

INFECTIOUS DISEASE

Typhoid vaccine effective

Typhoid fever is a major cause of illness and death, especially in developing countries. The Vi typhoid vaccine is effective in young children and protects unvaccinated neighbors of vaccinees, according to a recent study in the *New England Journal of Medicine*.

The phase 4 effectiveness trial included residents of an urban slum in Kolkata, India who were aged ≥ 2 years. The investigators divided the slum area into 80 geographic clusters, and clusters were randomly assigned to receive one intramuscular dose of either Vi vaccine (2.5 μ Vi polysaccharide) or inactivated hepatitis A vaccine as a control.

A total of 37,673 people received a study vaccine. The mean rate of vaccine coverage of clusters was about 60%, and was similar for each vaccine group. Typhoid fever was diagnosed by blood culture in 96 people in the control group

and 34 people in the Vi vaccine group. The level of protective effectiveness for the Vi vaccine was 61%. Children aged 2–5 years had an 80% level of protection. Vi vaccine provided a significant indirect protection against typhoid fever among unvaccinated residents of Vi vaccine clusters, with a level of protective effectiveness of 44%.

Children under 5 years of age are at high risk for typhoid fever in many areas where the disease is endemic, so protection for this group is important. The indirect protection of nonvaccinees is also encouraging, and should be borne in mind when considering use of this low-cost vaccine in developing countries.

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Original article Sur, D. *et al.* A cluster-randomized effectiveness trial of Vi typhoid vaccine in India. *N. Engl. J. Med.* **361**, 335–344 (2009).