Pathogenesis and Virus-Host Interactions

P-40 - Distinguishing acute from chronic and resolved HCV infections by measurement of anti HCV IgG avidity

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Aim: The development of an anti-HCV IgG avidity test using a novel combination of target antigens, and its validation.
Methods: Two hundred and twenty samples from 21 commercial seroconversion panels, 362 samples from anti-HCV and HCV RNA-positive blood donors and samples from 21 anti-HCV confirmed positive HCV RNA negative blood donors with resolved infection were tested. The detection of antibody avidity was based on an indirect ELISA method using a mixture of antigens, containing epitopes to core-1b, NS3-1a, 1b and NS4.
Results: The mean AI value for seroconversion samples obtained <65 days after the last anti-HCV negative result was 18.6% (95% CL, 3.5% to 33.7%). Seroconversion samples obtained >65 days after the last anti-HCV negative result showed a mean AI value of 63% (95% CL, 34.7% to 91.3%). Samples from anti-HCV and HCV RNA positive blood donors with chronic HCV infection showed a mean AI value of 100% (95% CL, 83.1% to 116.9%). Samples from blood donors with resolved infection showed a mean AI of 54% (95% CL, 32.8% to 75%) The observed differences were significant (P< 0.001) except between seroconversion samples >65 days after last anti-HCV negative result and resolved infections. Additional data suggest that the lower AI values obtained from resolved infections may be due to lower levels of circulating IgG anti-HCV antibody.
Conclusions: These data suggest the utility of using anti-HCV IgG avidity to discriminate between acute and chronic HCV; however, HCV RNA detection would be important to exclude resolved infections.

Adaptive Immunity

P-94 - The diagnostics of the perinatally transmitted HCV infection in babies

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Circulation of maternal anti-HCV in babies born from HCV-infected mothers complicates early serological diagnostics of the disease.
The aim of this study was to evaluate the importance of the change of anti-HCV IgG and anti-IgM profiles during the time for diagnostics of the perinatal HCV infection. The serum samples from 75 infants of the age from 3 to 18 months born from HCV-infected mothers were used for the detection of anti-HCV IgG and anti-HCV IgM to different HCV antigens. All samples were additionally tested to the presence of the HCV RNA.
It has been found that 68 (90,6 %) infants had maternal anti-HCV IgG which disappeared to 18 months. Anti-HCV IgM and HCV RNA were no detected in this group. Acute hepatitis C (AHC) has been diagnosed for seven babies (9,4%). All serum samples fr o m babies with AHC had HCV RNA, a nti-HCV core IgM alone (28,5%) or in combinations with anti-HCV NS3 IgM (28,5%), with anti-HCV NS3-NS4 IgM (14,3%), with anti-NS4 IgM (14,3%), with anti-NS5 IgM (14,3%). The anti-HCV IgG level in serum samples from babies with AHC decreased during 6-7 months and then increased in the age of 9-10 months. Dynamics of antibodies concentration change to different virus antigens was various. Antibodies to HCV NS4 and HCV NS5 disappeared first.
Obtained data allow suggest the measurement of anti-HCV IgG level and detection of anti-HCV IgM to different HCV proteins may be important for diagnostics perinatally transmitted HCV infection.

Adaptive Immunity

P-98 - Influence of the HCV-CMV coinfection on the formation of antibody response to HCV and CMV antigens

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The strength of the humoral and cellular immune response depends on interaction of viruses at the presence of coinfections. It is known, that HCV coinfection with HAV, HBV, HIV and TORCH-infections may be expressing in incomplete anti-HCV profile in sera from HCV-infected patients. It can be one of the reasons of the occurrence of anti-HCV “indeterminate” results.
The aim of this study was to evaluate the antibody immune response to HCV and CMV proteins at the HCV-CMV coinfection.
The two well defined cohorts of sera: the anti-HCV positive samples (n=162) from chronically and acute infected patients, and anti-HCV negative samples from healthy blood donors (n=247) have been used. All samples were additionally tested on the presence of anti-CMV IgG.
As a whole the frequency of antibody response to CMV antigens in sera from HCV-CMV coinfected patients with different anti-HCV pattern reactivity tended to be lower (on 10-20%) than in samples from anti-HCV negative blood donors, but the difference did not reach statistical significance. The evaluation of sera form HCV-CMV coinfected patients with antibodies to HCV NS3 only has shown that the frequency of anti-CMV detection was in 1,42 times less than in sera from the control group (t=2,74; p>0,99). Anti-NS3 alone may be a unique marker of the early stage of HCV infection. There is the strong correlation between unique anti-HCV NS3 reactivity and HCV viraemia.
Obtained data allow to suggest, that the antibody immune response to CMV may be suppressed at HCV-CMV coinfection especially during the active HCV replication.