

Supporting therapy of natural zeolites at patients with lymphoproliferative diseases

Anna S. Chernyshova, Lev E. Panin

Institute of Biochemistry, Siberian Division, Russian Academy of Medical Science, Novosibirsk, Russia

Correspondence: Anna S. Chernyshova, Research Institute of Biochemistry, Siberian Branch of the Russian Academy of Medical Sciences, Timakov str., 2, Novosibirsk, 630117, Russian Federation,
E-mail: ibchsoramn.ru

Abstract

The aim of this study was to investigate liver function in patients with lymphoproliferative diseases who had received zeolites along with polychemotherapy.

Materials and methods: Research consisted of 68 patients with T- and B-cells non-Hodgkin's lymphomas. All patients received a polychemotherapy course of cytostatic drugs with hepatotoxic, nephrotoxic, and cardiotoxic side effects. The investigative group (IG) of 28 patients received natural zeolites between chemotherapy courses as supporting therapy. The comparison group (CG)—consisting of 40 patients of identical sex, age, and IPI—received treatment according to standard protocol.

Results: After the polychemotherapy course 6 patients (8.8%) were found to have cytotoxicity syndrome confirmed by an increase in alanine aminotransferase (ALT) activity. Also, the median of ALT activity in IG patients was 28.3 ed/l (21.3; 47.8), and 29.7 ed/l (22.3; 44.4) in CG patients. It was noticed later that ALT activity decreased by 18.5 ed/l (11.1; 25.3) ($p=0.021$) during the zeolite course, in contrast with ALT activity of 29.95 ed/l (21.2; 41.8) ($p=0.0004$) in the CG. After the introduction of cytostatic medication the mean value of the whole protein content in the IG and the CG was 71.38 ± 1.09 and 71.95 ± 1.42 g/l respectively. After the zeolite treatment the concentration of serum protein in the IG increased up to 73.88 ± 0.82 g/l ($p=0.026$), which was higher than in the CG (71.00 ± 0.96 g/l, $p=0.033$). The fibrinogen content—after the zeolites course—in the IG increased up to 3.6 g/l ($p=0.048$), which is lower than that in the CG ($p=0.008$) by 0.84 g/l.

Conclusion: The use of natural zeolites noticeably reduces the hepatotoxicity of chemotherapeutic drugs used for the treatment of lymphoproliferative diseases, allowing the utilization of zeolites as hepatoprotectors.

Keywords: non-Hodgkin's lymphoma, supporting therapy, liver, natural zeolites, polychemotherapy