

Boostrix

A study by Bose, *et al.*(1) regarding DTPa and a study by Bavdekar, *et al.*(2) regarding DTPw merit some pertinent observations.

Both studies concluded that the vaccine is safe and well tolerated by the Indian infants or the Indian pre-school children. Authors of the DTPa study also conclude that: “though no direct comparison has been made with DTPw vaccine in the current study, the observed adverse effect profile appears to be better than that reported with DTPw vaccine in this age group”(1). However, the occurrence of pain was similar in both studies; swelling was lesser in the DTPa group. The differences could be attributed to different muscle mass in different age groups in the 2 studies and the quantity of pertussis in the two vaccines. Thus, the assertion by Bose, *et al.*(1) does not appear conclusive.

One more point which needs attention is that DTPa has reduced quantity of diphtheria and pertussis antigens. Such a vaccine is recommended for adolescents and adults and not for preschool children. Studies done in pre-school children in Thailand, Taiwan and United Kingdom cited by authors(1) have been published between 2003 and 2005. Followup of these children will tell if reduced quantities of diphtheria and pertussis antigens provide long term protection. The Committee on Infectious Diseases of American Academy of Pediatrics states that minimum age for Boostrix is 10 years and for Adacel Vaccine 11 years which have reduced quantities of diphtheria and pertussis components(3).

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diphtheria-tetanus-whole cell pertussis-hepatitis B/haemophilus influenzae type b vaccine in Indian infants. *Indian Pediatr* 2007; 44: 505 - 510.

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Reply

Our study was one of the first acellular-pertussis vaccine studies in India to be published in a peer-reviewed journal. Reactogenicity of diphtheria-tetanus-pertussis vaccines have largely been attributed to whole-cell pertussis components, and are significantly reduced in similar combination acellular pertussis vaccines(1). Reactions increase with age: A driver for the development of acellular-pertussis vaccines was the unsuitability of whole-cell vaccines to boost older persons(2).

Our study vaccine included a low-dose pertussis component, specifically for boosting, comprising approximately 33% of the antigen content in DTPa priming vaccines. This is possible without compromising protection because an immunogenic response from a primed immune system requires less antigen concentration than a naïve system. Hence, the likelihood of vaccine adverse reactions is reduced further.

Therefore, despite any similarity in proportions suffering reactions, it is not appropriate to compare our results with those of any studies involving infants. The incidence of reactions one would have expected using whole-cell pertussis vaccines in pre-schoolers is significantly greater than that observed in our study. This has been confirmed in head-to-head studies, comparing the booster formulation vaccine against a diphtheria-tetanus-whole cell pertussis vaccine in pre-schoolers: there was a highly significant difference in reactogenicity ($P < 0.001$) in favour of the booster vaccine(1). In our experience, the lack of a single reported case of high fever ($>39.1^{\circ}\text{C}$) in a clinical study of pre-schoolers given any pertussis vaccine (as observed in our study) is unique in India. Additionally, the Thai and Israeli studies referenced in our paper found no compromise in diphtheria or tetanus protection in pre-