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Morphology of Dried Blood Serum Specimens of Viral Hepatitis

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Background and Aims: **Free and initiated crystallogenesis characteristics of blood serums of 32 healthy people, 14 patients with viral hepatitis B and 12 patients with viral hepatitis C were studied. Specific characteristics of each hepatitis type were singled out.**

Methods: **Classic crystallography and comparative tezigraphy were performed on blood serums. Crystalloscopic fascia was described by identification table and additional criteria. Tezigraphic component was analyzed by basic and additional criteria.**

Results: **It was determined that the character of blood serum free crystallization of viral hepatitis is considerably differing from the biological fluid fascia received from healthy people. Significant differences are detected between mounts of control group people and patients with hepatitis B according to the basic tezigraphic coefficient with the initiator potential growth ($P<0.01$).**

Conclusions: **We established that it is quite possible to use crystallodiagnostics of the viral hepatitis B and C by the analysis of blood serum fascias.**

Keywords: **Viral Hepatitis, Tezigraphy, Blood Serum, Morphology**

Introduction

Viral hepatitis management is one of the actual problems of modern medicine, especially infectious diseases and therapy. This pathology has an epidemic character now. Importance of the question is determined by wide spread of parenteral hepatitis which are caused by B, C and D hepatitis viruses [1].

Translocation variants multiplicity (e.g. sexual contacts, blood transfusions, stomatological and gynecological interferences) and high prevalence of carriers and patients indicate the necessity of prophylaxis and early recognition of viral hepatitis. This assertion is confirmed by the numerous materials on the analyzable problem in periodicals and Internet.

It should be mentioned that viral hepatitis is not a local process but a pathology which involves all organism systems and inevitably affects metabolism, therefore timely and especially early recognition of the disease is essential. In this case, organism metabolic status study is of primary importance.

It was shown by numerous authors that the technology of biological fluids crystalloscopy is simple enough and highly sensitive for integral estimation of activity of human organs and systems. According to the fact that many human diseases have their own crystalloscopic characteristics [2-9] works on viral hepatitis are unitary now [1]. In connection with it, the aim of our research was an assessment of informativity of blood serum free and initiated crystallogenesis by viral hepatitis B and C examples.

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Materials and Methods

We examined 14 patients with serologically detected viral hepatitis B and 12 patients with viral hepatitis C. Control group included 32 healthy subjects. The analyzable substrate was blood serum of each tested group. Specimens of the biological fluid were dried on air (at 20-25oC and moisture 40-55%). We used such crystalloscopic methods of testing as classic crystallography and comparative tezigraphy [10-12]. Classic crystallography is a crystalloscopic method which is based on free crystallogenic assessment. Comparative tezigraphy includes co-crystallization of biological fluid (blood serum) with basic substance [11, 12]. In this research, we used 10% sodium chloride solution as a basic substance.

Identification of the specimens was accomplished by crystalloscopic and tezigraphic parallel test (method of teziocrystalloscopy). Crystalloscopic fascia was described by identification table (five classes of crystals and amorphic structures) and additional criteria (regularity, cellularity, fascia destruction degree, marginal belt parameter and zonality). Tezigraphic component was analyzed by basic (basic tezigraphic coefficient Q, belt coefficient P) and additional (similar to classic crystallography) criteria [12]. Statistical data processing was carried out by Microsoft Excel 2003, SPSS 11.0 and Primer of Biostatistics 4.03.

Results

It was determined that the character of blood serum free crystallization of viral hepatitis is considerably differing from the biological fluid fascia received from healthy people. For example, characteristics of dried specimens of patients with viral hepatitis B include localization conservation of "cracks" [8, 13] which are presented in all parts of fascia texture and diverge radially from "cracks" touch point disposed in a true fascia center (Fig 1). Presence of low-grade marginal belt and fascia destruction degree, high concentration of solitary crystals uniformly distributed on specimen surface are typical for this fascia (Fig 2).

The own crystallization of blood serum of patients with hepatitis C has no "cracks" localization correctness, but several centers of their convergence at once which do not coincide with fascia center (Fig 1). Moreover, clearly defined marginal zone and unitary spheroid cameras with dendrites are detected

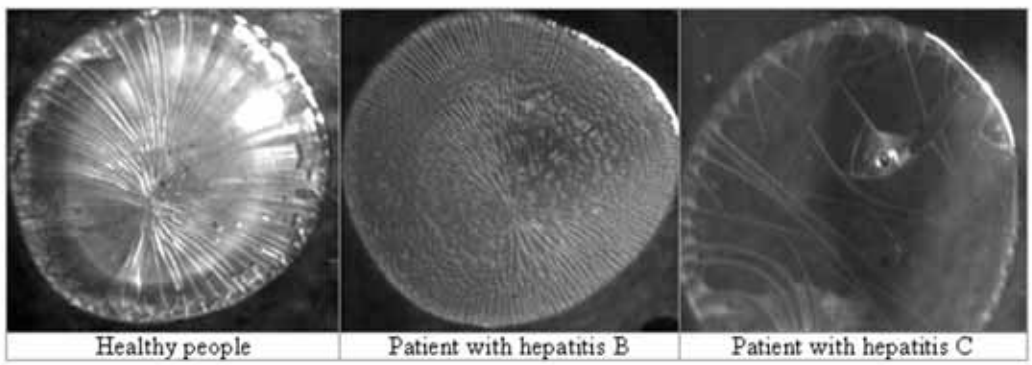

Figure 1. Morphology of dried blood serum specimens.

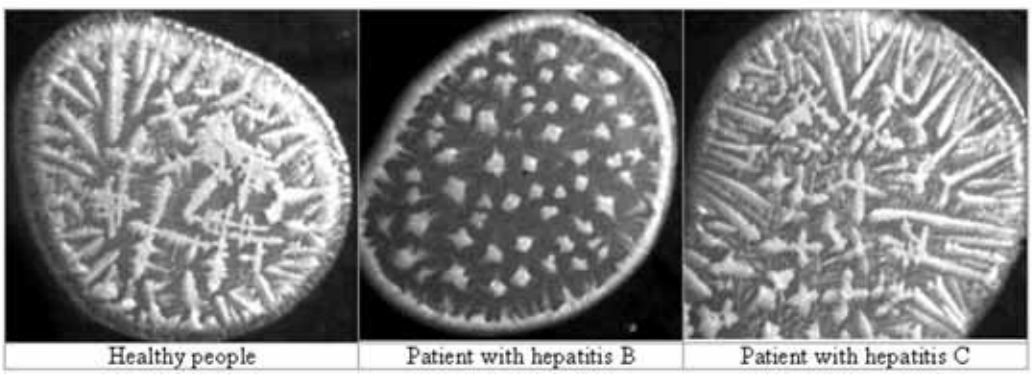

Figure 2. Typical characteristics distributed on specimen surface.

(Fig 2). It is necessary to note that the essential differences are detected between control group people and patients with hepatitis B relative to the tezigrams qualitative description of biological substrates. In this case, the main fascia structure becomes "pyramid", not "horsetail" presented by specimens of the healthy people (Fig 3).

This fact is confirmed by the quantitative analysis of the tezigraphy results (Fig 4 & 5). Significant differences are detected between mounts of control group people and patients with hepatitis B according to the basic tezigraphic coefficient with the initiator potential growth ($P<0.01$).

Discussion

Analyzing the findings, we established that the character of the own and initiated blood serum crystallization depends on the virus type which causes a disease. Marked shifts in biological fluid crystallizability and crystallogenesis regularity show that viral hepatitis C is the most significant

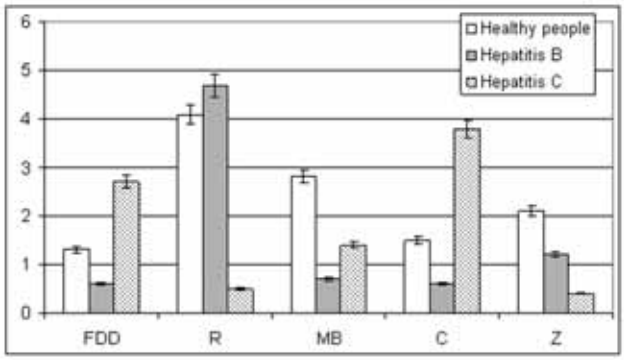

Figure 3. Classic crystalloscopy additional parameters of classic blood serum of healthy people and patients with hepatitis (FDD: facia destruction degree; R: regularity; MB: marginal belt; C: cellularity; Z: zonality).

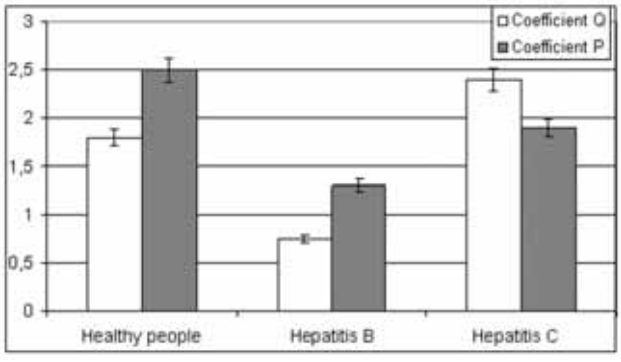

Figure 4. Main criteria of blood serum tezigraphy of healthy people and patients with hepatitis.

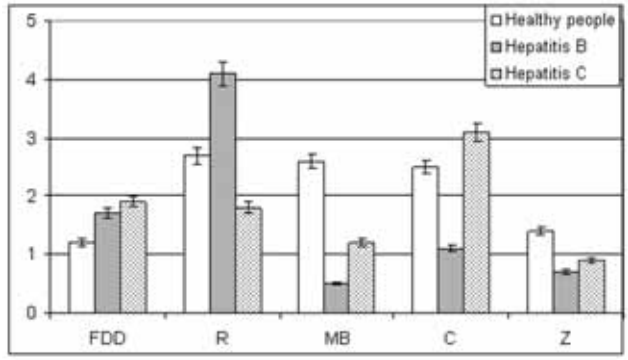

Figure 5. Additional criteria of blood serum tezigraphy of healthy people and patients with hepatitis (FDD: facia destruction degree; R: regularity; MB: marginal belt; C: cellularity; Z: zonality).

modulatory factor for the crystalloscopic picture in case of free crystallogenesis. In point of viral hepatitis B, quantitative changes are more positive in comparison with qualitative and quantitative fascia's transformation.

It should be mentioned that initiated blood serum crystallization transformations have an inverse dynamics. We consider that viral hepatitis C is a temperate initial factor for the isotonic sodium chloride solution whereas viral hepatitis B is inhibitory. The findings are new because single works about blood serum crystallization with viral hepatitis contain information only about some qualitative characteristics of the patients' fascias [1]. Despite the fact that the concerned problem is insufficiently explored, its solving may have considerable applied consequences because this approach can be screening in viral hepatitis diagnostics and presence test of donor blood.

Conclusions

Presence of viral hepatitis in patient's organism (in replication stage) significantly changes the result of free and initiated blood serum crystallization and it is quite possible to single out the biological fluid crystallogenesis characteristics according to virus type.

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