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Serum hepatitis B surface antibody (HBs-Ab) levels in Iranian autistic children and evaluation of immunological memory after booster dose injection in comparison with controls

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Background: Responsiveness to hepatitis B vaccine among autism spectrum disorders (ASD) patients has not been evaluated worldwide. We aimed to determine the persistence of anti-HBs antibody in autistic and healthy children after primary vaccination and to evaluate their anti-HBs status after booster dose administration.

Methods: 107 and 147 healthy children from ASD and normal population were recruited, respectively. Hepatitis B virus (HBV) serological markers were assessed and subsequently, molecular tests were employed on all subjects regardless of HBV serological profile results. A booster dose of vaccine was injected for those who showed low levels (<10 mIU/mL) of anti-HBs and their antibody levels was measured 4 weeks afterwards.

Results: The mean ages of ASD and control groups were 7.14±2.42 and 8.68±1.96 respectively. Seven (6.5%) of ASD group were positive for anti-HBc and one child was positive for occult hepatitis B infection (HBsAg negative, HBV DNA positive). In ASD, 54 (50.5%) and 53 (49.5%) had adequate (>10 mIU/mL) and low anti-HBs levels, respectively. Among control group, 74 (50.4%) and 73 (49.6%) had sufficient and low antibody levels, respectively. The mean antibody titers were 42.37±82.9 and 47.98 ±90.08 mIU/mL for ASD and control groups, respectively (P>0.05). After injection of a booster dose for all children with low antibody, 100% of ASD and 92% (59 of 64) of control pupils contained >10 mIU/mL of antibody, respectively. The mean antibody levels were 239.36±286.8 and 272.92±225.8 for the former and the latter groups, respectively. In both groups, the HBs-Ab titer increased similarly in response to the booster injection (P<0.05).

Conclusion: In spite of decrease in HBsAb titers with increasing age among ASD children, they responded to booster vaccine. Despite previous investigations regarding immune impairment in individuals with autism, the immune system of these individuals was able to manage the challenge of the hepatitis B vaccine.

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