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Poster Presentation Abstracts

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THE SEROLOGICAL PROFILE OF THE SAMPLES WITH HBsAg CONCENTRATION BELOW DETECTION LIMIT OF BEST CURRENTLY AVAILABLE EIA KITS

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Background and Objectives: Mutations, coinfection, beginning or termination of infectious can be accompanied by decrease of HBsAg concentration in serum below detection limit of the majority commercial assays. The aim of the study was to characterize the serological profile of the samples tested as HBsAg negative by the best available tests. **Methods:** The samples (n=63) from different cohorts (the primary asymptomatic blood donors, clinical patients, pregnant women, patients infected with various bacteria and viruses) with the HBsAg concentration less than 0,05 IU/ml was analysed. Additionally the collections of anti-HBs negative samples with isolated anti-HBc (n=72) and anti-HIV positive/HBsAg negative samples (n=172) were studied. The presence of HBsAg was confirmed by the reaction of neutralisation. **Results:** All 63 samples previously detected as HBsAg»-negative (test with sensitivity 0.05-0.1 IU/ml) were HBsAg positive by test with analytical sensitivity 0.01 IU/ml. 21 (33,3%) samples were positive for anti-HBc. The serological profile of 7 samples (anti-HBc and anti-HBe positive) is compatible with that of an HBV carrier. Two samples showed the serological profile of acute HBV infection (anti-HBc and anti-HBc-IgM positive). The serological markers of one sample were compatible with that of acute HBV infection with active replication (anti-HBc, anti-HBc-IgM and HBeAg positive). Two serum sample showed the serological profile of an aggravation of a chronic HBV infection (anti-HBc, anti-HBc-IgM and anti-HBe positive). Out of 63 sample 12 samples were simultaneously HBsAg/anti-HBsAg positive. 5 of them were anti-HBc-negative. 7 samples were anti-HBc and anti-HBs positive, two of them were positive for anti-HBe. 31 samples out of 63 were tested by PCR. Nine samples out of 31 were HBV DNA positive. Out of 72 isolated anti-HBc-positive specimens 12 (16.7%) were repeatedly HBsAg-reactive in EIA kit with sensitivity 0.01 IU/ml. The results was confirmed by the neutralization assay. 33.3% of them were anti-HBc-IgM positive. Among anti-HIV positive samples (n=72) 14 specimens were repeatedly detected as HBsAg positive by EIA kit with sensitivity 0.01 IU/ml. Out of 14 specimens 12 contained HBV DNA. One HBV DNA-negative sample shown presence of anti-HBc, anti-HBc-IgM and anti-HBe, another contained anti-HBc. **Conclusion:** The improvement of sensitivity of the currently available kits for HBsAg detection will allow more effectively detect HBsAg in samples which tested negative now. The high sensitivity of HBsAg detection will raise quality of screening of blood donor, will allow to reduce the risk of posttransfusional hepatitis B infection.