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Efficacy of HBVneonatal vaccination, catch-up vaccination and adolescence booster on Chronic HBV infection in rural area of China

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Infection with hepatitis B virus (HBV) in infancy or early childhood leads to a high rate of chronic HBV infection that is the main cause of primary liver cancer (PLC) and end-stage cirrhosis in China. Controlling chronic HBV infection through universal neonatal HBV vaccination is instrumental. From Jan 1, 2002 HBV vaccination was integrated the nationwide expanded program of immunization with vaccines provided entirely by the Chinese Government. During the 1980s, we conducted a population-based, cluster-randomized, controlled trial of HBV vaccination in Qidong, China (QHBIS) when HBV vaccine was unavailable to the rural Chinese population. In this study approximately 40000 new borns were randomly assigned to the vaccination group, 40000 newborns were randomly assigned to the control group. In 2000-2001 the participants in the control group received 3-dose catch-up vaccination and the participants in the vaccination group received one-dose booster. We examined the efficacy of neonatal vaccination, catch-up vaccination and adolescence booster on chronic HBV infection. Our study demonstrated that neonatal vaccination has a significantly protection against PLC development and in decreasing the mortality rate of severe end-stage chronic liver diseases in young adults. Catch-up vaccination received at age 10-14 years reduced HbsAg seroprevalence in young adults with roughly 20% efficacy much lower than neonatal vaccination (with 72% efficacy). A total of 9714 fully vaccine-protected children were serologically re-surveyed at adulthood. Fifty-five adults (0.57%) became HBsAg-positive status, suggestion of HBV breakthrough infection. One-dose adolescence booster showed protective to those born to HBsAg-positive mothers after completing the HBV neonatal vaccination series.

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First evidence of Hepatitis B virus (HBV) infection in free ranging Neotropical primates, Rondonia, Brazil

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There is a knowledge gap on the occurrence and prevalence of Hepatitis B virus (HBV) in free ranging New World Primates (NWP). Different HBV genotypes have been isolated in all Old World Apes and only one strain has been found in a zoo kept New World monkey (woolly monkey). In this study we carried out the first systematic investigation of the presence of HBV in free ranging NWP in Rondonia State, western Brazil. Our objective was not only to isolate this virus for the first time in NWP but also, if found, to investigate its phylogenetic relationship with other known Human and Non Human HBV. 35% of our wild caught primates tested positive for HBV. We sequenced 400 bp of the S gene of four of our samples. Our phylogenetic analysis revealed that all four samples shared a recent common ancestor with the human cosmopolitan strain, HBV A. Based on our results, we suggest that the positive NWP samples were infected by strains brought in by human immigrants to this part of Brazil. Due to continued habitat fragmentation in many parts of Brazil, humans are increasingly encroaching previously remote forest areas, which is the case of Rondonia State where nearly 80% of the original forest cover has been eliminated in several municipalities. We believe that there is a greater potential for the transmission of HBV between Human and Non Human primates in these areas. In conclusion this is the first description of HBV infection in non-human primates in the Amazon region. It shows that further studies are needed to understand the occurrence, prevalence, distribution and epidemiological importance of the region.

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