BD are registered, while 1–2 of them are progressive, acquiring the role of the main process.

The structure of BD is varied. Tuberculosis often develops against the background of alcoholism, diseases of the broncho-pulmonary, cardiovascular system, gastrointestinal tract, in people who take corticosteroids for a long time, who are HIV-infected [1, 5].

Under observation were 732 patients with newly established PT - infiltrative or disseminated. During the examination of patients, the following diseases were identified and confirmed. Diabetes mellitus (DM) in 112 patients (group I), of which 79 had a severe course, 31 had a moderate course, and 2 had a mild course. Chronic opisthorchiasis (CW, group II) was diagnosed in 94 patients, of which 62 had pronounced manifestations of dysfunction of the hepatobiliary system, 32 had a latent disease. 297 elderly and senile patients with a number of diseases - cardiovascular, bronchopulmonary systems, gastrointestinal

tract - group III. In the control group there were 92 patients with tuberculosis without concomitant diseases - group IV. The diagnosis of pulmonary tuberculosis and BD was confirmed in all cases by traditional clinical and anamnestic, laboratory and instrumental methods. Groups I–II and IV were comparable in terms of gender, age, and clinical forms of tuberculosis. Group III was dominated by women. Statistical processing was carried out mainly using the nonparametric Kolmogorov-Smirnov test, as well as simple and paired Student's tests. Differences were considered significant at $p < 0.05$.

Results And Discussion

In all 92 (100%) patients of the control group IV, PT was detected during preventive examinations, the specific process was limited, localized within 1–2 segments. The absence of symptoms of intoxication, the absence of pathological changes in other internal organs allowed the majority of patients (90.2%) of this group to undergo a course of treatment without drug complications. Out of 9 patients with adverse reactions to ATP, 7 had peripheral blood eosinophilia within 15%, 2 patients periodically observed skin-allergic syndrome - hyperemia, peeling and mild itching appeared on the skin of the face. Antiallergic therapy made it possible to complete the course of inpatient treatment for all patients.

In patients with pulmonary tuberculosis, whose BD had clinical manifestations and were often leading, the manifestations of tuberculosis were masked, which made its early diagnosis difficult. At the same time, tuberculous lesion of the lungs was widespread, polysegmental, with the presence of cavity formations of different sizes, foci of bronchogenic screening and bacterial excretion. Thus, in all 79 (100%) PT patients with severe DM, complications of diabetes were observed 9–10 years before the detection of tuberculosis. All patients had signs of diabetic nephro-, retino- and neuropathy, hepatomegaly, diabetic encephalopathy, coronary heart disease (CHD). In 31 patients (100%) with moderate DM, initial signs of diabetic nephro- and retinopathy were observed. Regardless of the manifestations of DM, pulmonary tuberculosis was detected already in the presence of severe symptoms of intoxication, as well as local symptoms - cough, shortness of breath. For a long time - up to a year - the deterioration in the condition of patients was explained by decompensation of DM. Patients were forced to constantly take 3-4 drugs to stop the manifestations of diabetes.

In patients of older age groups, a difference was found in the incidence of adverse reactions to ATP: in elderly patients, AE was observed in 45.4% of cases, in senile patients - in 68.3% ($p < 0.05$). Men were more likely to experience drug complications than women– in 81.9 and 34.5% of cases, respectively ($p < 0.05$), in older men less often than in senile men.

The nature of drug complications was different in patients with tuberculosis with different BD. In patients with severe DM, in 97.1% of cases, nephro-, neuro-, cardio-, and hepatotoxic reactions developing to isoniazid, streptomycin, rifampicin, pyrazinamide, ethionamide were diagnosed. The basis of clinical manifestations of toxic reactions were diabetic organopathies and ATP organotropism.

Of the 9 patients with moderate DM, 3 were allergic, 6 were combined, developed on streptomycin and isoniazid. In their anamnesis, they had indications of allergies, including streptomycin, kanamycin, which they had previously received.

Of the total number of patients with concomitant CO (94), toxic reactions were observed in 17.0% of cases, allergic reactions in 6.4%, but combined reactions to ATP prevailed (28.7%, $p < 0.03$). The manifestations of toxic reactions in the majority (11 out of 16 patients) were drug-induced liver damage, oto- and neurotoxic reactions, in 5 - dyspepsia. Hepatotoxic reactions developed to pyrazinamide and rifampicin, ototoxic reactions to streptomycin, and neurotoxic reactions to isoniazid. Dyspepsia has been associated with pyrazinamide and ethionamide. Combined reactions developed to pyrazinamide, as well as to combinations: streptomycin - rifampicin, streptomycin -

pyrazinamide and manifested skin-allergic, dyspeptic syndromes and ototoxic reactions. Out of 32 patients with pulmonary tuberculosis and latent chronic opisthorchiasis, AR was observed only in 9 people (28.1%), 6 of them had allergic reactions, 3 had combined reactions that developed on streptomycin. It can be assumed that the high allergenic effect inherent in streptomycin manifests itself in patients against the background of helminth sensitization of the body.

Conclusion

Thus, the problem of comorbidity in the clinic of pulmonary tuberculosis requires in-depth study and includes the issues of diagnosing tuberculosis, the awareness of the phthisiatrician in the clinic of internal medicine, the need to organize the process of joint management, treatment, monitoring of patients with tuberculosis with doctors of other specialties, including including clinical pharmacologists.

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