

INFLUENCE OF THE SEA-SIDE RESORT FACTORS UPON FIBRINOLYTIC ACTIVITY OF PATIENTS WITH HYPERTENSION

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The equilibrium between clot and anticlot system of the blood is dependant most of all on the anticlot system. Therefore, the investigation of the changes of fibrinolytic activity (FA) in blood is very important for the thallassotherapeutical practice, specially for the treatment of patients with hypertension. Certain importance provide the fibrin-degradating products (FDP) and some of them (X and Y) exert a competitive inhibiting effect upon coagulation (clot-formation) and it makes them practically anticoagulators. Therefore, the object of our present study is to investigate the changes of FA and FDP in patients with hypertension influenced by thallassotherapeutical procedures.

There are some bibliographical data of early changes of the thrombotic features of blood in patients with hypertension; together with some our results of the influence of thallassotherapy upon haemocoagulation we directed our present investigation to study: 1) The influence of a dose-optimum helio-procedure (3 heliobioses in subcomfort zone) in dynamics upon the changes of FA and FDP in hypertension patients (36 patients — I and II stage). 2) The influence of a single sea-bath in a dose of middle and heavy cold-bardening (thermoloss 35—45 kcal/m² from body surface) upon the changes of FA and FDP in hypertension patients (25 patients — I stage). 3) The analysis of the normal values of these indexes (FA and FDP) in practically healthy people.

Methods

The investigations were performed in the summer on the beach of the Clinic of Physiotherapy and Rehabilitation, Varna city. Blood-samples were taken from the patients before and after the dose-helioexposition and sea-bath.

FA was studied by using the method of Fearnley (3): lysis of a total blood-clot from diluted 1:10 blood. FDP were quantitatively determined by the immunological method of Mersky (2). The results were analysed statistically by variation method.

Results and discussion

The normal values of FDP in the control group are 3,57 micrograms/ml; Fearnley test is 6—8 hours. Table 1 shows the results of our experiments with helioexposition. It is obvious that the level of FDP is higher (statistically significant) for I and II stage of the disease, whereas the time of lysis of the clot is shorter considerably for the patients with hypertension of I stage and statistically unreliable for the patients with hypertension of II stage.

Patients with I stage have higher level of FDP in 85% of the cases and shorter fibrinolytic test in 65%. Patients with II stage have higher level of FDP in 62% and shorter fibrinolytic test in 50%.

Table 1

First degree — 20 patients					
FA			FDP		
Before $\bar{x} \pm \sigma$	after $\bar{x} \pm \sigma$	P	before $\bar{x} \pm \sigma$	after $\bar{x} \pm \sigma$	P
6,14 ± 0,21	5,10 ± 0,19	<0,05	3,06 ± 0,14	15,7 ± 0,75	<0,01
Second degree — 16 patients					
5,89 ± 0,85	5,55 ± 0,86	<0,05	4,27 ± 0,70	12,34 ± 1,9	<0,05

These indexes are more expressed after the application of a single sea-bath (table 2). After bath the level of FDP is double-increased (statistically

Table 2

First degree — 25 patients					
FA			FDP		
Before $\bar{x} \pm \sigma$	after $\bar{x} \pm \sigma$	P	before $\bar{x} \pm \sigma$	after $\bar{x} \pm \sigma$	P
7,26 ± 0,73	6,30 ± 0,67	<0,001	6,88 ± 0,52	12,3 ± 0,38	<0,001

significant) and the time for lysis is with 56 min shorter (statistically significant too). The data show the various influence of the applied procedures upon the level of the studied indexes and the differently expressed compensative possibilities of the anticlot (anticoagulative) system in both stages of the disease. The patients with II stage of hypertension show a delayed fibrinolytic response to the helioexposition. The sea-baths change the fibrinolytic activity more considerably. The activity compensates (according to our previous study) the corresponding activation of procoagulators as a result of helioexposition. It is very probably that the cold-stress, sympaticoadrenal stimulation, temporary local hypoxia of tissues and activated muscle functions are the reasons of liberation of plasminogen from vessel-wall endothelium (4), which leads to a more expressed destruction of fibrinogen to its final fragments and stronger fibrinolytic activity. From the other hand, the heparin activation, according to our investigations (5), is caused by the sea-baths and is also capable of activating of the fibrinolytic activity by setting of already known mechanisms (4).

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ВЛИЯНИЕ МОРСКИХ КУРОРТНЫХ ФАКТОРОВ НА ФИБРИНОЛИТИЧЕСКУЮ АКТИВНОСТЬ У БОЛЬНЫХ ГИПЕРТОНИЧЕСКОЙ БОЛЕЗНЬЮ

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РЕЗЮМЕ

Исследовано влияние некоторых морских лечебных процедур на фибролитическую активность у больных гипертонической болезнью первой и второй степеней. Определенные индексы подвергаются анализу. Сравняются влияние гелиоэкспозиции и морских ванн при дозированном и систематическом применении. Исследования проведены в динамике и статистически обработаны.