

O213

2-hour Oral Session

New insights in viral hepatitis

### Clearance of HBV DNA in immunized children born to HBsAg positive mothers, years after being diagnosed with occult HBV infection

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**Background:** Occult hepatitis B virus (HBV) infection is a well-recognized clinical entity characterized by the detection of HBV DNA in serum and/or in liver in the absence of detectable hepatitis B surface antigen (HBsAg). Aims of this study were to determine the prevalence of occult HBV infection in a high risk group of children who developed HBV infection despite immunoprophylaxis and to explore the maintenance of this cryptic condition in this population.

**Material/methods:** The sera of 75 children born to HBsAg-positive mothers previously immunized by HBIG and prophylactic vaccine regimen were assayed for HBV DNA by real-time PCR. Subsequently, the samples were tested by a sensitive standard PCR employing independent set of primers for all HBV genes and analyzed by direct sequencing.

**Results:** In initial sampling (2009), HBV DNA was detected in 21/75 (28%) of children, ranged between 77 and 9240 copies/mL. The mean age ( $\pm$ SD) of studied patients was  $3.57 \pm 2.75$  years. All were positive for anti-HBs. Five (24%) were found to be positive for anti-HBc, and anti-HBc-only positive individual were not observed. Eight isolates (38%) did not contain any mutation. Other 13 infected children (62%) contained at least one mutation in regions known to be involved in functional and/or immune epitope activity. 10 were contained G145R mutations. In the last follow up (2012), of 21 OBI-positive, 17 children were enrolled. The mean ( $\pm$ SD) age was  $6.57 \pm 2.75$  years. All children still were negative for HBsAg. However, all but one (94%) were negative for HBV DNA. The results of the most recent anti-HBs titration showed that 4 (23.5%) and 13 (76.5%), had low ( $<10$  IU/mL) and adequate ( $>10$  IU/mL) levels of anti-HBs, respectively. The only still OBI-positive patient had an HBV DNA level of 50 copy/mL, carried the G145R mutation. Further follow up showed that after 18 months (2013) he was negative for HBV DNA.

**Conclusions:** HBsAg negativity is not sufficient to completely exclude HBV DNA presence. HBV occult infection seems to be relatively frequent in immunized children born to HBsAg-positive mothers. However, the initial HBV DNA positivity early in the life (vertical infection), does not necessarily indicate a prolonged persistence of HBV DNA (occult infection). Adequate levels of anti-HBs after

vaccine and HBIG immunoprophylaxis following birth could eventually clear the virus as time goes by. Periodic monitoring of these children at certain time intervals is highly recommended.