Hepatitis B immunization program in Taiwan associated with reduction in chronic liver disease deaths

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"Hepatitis B virus (HBV) infection causes infant fulminant hepatitis (IFH), and chronic HBV infection may progress to chronic liver disease (CLD) and hepatocellular carcinoma (HCC). Taiwan launched a nationwide HBV immunization program for newborns in July 1984, which has successfully lowered the prevalence of chronic HBV carriers, incidence of HCC, and mortality of IFH in vaccinated birth cohorts. The mortality of CLD before and after HBV immunization has never been examined," write Chun-Ju Chiang, Ph.D., of National Taiwan University, Taipei, and colleagues.

As reported in a Research Letter, the authors assessed the 30-year outcomes of the immunization program. From July 1984 to June 1986, the immunization program covered only newborns with high-risk mothers who were seropositive for HBV surface antigen. Coverage was extended to all newborns in July 1986, preschool children in July 1987, and primary school children in 1988-1990. Recombinant HBV vaccines replaced plasma-derived vaccines in 1992. The immunization coverage rates for birth cohorts from 1984 to 2010 was 88.8 percent to 96.9 percent. The mortality of IFH, CLD, and HCC and the incidence of HCC were compared among birth cohorts born before and after the launch of the program.

The researchers found that from 1977-1980 to 2001-2004, the age- and sex-adjusted rate ratios for individuals 5 to 29 years of age decreased by more than 90 percent for CLD and HCC mortality and by more than 80 percent for HCC incidence, which were higher than the previously reported reduction (70 percent) in HCC incidence for youth 6 to 19 years of age.

The mortality of IFH in vaccinated birth cohorts decreased by more than 90 percent from 1977-1980 to 2009-2011, which was greater than the previously reported reduction (approximately 70 percent) from 1975-1984 to 1985-1998. "This long-term, high-coverage immunization program was associated with lower IFH mortality through increasing individual and herd immunity of vaccinated cohorts."

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