Short Reports

COMPLEX CRYSTALLOSCOPIC STUDY OF METABOLIC REHABILITATION EFFECT AT RECTAL USE OF REACTIVE OXYGEN SPECIES

[1]Martusevich A.K., [2]Razumovsky A.V., [1]Peretyagin S.P., [3]Kovaleva L.K., [1]Luzan A.S.
[1]Privolzhsky Federal Medical Research Centre, Nizhny Novgorod;
[2]Niznhy Novgorod State Medical Academy. Nizhny Novgorod;
[3]Kirov State Medical Academy, Kirov,
e-mail: cryst-mart@yandex.ru

Based on the saliva and intestinal colon cleaning waters teziocrystalloscopic and spectrometric analysis of the 12 healthy people and 12 patients after rectal ozone detoxication, which was accomplished by colon irrigation with the ozone-contained isotonic sodium chloride solution we found out peculiarities of the free biosubstratum crystals building. Biosubstance crystallogenesis characteristics were evaluated after one procedure and the whole rectal ozonotherapy course. We disposed that one rectal ozonotherapy and the whole course changed free crystallogenesis of the saliva and intestinal colon cleaning waters in different ways.

At present time indicatory role of the crystallographic methods are actively studied. They allow monitoring patient's condition by biological fluids crystallization characteristics [1–3, 5]. As some authors think use of the crystallographic methods is very informative in human pathology diagnostics, management effectiveness estimation and pathogenesis investigation [1–5]. The importance of crystal building and initiation properties of biosubstrata include metabolic changes verification possibilities [3, 5]. In connection with it the above-mentioned methods could be applied to control systematic ozonotherapy effectiveness. Today this problem is insufficiently studied, because the informative methods of patients condition dynamics estimation according treatment are absent.

A lot of human biological substrata are studied (blood serum, saliva, urine, gastric juice, tears etc.). Tendencies for use some of biological substances (first of all blood serum) as a universal substrata for crystalloscopic analysis are wide spread [1, 5]. But maximal metabolic changes found in biofluids are anatomically or/and functionally connected with potentially disordered organ or system [3]. Estimation of the biosubstrata free and initiated crystallogenesis pecularities is highly significant because it is informative for clinical diagnostics, and isn't studied at all. The biosubstances are excrements and colon cleaning waters (colon lavage).

This research aim was investigation of saliva and colon cleaning water of the healthy people and patients under rectal detoxication.

Materials and methods of research. We tested free crystallogenesis properties of saliva and colon cleaning waters of the 12 healthy people and 12 patients after rectal ozone detoxication, which was accomplished by colon irrigation with the ozone-contained isotonic sodium chloride solution. Control points were in 1 hour after the first and the last procedure.

The main crystalloscopic method was classic crystalloscopy [3, 4]. Results evaluation of the own crystallization was accomplished by criteria system including structure index (SI), crystallization rate (CR), facia's destruction degree (FDD) and marginal belt clearance (MB). We studied more than three micropreparation sight field .

Except visual morphometry we used spectrometric analysis of the crystals and amorphous structures formed after biological substrata dehydration. This method allowed to verificate the biological fluids morphology changes in the rectal ozonotherapy dynamics.

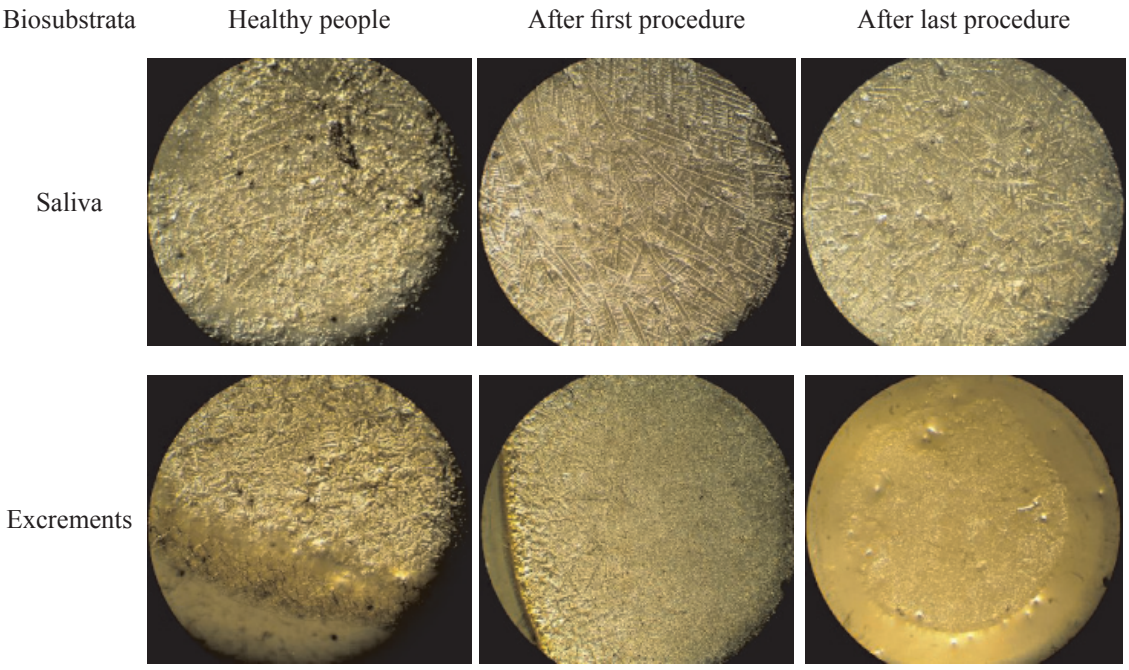
Statistic processing of the data was accomplished by Microsoft Excel 2003 spreadsheets and the programs Primer of Biostatistics Vers. 4.03. and SPSS 11.0.

Results of research and their discussion. By the crystallograms morphometric analysis (Figure) we determined that the first procedure of the rectal ozone-contained sodium chloride irrigation had a structurizing effect on dehydrated biofluids crystals. This was illustrated by the structure index.

At the same time we noted temperate inhibition of crystallogenesis (on crystallization rate) connected with the basic level of marginal belt diameter (MB) and facia's destruction degree growing (FDD). Similar changes were also found in colon cleaning waters but there crystallogenesis had a moderate character. It is necessary to underline that the crystal bodies were almost absent in the specimens of the control group.

The course of rectal ozonotherapy has normalized all of the estimated parameters, but facia's destruction degree of dehydrated saliva micropreparations was negative. In the excrements specimen we noted stabilization of the investigated criteria. They had an increased dynamics at last procedure (Figure).

The results of the biofluids spectrometric analysis demonstrated similar dynamics from the first to the last ozone-contained isotonic sodium chloride solution irrigations. We determined high correlation between spectrometric data and crystalloscopic estimation coefficients ($|r| > 0{,}7$; $p < 0{,}05$).



The saliva and excrements crystalloscopic facias of the healthy people and patients under rectal irrigation of ozone-contained isotonic sodium chloride solution (x70)

Conclusion

Biological fluids of gastrointestinal tract react actively on rectal ozone irrigations, and effects of one procedure and the whole course were different. It was determined that the course of rectal ozone detoxication had positive effect on the biosubstrata crystals building properties, and one procedure changed negatively some crystalloscopic characteristics.

References

1. Dushov V.A., Kutnaya Gh.B., Baibulatova L.B. et al. Ozonotherapy effectiveness estimation in patients with chronic cerebro-vascular insufficiency on blood serum morphologic analysis // Nizhny Novgorod Medical Journal. – 2005. – Appl. «Ozonotherapy». – P. 79–81.

2. Gulyaeva S.F., Martusevich A.K., Pomaskina T.V. Mathematic modeling of saliva initiated crystallogenesis results as a criterion of mineral water drinking effectiveness // Human ecology. – 2005. – № 7. – P. 33–35.

3. Martusevich A.K. Crystalloscopic investigation of biological substrata in pathological system determination on therapeutic and sergical gastrointestinal disorders // Gerald of Russian State Medical University. – 2006. – № 2. – P. 43–44.

4. Martusevich A.K., Kamakin N F. Unified algorithm of biological fluids free and initiated crystallogenesis investigation // Clinical laboratory diagnostics. – 2007. – № 6. – P. 21–24.

5. Zubeeva G.N., Motyleva I.M., Potechina Yu.P. et al. Crystallographic screening in diagnostics and treatment of patients with artrial fibrillation // Clinical laboratory diagnostics. – 2001. – № 9. – P. 10.

SPECIALTIES OF CRYSTALLOGENIC PROPERTIES OF SALIVA AND BLOOD SERUM IN PATIENTS WITH THERMO-INHALATION TRAUMA

[1]Martusevich A.K., [2]Kovaleva L.K., [2]Prudnikova Z.I.

[1]Privolzhsky Federal Medical Research Centre, Nizhny Novgorod;
[2]Kirov State Medical Academy, Kirov,
e-mail: cryst-mart@yandex.ru

Character of free and 0,9 % sodium chloride solution initiated crystals yielding in saliva and blood serum of the 14 thermo-inhalation traumatized patients was studied. Spectrometric characteristics of the biofluids newgenied crystals at the 300–400 nm wave-lengths were estimated. We disposed the teziocrystalloscopic «pattern» of human biosubstratum for the studied pathological state.

Today crystalloscopic analysis of the dehydrated biological fluids is wide spread [1–5]. It is known that informativity of the crystalloscopic picture is determined by changes in biological substratum chemical composition and its physical properties, which are associated with patient`s functional status. The advantages of this research methods group underline the importance of crystalloscopy application. At the same time the majority of approaches described in literature base on comparison of the dehydrated biological fluids samples by qualitative attributes and