Effect of a Mycoton Preparation on Biochemical and Immunological Parameters of a Syndrome of Endogenic Intoxication and Secondary Immunoodeficiency

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The syndrome of endogenic intoxication leads the clinical and pathological manifestations of many diseases. Its development results in the accumulation of an intermediate and final metabolic products, decompensation of regulation systems, and formation of effector components at toxic levels. These changes cause depression of humoral and cell links of immunodefense that results in development of secondary immunodeficiency.

Therefore, a search for optimum detoxification methods is extremely relevant for correction of the different forms of immune system imbalance. One effective way to accomplish detoxification is by the enteroadsorption method. This method is based on linkage and removal of endogenic and exogenic substances, supermolecular structures, and cells from the gastrointestinal channel. Different enteroadsorbents are designed. The natural complex preparations are especially suitable for such purposes.

The new preparation Mycoton has high sorption parameters. Mycoton is a complex of natural biopolymers that is obtained from cell walls of Higher Basidiomycetes; chitin, β-1,3 and β-1,6-glucans and melanins are part of its composition. Because of this composition Mycoton shows sorption, antioxidant, and immunomodulating properties simultaneously.

The effect of Mycoton in vitro on parameters of the immune status of peripheral blood cells of 20 donors was studied. The effects of Mycoton on phagocytic cells, containing CD3+, CD4+, CD8+, CD19+; proliferative activity of lymphocytes, and interleukin-1 (IL-1) production were marked.

In vivo the influence of Mycoton on biochemical and immunological parameters of 30 patients with chronic hepatitis with a syndrome of endogenic intoxication and secondary immunodeficiency was studied.

The research established that Mycoton increased the quantities of phagocytic cells that was not accompanied by changes in their absorption activity. As a result of the action of Mycoton, the IL-1 content in a culture medium was augmented from 158 ± 6.4 to 188.2 ± 6.5 pg/ml (p < 0.05). In the presence of Mycoton the increase of proliferation of lymphocytes on a T-cell-like mitogen, PhGA, was marked. Changes were not detected in B-cell reactions on the mitogen PWM. In the presence of this preparation the number of T cells increased markedly, from 30.9 ± 0.1 to 39.6 ± 0.2 (p < 0.01). In the presence of Mycoton the number of T cells with a high density of receptors for 6 to 10 erythrocytes is augmented 2.7 times (p < 0.01).

In clinical tests of Mycoton for patients with chronic hepatitis the level of bilirubin decreased to 36.8%, ALT to 25%, AST to 43% (p < 0.01), and thymol test to 33% (p < 0.05) compared with outcomes of conventional therapy. Thus there is an increase of the level of seralbumin, equalization of the ratio of globulin fractions, and near-normalization of the transport function of albumin.

The positive changes in immunological pa-
rameters show that after Mycoton therapy the level of circulating immune complexes decreased by two times and the immunoglobulin A, G, and M contents were normalized. There a 35% increase of T lymphocytes (CD3+ and CD4+), and the cytophagocyte number was augmented by 36% ($p < 0.05$). Production of IL-1 was normalized.

Thus, analysis of the effects of Mycoton on different parameters makes it possible to conclude that this new treatment of virus diseases, for example, virus hepatitis, is effective.