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Poster Session VI
Viral hepatitis and HIV/HCV co-infection

AVIDITY OF SPECIFIC IMMUNOGLOBULIN G FOR THE DETECTION OF HEPATITIS E PRIMARILY INFECTION

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OBJECTIVE: Hepatitis E virus is a major cause of the outbreaks, associated with the enterically transmitted non-A, non-B hepatitis in developing countries and sporadic cases in developed countries. As number of reports of the hepatitis E sporadic cases in non-endemic areas increased diagnostic test for discrimination of primary infection or convalescence should be suggested.

MATERIAL AND METHODS: This study included 7 commercial available seroconversion panels (SCP-HEV-001a, SCP-HEV-002a, SCP-HEV-005a, SCP-HEV-006a, SCP-HEV-007a, SCP-HEV-008a, SCP-HEV-009a; Biomex, Germany) and 64 serum samples of blood donors from central Russia, which were previously examined for the presence of anti-HEV IgG in the kit 'DS-EIA-ANTI-HEV IgG' (RPC Diagnostic systems, Russia) and had positive results. To determine of IgG avidity index (AI) ELISA kit for the detection of anti-HEV IgG was modified with using 2.5M guanidine HCl as denaturing agent. AI was calculated as:

AI (%) = (absorbance A / absorbance B) * 100, where A and B optical density with or without denaturation respectively.

RESULTS: The avidity assay cut-off was set at AI≤20% for a recent infection. Seroconversion panels described different periods of illness: from 36 to 119 days after seroconversion. The assay could detect a recent infection in the first 33-71 days (mean was 47 days) from the last negative result.

Mean AI for all samples collected from 1 to 30 days after last negative result was 7.8%. Mean AI for samples from 60 to 119 days – 62.6% and for anti-HEV positive blood donors - 58.1%.

From 64 tested samples with unknown disease history which were previously detected as anti-HEV IgG positive, 6 were founded to have IA lower than 20%, other 58 samples had avidity higher than 20%.

CONCLUSION: These data showed that anti-HEV IgG avidity assay can be used to distinguish between recent infection and convalescence.