Abstract

Aims: To determine (1) the long-term immunogenicity and the decay rate of anti-HBs of universal hepatitis B vaccination; (2) whether anti-HBs levels measured by EIA was closely associated with those assayed by RIA methods.
Scopes: A group of 1337 apparently healthy children (696 boys and 641 girls) who were vaccinated against HBV in infancy and followed annually for anti-HBs by RIA method since age 7 years entered this study. In addition, 1861 serum samples from 922 persons were analyzed for anti-HBs also by EIA at age 13-15 years. Antibody titers was quantified by EIA in mIU/ml, and assayed as count ratio of sample to negative control (S/ N) by RIA, respectively. There was a good correlation between serum anti-HBs levels measured by RIA and EIA methods ($r = 0.92$, $p < 0.0001$). An equation of RIA to EIA level conversion was established. In this study, the range of S/ N was between 185.15 and 0.16, suggesting generally low levels of anti-HBs at age 13-15 years. In non-boosted children, the decay of anti-HBs showed one year of increase in time induces a 1.4-fold reduction of geometric mean titer during age 7 to 15 years.
Conclusion:
These results suggest that the anti-HBs titers measured by EIA can correlate well with S/ N assayed by RIA. The annual decay rate of log anti-HBs level may be used to plan revaccination of hyporesponders or individuals at risk in adolescence.

Keywords：anti-HBs；RIA；EIA；antibody decay rate