

Antibody Levels 20 Years After Receipt of Hepatitis A Vaccine

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Summary: New findings show Hepatitis A vaccination protects for at least 20 years.

Abstract:

Background: CDC recommends hepatitis A virus (HAV) vaccination for children ≥ 1 year, and for high-risk adults. HAV vaccine is effective; however, the duration of protection is unknown.

Methods: We evaluated a cohort of Alaska Native persons 20 years after HAV vaccination. Previously, children aged 3–6 years were randomized to receive 3 doses of HAV vaccine (360 ELISA units/dose) at: A) 0,1,2 months; B) 0,1,6 months; and C) 0,1,12 months. We measured anti-HAV antibody concentrations every 2–3 years and described geometric mean concentrations (GMC), and the proportion with protective antibody (≥ 20 mIU/ml), over time. We modelled change in GMC for the entire cohort using fractional polynomial regression.

Results: Of 144 participants, 52 (36.1%) were available for follow-up (17, 18, 17 children in Groups A, B and C, respectively). Overall, 88.5% (95% confidence interval (CI): 76.6–95.6%) of participants had protective antibody levels, including 76.5% (CI: 50.1–93.2%) in Group A, 94.4% (CI: 72.7–99.9%) in Group B, and 94.1% (CI: 71.3–99.9%) in Group C. GMC levels were lower in Group A (60; CI 34–104) than in Group B (110; CI 68–177), or Group C (184; CI 98–345) (B versus C: $p=0.168$; A versus B/C: $p=0.011$). There was no difference between groups after adjusting for peak antibody levels post vaccination ($p=0.579$). Overall GMC at 20 years was 107 mIU/mL (CI: 77–147 mIU/ml); we predicted a GMC of 97 mIU/ml after 25 years.

Conclusions: HAV vaccine provides protective antibody levels 20 years after childhood vaccination. Lower antibody levels in Group A may be explained by a lower initial peak response. Our results indicate a booster vaccine dose is unnecessary for at least 25 years.