

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 surgical 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 atrial fibrillation // *Clinical laboratory diagnostics*. – 2001. – № 9. – P. 10.

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

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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

on attempts of specific crystalloscopic «markers» separation of different pathological states. That is why the significant question of modern biocrystallography is the highest possible objectivity of findings [2, 5]. It should be mentioned that the most authors do not describe or analyse the process and results of yielding of crystals, except visual description [1, 3]. There is almost no information about biological fluids morphology at burn disease, and first of all at thermo-inhalation effect [4]. That is why **our research aim** was data comparison of the criterial visual morphometry for facias of saliva and blood serum at patients with thermo-inhalation trauma, and biosubstratum neogenic crystals spectrometric analysis.

Materials and methods of research. We studied character of free and 0,9% natrium chloride solution initiated crystals yielding in saliva and blood serum of the 14 thermo-inhalation traumatized patients. The dehydrated biological fluids micropreparations were made by classic crystalloscopy and comparative tezigraphy methods [2]. Estimation of

the crystalloscopic and tezigraphic analysis results was made by the original algorithm [2].

Situated on the object-plate samples of the dehydrated biological fluids were examined spectrometrically by the PowerWave XS device (USA), special attention was paid to the waves with the 300, 350 and 400 nm length absorption rate.

Statistic processing of the data was accomplished by Microsoft Excel 2003 spreadsheets and program systems Primer of biostatistics 4.03 и SPSS 11.0.

Results of research and their discussion.

Based on the morphometric analysis of the saliva and blood serum crystalloscopic and tezigraphic facias of the thermo-inhalation traumatized patients, we established that free (Fig. 1) and initiated (Fig. 2) crystallogenesis of such patients had a specific character. It should be mentioned that thermo-inhalation trauma features became apparent in micropreparations, when the characteristics of the biosubstratum samples were preserved.

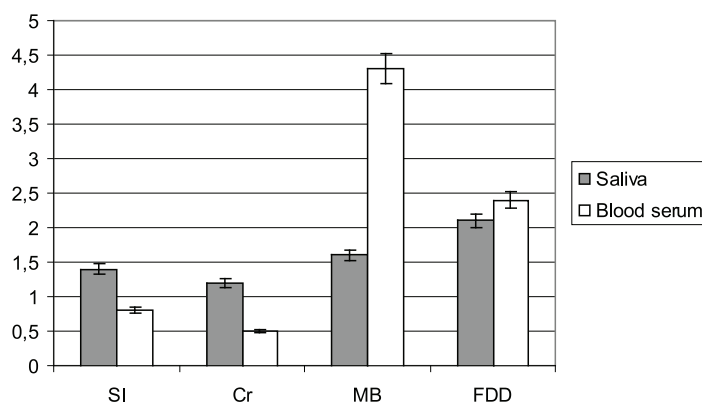


Fig. 1. Results of the saliva and blood serum facias crystalloscopic morphometry

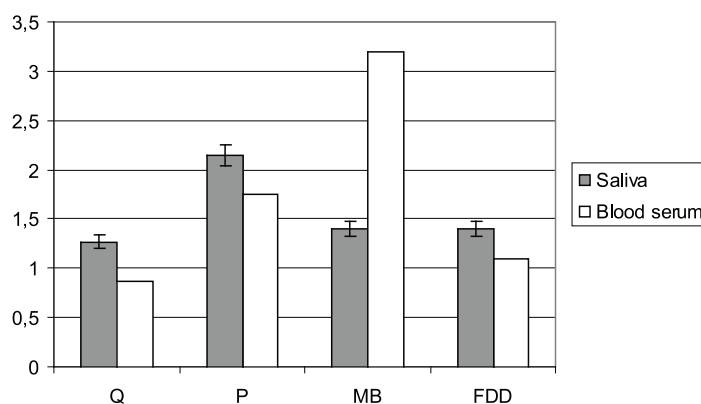


Fig. 2. Results of the saliva and blood serum facias tezigraphic morphometry (basic substance – 0,9% sodium chloride solution)

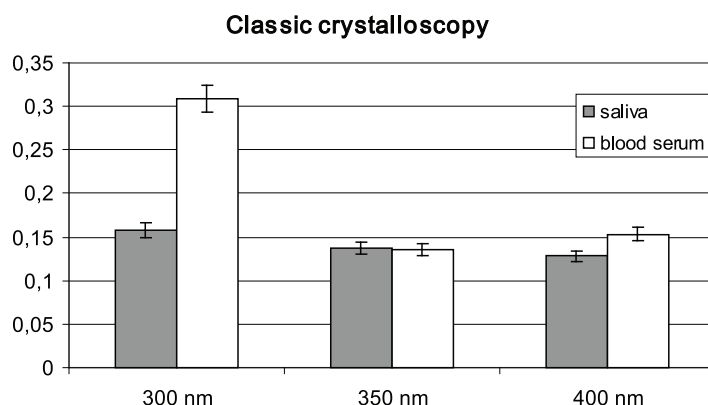


Fig. 3. Results of the saliva and blood serum facias crystalloscopic spectrometry

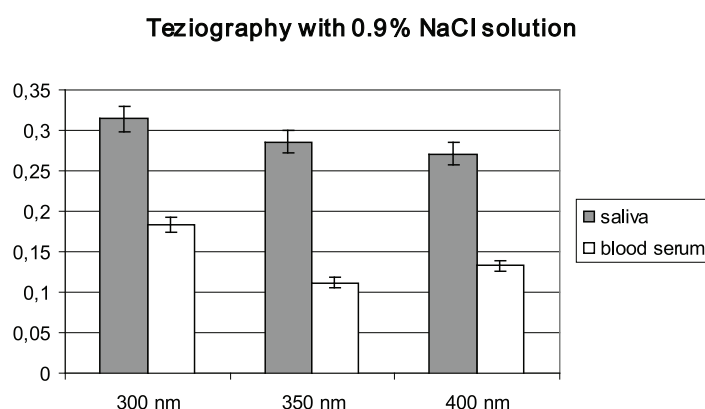


Fig. 4. Results of the saliva and blood serum facias teziographic spectrometry (basic substance – 0,9% sodium chloride solution)

Analysis of the facias spectrometric characteristics revealed some peculiarities of the biofluids crystals absorption rate at the above-mentioned wave-lengths (Fig. 3, 4). It is interesting that absorption rate differentiation was noted only at 300 nm wave-length (Fig. 3) in the samples made by classic crystalloscopy methods, whereas teziographic facias were differ in spectrometric characteristics at all of the studied wave-lengths (Fig. 4).

Revealing of the high and medium correlated connections ($p < 0,05$) between crystals visual morphometry characteristics and their spectrometric parameters in the crystalloscopic test proved additionally biofluids composition changes at thermo-inhalation effect.

Conclusion

Considerable shifts in saliva and blood serum crystallogenic and initiating properties were re-

vealed at thermo-inhalation trauma and visualized morphometrically and spectrometrically.

References

1. Maksimov S.A., Kureljak D.S. Some characteristics of separateness of facia of the whey of blood // Bulletin of the International Scientific Surgical Association. – 2006. – Vol. 1, № 3. – P. 63–64.
2. Martusevich A.K., Kamakin N.F. Crystallography of biological fluid as a method of evaluating its physicochemical characteristics // Bulletin of Experimental Biology and Medicine. – 2007. – Vol. 143, № 3. – P. 385–388.
3. Shabalin V.N., Shatokhina S.N., Yakovlev S.A. Character of blood crystallization as an integral index of organism homeostasis // Phys. Chem. Biol. Med. – 1995. – Vol. 2, № 1. – P. 6–9.
4. Vorobyev A.V., Peretyagin S.P., Pogodin I.E. et al. New technology of burn endotoxiosis stage evaluation // Nizhny Novgorod medical journal. – 2006. – Appl. «Traumatology, orthopedics. combustiology». – P. 296–298.
5. Yakhno T., Yakhno V., Sanin A. et al. Dynamics of Phase Transitions in Drying Drops as an Information Parameter of Liquid Structure // Nonlinear Dynamics. – 2002. – Vol. 39, № 4. – P. 369–374.