The pathogenetic role of disturbances in interstitial transport and lymphatic drainage of tissues in the formation of chronic processes on an example of the action of Tuberculinum and Medorrhinum

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SUMMARY

In histophysiological experiments on white SHK mice under anesthesia, the effect of drugs with different mechanisms of action in small and ultra-low doses on the lymphatic drainage of the mesentery was studied. It has been shown that the same drug can have different effects, up to the opposite, depending on the degree of dilution.

Key words: lymphatic drainage, interstitial transport, chronic processes, Tuberculinum, Medorrhinum, small and ultra-low doses, dynamized drugs.

RESUME

In the histophysiological experiments on white SHK line mices under anesthesia we studied the influence of drugs with different mechanisms of action in low and ultra low doses on the lymphatic drainage of the mesentery. Substances of biological origin (Tuberculinum, Medorrhinum) were used. It is shown that one and the same product can have a different effect, until the opposite, depending on the degree of dilution.

Keywords: lymphatic drainage, interstitsialny transport, chronic processes, small and super small doses, Tuberculinum, Medorrhinum.

Long-term exposure to small doses of chemical, biological and physical factors that add up and reinforce each other's action leads to profound disturbances in the internal environment of the body [5]. A number of authors have shown that inhibition of interstitial transport and lymphatic drainage correlates with the development of endotoxicosis, the aging process and changes in all links of the microvasculature [2]. The suppression of interstitial humoral tissue transport is one of the indicators of the toxic load on the body [6].

In this work, studies have been carried out to study the effect on activity

lymphatic drainage of tissues and the state of interstitial humoral transport of drugs with antigenic activity in high and ultrahigh dilutions ($10^{\sim 12}$, 10^{-60}, 10^{-400}, 10^{-2000}) Tuberculinum and Medorrhinum.

We used ready-made dynamized forms of preparations. Acute experiments were carried out on healthy anesthetized mice, female SHK line, weighing 25–30 g. A generally accepted technique was used to study the microcirculation of the mesentery of the small intestine by vital microscopy in transmitted light (Toporova S.G., 1992). Determined the time of removal of the lymphotropic label (Evans blau "Merc") in minutes. Study drugs were given to miceper os in water solution once a day for three days.

Research results show that when $10^{\sim 12}$ the degree of dilution in both Tuberculinum and Medorrhinum has the most pronounced stimulating effect on LD and IHT. With an increase in the degree of dilution, a decrease in the effect of stimulation is noted. And with the action of drugs Tuberculinum and Medorrhinum at a dilution of 10^{-2000} pronounced inhibition of interstitial humoral transport and lymphatic drainage is manifested.

Discussion

As noted above, the drugs Medorrhinum and Tuberculinum were taken for research in connection with their antigenic origin. Tuberculinum is Koch's tuberculin, a glycerol extract from a pure culture of tuberculous bacteria [3, 4]. The causative agents of tuberculosis themselves do not emit any exotoxin. Pathomorphological and functional changes in the body are associated with direct damage to the pericellular space, the lymphatic system and the phagocytic ability of macrophages [4]. Incomplete phagocytosis and the death of leukocytes leads to the entry of a large number of mediators and proteolytic enzymes into the intercellular space, which damage the adjacent tissues. The protein components of mycobacteria, which include tuberculin, cause a cellular response of HRT (delayed-type hypersensitivity) with the formation of granulomas. With sufficient resistance of the organism, non-sterile infectious immunity develops. The presence of a tuberculosis infection leads to changes in the immune system of the macroorganism. Secondary immunodeficiency syndrome (in terms of immunological parameters) is formed in 98% of patients with a specific infection. With the development of tuberculosis, inflammatory changes in tissues are formed, caused by the process of complex interaction of mycobacterium tuberculosis with the body of a sick person and the peculiarities of immune factors of homeostasis [1, 6]. The remaining tuberculous mycobacteria constantly maintain sensitization of the body and, possibly, play a leading role in the development of chronic intoxication and disruption of humoral transport. Ltransformation of Mycobacterium tuberculosis has not yet been sufficiently studied, as well as the pathogenetic role of L-forms of Mycobacterium tuberculosis [2, 7]. Medorrhinum is prepared from infected tissues and gonorrheal secretions. A characteristic feature of a gonococcal infection is an inflammatory process with pronounced destruction. The antigenic activity of the causative agent of gonorrhea is associated with

pili determinants and surface proteins. The main factors of pathogenicity are pili, gonorrheal endotoxin, IgAI protease that breaks down IgA. Gonococci quickly fix on the surface of epithelial cells using pili, and then penetrate deep into the cells, into the intercellular clefts and subepithelial space, causing destruction of the epithelium and an inflammatory reaction.

Table 1

Time of elimination of lymphotropic dye from the mesentery of the small intestine under the effects of Tuberculinum and Medorrhinum in different dilutions

Препараты	**M ± m**	**P≤**
Контроль	41,9 ± 1,2	0,001
Tuberculinum 10^{-12}	28 ± 3,9	0,001
Tuberculin 10^{-60}	30,6 ± 3,1	0,001
Tuberculin 10^{-400}	41,3 ± 5	> 0,05
Tuberculin 10^{-2000}	47,5 ± 4,7	0,01
Medorhynum 10^{-12}	30,9 ± 1,8	0,001
Medorhynum 10^{-60}	36,9 ± 1,5	0,001
Medorhynum 10^{-400}	45,5 ± 2,2	> 0,05
Medorhynum 10^{-2000}	49,7 ± 5,8	0,001

The death of microbial cells is accompanied by the release of endotoxin, which causes general intoxication, causes pronounced degenerative and destructive changes in tissues, the development of adhesive processes. It was noted that the chronic inflammatory process proceeds against the background of a high level of intoxication and inhibition of HT. The effectiveness of stimulation of HT and LD in the treatment of sexually transmitted diseases (including syphilis, gonorrhea, trichomoniasis) is clinically shown in the works of Isaeva M.S. (1997), Batkaeva E.A. (1997) and others [5]. The results of this work show the stimulating effect of drugs in low dilutions on the state of interstitial humoral transport and lymphatic drainage. Preparations with antigenic origin of Tuberculinum and Medorrhinum in high and ultra-high dilutions cause inhibition of interstitial humoral transport and lymphatic drainage, which corresponds to the state of chronic inflammation and toxic tissue damage. Disruption of humoral transport is possibly the main factor in the chronicity of the infectious process, or an infectious agent may be the trigger for violations of fluid transport in the pericellular space.

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