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8th World Congress on

Virology

November 28-30, 2016 San Antonio, USA

Elimination of measles through routine vaccination in India and other developing countries: Time to deliver old wine in a new bottle!

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Despite three decades of universal infant measles vaccination, India has the world's largest measles burden. Vaccination in India (as in most developing countries) is timed at 9 months of age expecting infant protection through maternal (transplacental) antibodies till then, although this has not been proven scientifically. We conducted two prospective cohort studies in 2005 and 2015 (coinciding with 20 and 30 years of universal vaccination) 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 titer <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 that term infants at 3 months and 6 months. These data suggest that most Indian infants were susceptible in 2015 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 and probably other developing countries also. This novel approach resembles serving old wine in a new bottle.

Biography

Joseph L Mathew works at the Advanced Pediatrics Centre, Postgraduate Institute of Medical Education and Research, Chandigarh, India. He has contributed extensively to evidence-based policy-making for several vaccines in the Indian context, especially hepatitis B, Hib, IPV, MMR, PCV, influenza, varicella, acellular pertussis, HPV, rotavirus and typhoid conjugate vaccines. He is one of the first to identify the rapid waning of maternal measles antibodies in infancy, creating a pool of susceptible infants/children. He has nearly 200 peer-reviewed publications to his credit and delivered numerous presentations related to vaccinology in national and international meetings.

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