

Dynamics of Carbohydrate Metabolism Indices during the Treatment of Pulmonary Tuberculosis Patients with the Use of Pathogenetic Therapy

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Conflict of interests: none

OBJECTIVE. To assess the dynamics of carbohydrate metabolism indices during the treatment of pulmonary tuberculosis patients with the use of pathogenetic therapy

MATERIALS AND METHODS. We examined 40 patients with newly diagnosed destructive pulmonary tuberculosis with bilateral infiltrative changes and massive mycobacteria excretion. Exclusion criteria were: HIV infection/AIDS, diabetes mellitus, chronic hepatitis, extrapulmonary tuberculosis and pulmonary tuberculosis without destruction and without bacterial excretion. Standardized four-component anti-TB treatment regimen was prescribed to all patients. The subjects were randomly distributed between two groups of 20 people. The treatment regimen for patients of group 2 was supplemented with a 10-day course of intravenous infusion of xylitol with a volume of 400 ml once a day. An oral glucose tolerance test (OGTT) was performed, fasting insulin levels were determined, the insulin resistance index (HOMA-IR) and body mass index (BMI) were calculated, and clinical manifestations of intoxication were evaluated. For statistical data processing, the Statistica for Windows version 13.2 general-purpose data processing software package was used.

DOI: 10.32902/2663-0338-2019-2-21-25

■ ОРИГІНАЛЬНЕ ДОСЛІДЖЕННЯ

RESULTS AND DISCUSSION. At the beginning of treatment, patients of both groups had complaints typical for intoxication syndrome and signs of carbohydrate metabolism disorders in the form of the development of insulin resistance. The median value of the HOMA-IR index in group 1 was 3.03, and in group 2 it was 3.36. During the treatment, in group 2, whose patients received xylitol, a decrease in the average term of relief of intoxication symptoms was observed compared with group 1 (7 ± 2 days vs 11 ± 3 days) ($p < 0.05$). In group 2 the median of insulin level decreased at a statistically significant level ($p < 0.05$) (from 16.5 mcU/mL to 11.4 mcU/mL), and the insulin resistance index HOMA-IR decreased from 3.36 to 2.0, which allows us to suppose the positive effect of xylitol on the carbohydrate metabolism of patients with infiltrative pulmonary tuberculosis with destructive changes and mycobacteria excretion.

CONCLUSIONS. Based on the obtained data, it can be concluded that xylitol has a positive modeling effect on the dynamics of carbohydrate metabolism in patients with destructive pulmonary tuberculosis with bacterial excretion.

KEY WORDS: pulmonary tuberculosis, insulin, fasting blood glucose, HOMA-IR, xylitol.