



Poster Exhibition Presentation

### PE13/15 - The Advantages of EIA Assay with Improved Sensitivity for Laboratory Diagnostics of Latent HBV Infection in HIV-positive Individuals

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**Objectives:** HBV/HIV coinfection due to suppression of virus replication can reduce of HBsAg concentration in the serum below the level of detection of commercially available EIAs (0.05-0.1 IU/ml). The aim of the study was to evaluate the ability of highly sensitive assay DS-EIA-HBsAg-0.01 (CE<sub>0483</sub>) (0.01 IU/ml Second International Standard for HBsAg, NIBSC code: 00/588) intended for detection and confirmation of HBsAg to diagnose occult HBV infection in HIV-positive individuals.

**Methods:** The collection of anti-HIV-positive samples (n=1007) was analysed by the DS-EIA-HBsAg-0.01 assay. The presence of HBsAg was confirmed by neutralization. Comparative evaluation HBsAg-positive specimens were performed by assay with routine level of sensitivity. Additionally all HBsAg-positive specimens were characterized for HBV-specific serological markers.

**Results:** Among 1007 anti-HIV-positive samples 63 samples were repeatedly reactive with DS-EIA-HBsAg-0.01. Only 41 samples were detected as HBsAg- positive by commercial available assay with routine sensitivity limit 0.05-0.1 IU/ml. Out of 41 samples which are HBsAg-positive in both assays, 19 samples showed the serological profile of chronic HBV infection (anti-HBc, anti-HBe). The serological profile of 6 samples were compatible with that of chronic HBV infection with aggravation (anti-HBc, anti-HBc-IgM, anti-HBe). 3 samples have the serological markers of chronic HBV infection with active replication (anti-HBc, anti-HBe, HBeAg). Six samples additionally to HBsAg were anti-HBc positive and rest 9 samples were HBsAg positive only. Out of 22 samples which were detected as HBsAg positive only by high sensitive assay 11 also were additionally anti-HBc-positive, 8 of them additionally contained anti-HBe. Other 11 samples were positive only for HBsAg in low concentration and negative for any other HBV serological markers.

**Conclusion:** The EIA assay for HBsAg detection with improved level of sensitivity allow more effectively reveal HBsAg in samples from HIV/HBV coinfecting patients. More proper diagnostics of latent HBV infection allows apply correct treatment for HIV/HBV positive individuals.

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