Neonatal HBV vaccine reduces liver cancer risk

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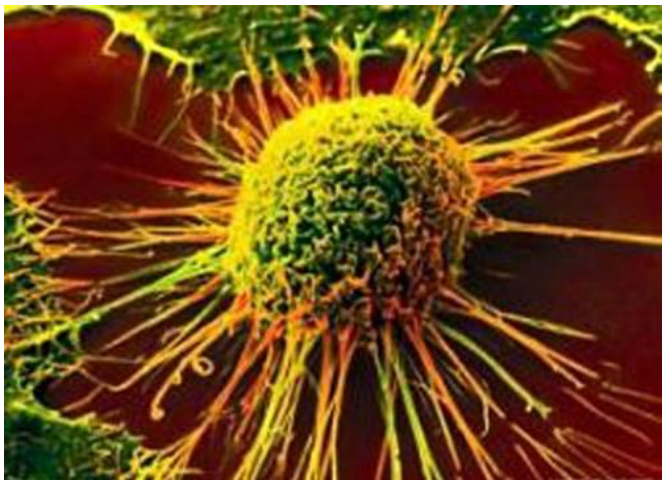

Neonatal HBV vaccination reduces the risk of liver cancer and other liver diseases in young adults in China, according to a study published by Chunfeng Qu, Taoyang Chen, Yawei Zhang and colleagues from the Cancer Institute & Hospital at the Chinese Academy of Medical Sciences, Qidong Liver Cancer Institute, China, and Yale School of Public Health and School of Medicine, USA in this week's *PLOS Medicine*.

The researchers report long-term outcomes from the Qidong Hepatitis B intervention Study (QHBIS), a randomized controlled trial of neonatal HBV vaccination that was conducted between 1983 and 1990 in Qidong County, a rural area in China with a high incidence of HBV-related primary liver cancer (PLC) and other liver diseases. In this study, 41 rural towns (including a total of 77,658 newborns over the study period) were randomized to the intervention (HBV vaccination for all newborns) or control (no vaccination) groups, with two-thirds of the control group participants receiving a catch-up vaccination at age 10-14 years.

By collecting data on new cases of liver diseases over 30 years from a population-based tumor registry, the researchers estimated that the protective efficacy of vaccination was 84% for primary liver cancer (vaccination reduced the incidence of liver cancer by 84%), 70% for death from liver diseases, and 69% for the incidence of infant fulminant hepatitis. Based on survey data collected in 1996-2000 and 2008-2012 on HBsAg seroprevalence, an indicator of current hepatitis B virus (HBV) infection, they conclude that the efficacy of the catch-up vaccination on HBsAg seroprevalence in early adulthood was weak compared to neonatal vaccination (21% versus 72%). While these findings support the importance of neonatal HBV vaccination, the small number of cases of primary liver cancer and other liver diseases observed during the 30-year follow up, the length of follow-up, and the availability of incomplete data on seroprevalence all limit the accuracy of these findings.

The authors say: "Neonatal HBV vaccination significantly decreased HBsAg seroprevalence in childhood through young adulthood and subsequently reduced the risk of PLC and other liver diseases in young adults." They continue: "Our results also suggest that an adolescence booster should be considered in people who were born to HBsAg-positive mothers and completed HBV neonatal vaccination series."

More information: Qu C, Chen T, Fan C, Zhan Q, Wang Y, et al. (2014) Efficacy of Neonatal HBV Vaccination on Liver Cancer and Other Liver Diseases over 30-Year Followup of the Qidong Hepatitis B Intervention Study: A Cluster Randomized Controlled Trial. *PLoS Med* 11(12): e1001774.DOI: 10.1371/journal.pmed.1001774