

MEASLES ELIMINATION IN DEVELOPING COUNTRIES: HIGH TIME TO CHANGE THE STRATEGY

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Measles remains one of the world's largest public health problems especially in developing countries. Current guidelines in these countries recommend vaccination at 9 months of age expecting infant protection through maternal (transplacental) antibodies till then. More recently, second and third doses of measles containing vaccine have been introduced at 12-15 months and 4-6 years. However, clinical experience confirms occurring of measles even before 9 months of age. Prospective cohort studies were conducted by my research group in 2005 and 2015 (coinciding with 20 and 30 years of universal vaccination in India) to evaluate measles susceptibility in infants and to identify the appropriate age for vaccination. In these studies, anti-measles IgG antibodies were measured by quantitative ELISA in 60 and 130 infants at birth, 3 months, 6 months, and 9 months (prior to vaccination). Susceptibility was determined by antibody titre <200 mIU/ml. The first study (2005) showed that 0%, 12%, 51% and 100% infants were susceptible at birth, 3 months, 6 months and 9 months respectively. The second study (2015) confirmed susceptibility in 0%, 23%, 84%, and 100% infants. Preterm infants were more susceptible than term infants at 3 months and 6 months. More recently in 2018, we have concluded a larger study with over 200 infants and observed similar findings. Emerging data from China also suggest a similar situation. These data suggest that most Indian and Chinese infants become susceptible to measles well before the age of vaccination. Further the two time series showed that more infants were susceptible in recent years than 2005; this could be due to greater proportion of mothers having vaccine-induced immunity than natural immunity. These data argue for earlier (rather than later) vaccination with measles vaccine in India, China and probably other developing countries also. This necessitates an urgent, evidence-based change in the guidelines and the overall strategy.

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