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ELSEVIER FULL-TEXT ARTICLE

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Waning antibodies in measles and rubella vaccinees--a longitudinal study.

Kremer JR[1], Schneider F, Muller CP.

Author information

1 Institute of Immunology and WHO Collaborative Centre for Measles and WHO European Regional Reference Laboratory for Measles and Rubella, Laboratoire National de Santé, 20A, rue Auguste Lumière, L-1011, Luxembourg.

Abstract

The evolution of measles- and rubella-specific serum IgG was followed in a longitudinal study in 224 young adolescent vaccinees, with or without boost vaccination before or during the 6.8-year observation period. Antibody titres were monitored by enzyme immuno assay (Enzygnost, Dade-Behring). After revaccination (second dose) rubella seropositivity rate increased from 92.1 to 100%, whereas measles seroprevalence (about 90%) did not significantly change between the paired sera. Significantly higher IgG (> three-fold) in the second serum of 5.2% (measles) and 7.8% (rubella) of participants with low antibodies (measles: < 1500 mIU; rubella < 40 IU) in first serum, suggest a secondary immune response (SIR) during the study period, only partially explained by revaccination. Excluding individuals with SIR, minimal annual antibody decay rates of -2.9% (confidence interval, CI: -0.7 to -4.8%) for rubella and -1.6% (CI: -0.1 to -3%) for measles were determined in participants with single dose vaccination. Thus, two-dose vaccination was adequate to protect women from rubella infection at least during childbearing age. Similarly only few individuals may become seronegative for measles again after successful vaccination due to minimal waning of low antibody levels (< 1500 mIU). However, as a result of a more rapid decay of high-titre (> 1500 mIU) antibodies (-2.4%/year), many vaccinees may eventually become susceptible to vaccine-modified measles (VMM) and consequently complicate measles control strategies.

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