

Functional conditions of donors lymphocytes under the influence of the antiviral preparation izatizon

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Nowadays there is a lot of information about immunomodulating effect of the unique dissoluble form of methyl-izatihn β -tiosemicarbazone – izatizon. It stimulates maturation of T-cells, activates metabolic function of macrophages, strengthens lysozyme activity of blood serum, increases cytotoxicity of natural killers.[1,2] Taking into consideration distinctly expressed antiviral qualities of izatizon against a diversity of DNA- and RNA- containing viruses [3-6], we can hope that given preparation will be widely adopted in practice.

The success of immune correction depends on primordial condition of immune system and possible reaction on the given immunomodulators. Lymphocytes sensitivity determination is important for the prediction of the effectiveness of curing when immune correcting preparations are used. It is well-known that lymphocytes are one of the central part of immune system, they play an important role in the immune reactions including antiviral and antitumor ones. They also participate in the preservation of homeostasis [7]. An ability of immune cells to proliferate in response to activation stimulus is extremely important for the formation of valuable immune reply. So, the reaction of blast-cell transformation of lymphocytes defines an ability of T-cells and subsidiary cells to activation and cooperation.

Study of influence of izatizon on the proliferating activity of human lymphocytes was the purpose of the research.

Separation of lymphocytes from peripheral blood of donors carried out according to the method [8]. Determination of proliferating lymphocyte activity conducted according to the method [9].

During the reaction the dependence of blast-cell transformation on time of incubation (from 1-2 hours to 5 days) was researched and the influence of different concentrations of given preparation as well. It is worth mentioning that active draughts of izatizon in 5 - 20 times lower than toxic ones.

Given information showed us that the incubation of donors' lymphocytes with the preparation during 1-2 hours did not cause the blast-cell transformation of lymphocytes.

Exposure more than 4 hours, as a rule, was characterized by stimulation of reaction of the blast-cell transformation *in vitro*. A draught-depending reply of lymphocytes concerning izatizon was exhibited. Table 1 displays that in the presence of izatizon in concentration 1 mcg/ml and 10 mcg/ml a proliferating activity of lymphocytes almost in 3 times enhances in culture and it in 1,6 times exceeds a reply of lymphocytes on PHA.

Table 1. Activity of lymphocyte donors proliferation during 12-hour incubation with izatizon (inclusion (3H)-timidin, imp/min)

Preparation concentration mcg/ml	izatizon imp/min	Stimulation index	PHA 5mcg/ml imp/min	Stimulation index
1,0	12172±2486*	2,93	7418±1703	1,8
10,0	12454±2140*	3,02		

100,0	5799±3284	1,83		
Control	4124±1037			

Notice: * P <0,05

Such dependence wasn't noted at all donors yet. In concentration 10 mcg/ml izatizon stimulates proliferating activity of peripheral blood lymphocytes of 10 donors from 16 inspected, and of 8 donors – in concentration 1 mcg/ml and of 3 – in concentration 0,1mcg/ml.

Conclusion:

1. The results of above described researches show that there is an individual sensitivity of peripheral blood donors' lymphocytes concerning izatizon.
2. This research has showed the possibility of izatizon use as a lymphocyte functional activity modulator.

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