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Reduced-Antigen Combined Diphtheria-Tetanus-Acellular Pertussis Vaccine (Boostrix™)

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The reduced-antigen diphtheria-tetanus-acellular pertussis vaccine (dTpa; Boostrix™[1]) is a new vaccine for children (>4 years of age), adolescents and adults. It combines reduced-antigen diphtheria and tetanus toxoids with a three-component acellular pertussis vaccine (pertussis toxin, pertactin and filamentous haemagglutinin).

In clinical trials, dTpa has shown moderate reactogenicity, with local adverse events being the most frequent; pain occured in about three-quarters of those vaccinated, redness and swelling in about one-third. Systemic symptoms (fatigue, headache, fever) have also been reported. All symptoms have been self-limited and their frequency is similar to those observed with traditional reduced-antigen diphtheria-tetanus vaccines (Td) and a similar acellular pertussis vaccine (ap). No serious adverse events, in particular no neurological problems, have been reported.

Clinical trials comparing dTpa with a similar ap vaccine and licensed Td vaccines, have found no difference in the immunogenicity of the pertussis and diphtheria components. Titres against tetanus toxoid were lower with dTpa compared with Td, but were higher than those considered protective. Also, the proportion of subjects with protective levels of antitetanus antibodies was similar with both vaccines.

In summary, dTpa is highly immunogenic and has an excellent tolerability profile for use in adolescents and adults. It is recommended as a booster at 10-year intervals after primary immunisation. This vaccine might play an important role from a public health point of view as it could protect not only vaccinated subjects through a booster of their waning immunity, but also it might indirectly protect infants, the most vulnerable population for pertussis morbidity and mortality. The challenge now is to find the best way to obtain a wide coverage of this vaccine in age groups that are difficult to immunise in a systematic way. It seems reasonable to focus vaccination toward high-priority target groups such as adults in close contact with infants. ▲

1 Use of tradenames is for product identification purposes only and does not imply endorsement.