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THE VALUE OF ANTI-HCV IgG AVIDITY INDEX AND ANTI-HCV IgG PROFILE FOR DISTINGUISHING OF ACUTE AND CHRONIC HEPATITIS C VIRUS INFECTION

The diagnostics of the primary HCV infection is based on a combination of epidemiological risk factor assessment, screening for serum ALT activity and HCV seroconversion. The alternative method to distinguish acute (AHCV) from chronic (CHCV) infection is measuring IgG avidity: the avidity of antibody increases progressively with time after exposure to an immunogen. In this study the correlation between anti-HCV IgG avidity index (AI) and the anti-IgG profile was investigated.

METHODS: The various sequences of recombinant antigens comprising HCV Core, NS3, NS4, and NS5 were separately adsorbed on the plate for the detection anti-IgG profile. The plate coated by mixture of these antigens was used for the detection of anti-HCV AI. Samples from patients with AHCV (n=78) and CHCV (n=603), 190 samples from infants born to HCV-positive mothers in dynamics have been used.

RESULTS: AI values were significantly lower in samples from AHCV group (15±5%) than from CHCV group (82±16%). 95% of samples with low AI have anti-IgG to one antigen only: anti-NS3 – 71%, anti-Core – 23% and anti-NS4 –1%. Anti-NS5 weren't detected in low-AI samples. Most of low-AI samples (68%) had CP value 1.2-5.0 and only 14% had CP >10.0. 87% of high-AI samples contained anti-IgG at least to two viral markers and 13% had anti-IgG only to one antigen. 95% of high-AI samples had value CP >10, 0. 94.2% of infants born to HCV infected mothers had only maternal high avidity anti-HCV IgG which disappeared to 18 months. Anti-HCV IgM and HCV RNA were no detected in this group. AHCV has been diagnosed for 11 newborns (5.8%). All samples from infants with AHCV in the age of 3-5 months had anti-Core IgM alone or with anti-NS3 IgM and were HCV RNA positive. The increase of anti-Core IgM and anti-NS IgM titers were specified to 9-18 months and indicated to the development of CHCV. The AI in sera samples of newborns with perinatal HCV-transmission was high (80-100%) during all the period of their observation. Thus, dynamic monitoring of antibodies to separate proteins have more information than measuring of IA for infants.

CONCLUSION: The measurement of AI with anti-HCV IgG profile can be useful for distinguishing of AHCV and CHCV for adult patients. The detection of primary HCV infection in infants born to HCV positive mothers is more reliable by investigation of anti-HCV IgM profile.

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