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PROGNOSTIC AND PATHOGENETIC SIGNIFICANCE OF SERUM AUTOANTIBODIES IN PATIENTS WITH CHRONIC HEPATITIS C

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Key words: chronic hepatitis C, autoantibodies

Recently, much attention has been paid by researchers to the study of various aspects of chronic hepatitis C, which is a global problem of healthcare. This is due to its wide spread, extremely high chronization rate, low or asymptomatic multi-year course followed by a rapid finish, the complexity of the therapy and the lack of specific prophylaxis. Thus, according to WHO, at least 350 million people in the world suffer from chronic hepatitis C (CHC) (1, 2). Despite numerous studies on this problem, many issues concerning pathogenesis and treatment of HCV still remain unresolved or need to be clarified (3).

It is known that the persistance of the hepatitis C virus (HCV) often leads to malfunctioning of the immune system, in particular, to the appearance of autoantibodies, but the data from the literature indicate quite controversial ideas both about the frequency of detection of various autoimmune phenomena in patients with HCV infection and about their role in the pathogenesis of HCV. The question of therapeutic tactics in relation to such patients remains controversial (3-5).

The aim of the research is to study the content of antibodies to liver microsomes, native and denatured DNA (deoxyribonucleic acid) in serum of CHC patients with different biochemical activity of the process.

Material and methods. A total of 87 patients with CHC were under observation. Among all examined men there were 73 (83,9 %) and women – 14 (16,1 %). The average age of patients was 31,17 + 1,11 years. The etiology of the disease was confirmed by detection of antibodies to HCV by ELISA (immunoenzyme assay), as well as detection of RNA-HCV in serum by qualitative method of PCR (polymerase chain reaction). Autoantibodies to liver microsomes, n-DNA (native deoxyribonucleic acid) and d-DNA (denatured deoxyribonucleic acid) in serum were determined by ELISA method. Depending on ALT (alanine transferase) activity in serum patients were divided as follows. Group 1 included 24 patients who had ALT within normal limits, which means that chronic hepatitis activity was minimal. Group 2 included 31 patients with moderate degree of hyperalaninaminotransferazemia (up to 5 norms), in 3 – 32 patients with medium and high degree of hyperalaninotransferazemia 5 norms and more), which corresponds to weak, moderate and pronounced activity of CHC.

Results and discussion

ALT activity in patients' serum averaged 4,25 + 0,44 mmol / l – g 6 standards); in Group 1 – 0,42 + 0,04 mmol / l – g (normal), in Group 2 – 1,97 + 0,12 mmol / l – g (2,9 standards), in Group 3 – 8,26 ± 0,92 mmol / l – g (12,1 standards).

Antibodies to liver microsomes in titer 1: 100 were found in serum of 5 patients, which was 5,75 % (in 3 out of 14 women – 21,43 %, and in 2 out of 73 men – 2,74 %). Antibodies to n-DNA were detected in 19 patients, which amounted to 21,84 % 5 out of 14 women (35,71 %) and 14 out of 73 men (19,18 %). DNA antibodies were detected in 25 patients with CHC (28,73 %) 7 out of 14 women (50 %) and 18 out of 73 men (24,66 %).

It should be noted that antibodies to liver microsomes were more frequently found in women ($p < 0,05$). Differences in the frequency of detection of antibodies to n-DNA and DNA in women and men were not reliable ($p > 0,05$), but a similar trend was observed. This may well be due to the proven genetic predisposition of women to autoimmune processes.

In group 1 CHC patients, i.e. with normal activity of ALT in blood serum, antibodies to liver microsomes occurred in 8,33 % of cases, to n-DNA – in 8,.33 %, to d-DNA – in 20,83 % of cases. In patients of the 2nd group – in 9,68 %, 25,81 %, 29,03 %, 3 groups – in 0 %, 28,42 %, 34,37 % of cases respectively.

Thus, autoantibodies to the liver microscope in serum in titre 1: 100 cases of CHC patients occurred rarely and approximately with the same frequency in patients with normal and increased activity of ALT in serum. Antibodies to n-DNA and D-DNA were more common, and in patients with ALT activity (groups 2 and 3) they were slightly more frequent than in patients with normal ALT activity, but this difference was statistically unreliable ($p>0, 05$). The most expressed trend was observed in n-DNA (8,33 %, 25,81 %, 28,12 % in patients in groups 1, 2 and 3 respectively). However, absence of statistically reliable differences in frequency of detection of autoantibodies to hepatic microsomes, n-DNA and d-DNA in CHC patients of different groups allows to consider that presence of the above mentioned antibodies in serum in titre 1: 100 is not connected with biochemical activity of the process and does not influence it. The appearance of antibodies to liver microsomes, n-DNA and d-DNA in serum CHC patients in titre 1: 100 only "signals", indicates that liver damage has occurred or is occurring and is the result of destruction of hepatocytes, not the factor that leads to it. Selectivity in the detection of these autoantibodies in some CHC patients may be due to the genetic predisposition of individuals to autoimmune processes, the age of the disease and many other factors.

Conclusions

Antibodies to liver microsomes in titre 1: 100 in serum were found in 5,75 %, to n-DNA – in 21,84 %, to d-DNA – in 28,73 % of CHC patients; they are found with

equal frequency in patients with both stable normal and increased ALT activity, but more often in women.

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