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ПРИМЕНЕНИЕ ОЗОНА В ЛЕЧЕНИИ ГНОЙНО-ВОСПАЛИТЕЛЬНЫХ ОСЛОЖНЕНИЙ БОЛЬНЫХ САХАРНЫМ ДИАБЕТОМ

Резюме. *Применение озонотерапии в комплексном лечении больных сахарным диабетом с гнойно-воспалительными процесами, оказывает выраженное лечебное действие и предотвращает развитие рецидива и осложнений заболевания, что способствует значительному улучшению непосредственных и отдаленных результатов лечения данной патологии.*

Ключевые слова: сахарный диабет, гнойно-воспалительные осложнения, озонотерапия.

THE USE OF OZONE IN COMPLEX TREATMENT OF PYOINFLAMMATORY COMPLICATIONS IN PATIENTS WITH DIABETES MELLITUS

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Abstract. *In a complex treatment ozone application of patients with diabetes complicated by pyoinflammatory processes has an apparent therapeutic effect and prevents the devel-*

opment of the relapse and complications of the disease promoting significant improvements of direct and remote results of treatment of the given pathology.

Key words: diabetes mellitus, pyoinflammatory processes, lipid peroxydation, ozonotherapy.

Introduction. Scientific data analysis shows a steady increase in the number of patients with diabetes, and in developed countries reaches more than 6% of the population [2, 5].

From the surgical point of view, topicality of this problem is first of all stipulated by the fact that purulent-necrotic processes develop in more than 30-70% diabetic patients and 50% of hospitalized patients need surgical care concerning these complications [1, 3, 4].

With regard of to the mentioned facts, it becomes evident that the effective methods of complex treatment of purulent processes in diabetic patients should be searched in order to introduce into clinical practice the effective methods of conservative treatment and new ways of reparative processes activation. For this purpose ozonotherapy has recently become widely used.

The aim of research to improve the treatment results of pyoinflammatory processes in patients with diabetes through the use of intravenous ozonotherapy.

Material and method. 124 diabetic patients with pyoinflammatory complications have been examined. The main group – 53 (42.7%) patients, along with comprehensive treatment underwent intravenous ozone therapy. The control group -71 (57.2%) patients were treated by conventional methods.

Intravenous administration of ozonized physiological solution was performed in all patients of the main group, along with traditional therapy, similar in composition to the control group of patients [6]. Coagulogram indices, lipid peroxidation, parameters were determined.

Discussion of results.

Table 1

Coagulogram characteristics in diabetic mellitus patients with pyoinflammatory complications using ozonotherapy

Indices	Main group			Control group		
	On admission	During treatment	At discharge	On admission	During treatment	At discharge
Prothrombin index (%)	89,96±1,3	94,50±1,6	90,73 ±1,2	94,39±1,2	81,96 ±1,9	87,36 ±1,8
Recalcification time (s)	105 ±0,9	100±0,7	98±1,1	110±0,8	105±1,1	99±0,7
Thrombin time (s)	19,30±0,4	19,43±0,6	19,50 ±0,4	19,35±0,6	19,40 ±0,3	19,43 ±0,3
Hematocrit (%)	36,84±0,2	32,29±0,1	32,75 ±0,3	40,47±1,1	38,15 ±0,2	37,81 ±0,3
Fibrinogen (g/l)	6,77±0,2	5,90±0,1	5,70 ±0,1	6,41±0,1	4,87±0,2	4,12 ±0,1
P	>0,05	≤0,001	≤0,001	>0,05	≤0,001	≤0,001

Note: P – index of statistical significance

Table 2

Characteristics of lipid peroxidation, AOP, OPM parameters in diabetic patients with pyoinflammatory complications

Indices	Main group			Control group		
	On admission	During treatment	At discharge	On admission	During treatment	At discharge
Ceruloplasmin (E/g of plasm)	5,2±0,10	5,1±0,30	5,1±0,10	5,3±0,30	5,5±0,7	5,5±0,50
Malonic aldehyde (micromole/l of serum)	0,23±0,10	0,24±0,05	0,20±0,10	0,22±0,10	0,23±0,10	0,19±0,10
Degree of oxidative modification of proteins (ΔE/ml of plasm)	2,2±0,05	2,2±0,04	2,0±0,06	1,5±0,05	1,4±0,03	1,6±0,04

According to some authors, in diabetic patients with pyoinflammatory lesion of soft tissues the level of lipid peroxidation end product – malonic aldehyde in the wound increases. Inhibition of AOP manifests by a significant decrease in tissue retinol and tocopherol in particular, as well as decreased activity of glutathione reductase. The most effective treatment methods in terms of lipid peroxidation stabilization are those including ultraviolet blood irradiation, low-intensity laser irradiation and sorbents application [2, 6].

Hypercoagulation syndrome vith microthromboses development and whieh is manifested by is pathognomonic an increased thrombocytes aggregation activity. Combined with decreased anticoagulant and fibrinolytic blood activity it stipulates the widespread use of reocorrectors together with anticoagulants and antiaggregants [6].

The results of the coagulogram study in diabetic patients with pyoinflammatory complications (Table 1) showed that in the control group of patients on admission, during the treatment and at discharge significant changes were not detected concerning to the prothrombin index, recalcification time, thrombin time, hematocrit, and fibrinogen. In the context of ozone therapy application in the main group of patients on admission, during the treatment and at discharge the significant coagulogram parameters changes were not revealed.

These changes against a background of typical positive clinical effects of ozone therapy can be regarded as a favourable signs of coagulogram parameters for the application of this method of treatment in diabetic patients with pyoinflammatory complications.

The analysis of lipid peroxidation indices, AOP, OPM parameters in diabetic patients with pyoinflammatory complications (Table 2) showed that in the control group of patients on admission, during the treatment and at discharge significant changes were not detected as to the activity of AOP factor – ceruloplasmin, lipid peroxidation product – malonic aldehyde and OPM. In the context of ozone therapy application in the main group of patients on admission, during the treatment and at discharge the parameters were not considerably changed either.

In our opinion the coagulogram parameters, lipid peroxidation, AOP, OPM indices against the background of typical positive clinical effects of ozone therapy application can be regarded as favorable biochemical signs for the use of the given method of treatment in diabetic patients with pyoinflammatory complications.

Conclusions:

1. Implementation of the positive effects of ozone therapy in the clinic in diabetic patients with pyoinflammatory complications is not accompanied by the development of damage reactions on the level of hemostasis parameters and blood biochemical parameters.

2. The above mentioned fact confirms the expediency of intravenous ozone therapy application clinically in this category of patients.

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