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PATIENTS PCR AND HEPATITIS C AVIDITY

Objectives. Antibody Avidity is serological marker of primary infection and avidity test is a reliable method to distinguish acute primary HCV infections and chronic HCV infections for certain. But during this study some limitations for the avidity assay were found.
Methods. 220 samples from 21 commercially available seroconversion panels, 480 samples from anti-HCV and HCV RNA-positive blood donors and samples from 21 anti-HCV positive, but 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 (the artificial mosaic protein contains the HCV NS4 immunodominant regions from 1, 2, 3, 5 genotypes).
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%). Samples from anti-HCV and HCV RNA positive patients with chronic HCV infection showed the mean AI value of 100% (95% CL, 83.1% to 116.9%). Samples from patients with resolved infection showed a mean AI of 54% (95% CL, 32.8% to 75%). The observed differences were significant ($P < 0.001$).
Patients with high PCR level had an AI increase during a shortest time than patients with low PCR Level. The best correlation between AI value and time after infection onset was observed from patients with PCR status more than 1,000,000 copies: $y = 0.83x + 1.5$ against $y = 0.3x + 31$ for patients with PCR status 10,000-100,000 copies or $p = 0.08x + 49$ for patients with PCR status <1,000 copies.
Conclusions. The AI may depends on patient PCR status. Persons with low PCR level or PCR negative (resolved infection) may have the low AI for a long time and the avidity assay is more reliable for PCR positive specimens with high PCR level.

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