Long term serological response to Vi vaccine and protective immunity

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Abstract

Following a large randomized double-blind clinical trial of Vi capsular polysaccharide versus placebo conducted in 1985, we were able to identify 83 subjects 10 years later. These individuals were aged 15 to 18 years and Vi antibodies were measured by radioimmunoassay in the 40 individuals who had previously received typhoid vaccine and 43 individuals who had previously received meningococcal control capsular polysaccharide. The proportion of children with antibodies above a presumed protective level of ≥1 μg/ml was 58% in both groups. The proportion of children with Vi antibodies ≥1 μg/ml in the Vi vaccinated group were similar to that found in a previous study of children from this study tested three years after immunization. The proportion of children with protective antibody in the control group had increased significantly during the 7 additional years in which these children had lived in a typhoid-endemic area. These data suggest that Vi vaccine may still be protective 10 years after vaccination but ongoing exposure to typhoid fever conveys significant levels of protective antibody amongst unvaccinated children by the age of 15-18 years. This study suggest that Vi antibodies are commonly elevated amongst individuals living in typhoid-endemic areas and are not only associated with recent infection or chronic carriage. Further studies on the long term immunogenicity of Vi vaccination are indicated in individuals living in non-endemic areas.