A Seroepidemiological Survey for Pertussis among Adolescents

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Received: 15 September 2020 / Accepted: 5 February 2021 / Published online: 17 January 2021
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To the Editor: Pertussis is a highly contagious vaccine preventable disease caused by *Bordetella pertussis*. Waning of childhood vaccination-induced immunity has resulted in pertussis infection among adolescents in many countries. They, in turn, are a source of infection especially for young children in the community [1]. There is little epidemiological data on the prevalence of pertussis among adolescents in India. Hence, a prospective cross-sectional study was conducted from August 2015 to October 2017. Venous blood samples were collected from adolescents aged 10 to 19 y. Immunoglobulin G (IgG) antibody titer against pertussis toxin (PT) was estimated by enzyme-linked immunosorbent assay (ELISA). Titers ≥ 62.5 to < 125 IU/mL and ≥ 125 IU/mL were considered to correspond to 1 y and 6 mo post pertussis infection, respectively and titer < 5 IU/mL indicated undetectable levels [2].

A total of 281 subjects were recruited. All had received the primary vaccines and one booster dose with diphtheria, pertussis, tetanus (DPT). Second booster was taken by 120 (42.7%) and a third in adolescent age by 15 (5.3%) participants. Anti-PT mean antibody levels were 9.5 IU/mL (95% CI 8.4–10.6 IU/mL). Evidence of pertussis infection in the previous year was observed in 11 (3.9%), and in the previous 6 mo in 8 (2.8%), whereas undetectable IgG were recorded in 153 (54.4%) adolescents.

In the present study, around 7% of adolescents had evidence of recent infection and they could act as a reservoir to unimmunized or partially immunized infants and children [3]. This is significant as 54% of the adolescents tested had no detectable antibodies, suggesting waning immunity and susceptibility to pertussis, which can lead to periodic epidemics as suggested by Campbell et al. [4]. These findings suggest that, administration of one booster dose of pertussis vaccine to all Indian adolescents, as recommended by vaccine advisory bodies is justified [1].

Declarations

Ethical Clearance The study was approved by the Institutional Review Board, Christian Medical College, Vellore (IRB Min No: 8348 dated 26.06.2013).

Conflict of Interest None.

Funding Institutional Review Board, Christian Medical College, Vellore (IRB Min No: 8348, 26.06.2013).

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Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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