Effectiveness of conjugated typhoid fever vaccine in Harare, Zimbabwe

Maria Lightowler, Epicentre, France

Background

Zimbabwe has suffered regular outbreaks of typhoid fever, with most of the reported cases concentrated in Harare, the capital city of the country. Typhoid fever might have become endemic in Harare with many cases reported annually since 2010. Many suburbs of Harare notify cases and since October 2017, the incidence has substantially increased.

Objectives

The main objective was to estimate the vaccination effectiveness of the typhoid conjugate vaccine (TCV) used as a part of the large mass vaccination campaign in response to the Typhoid fever regular outbreaks in Harare and conducted in March 2019.

Methods

A case-control study, using 2 sets of controls (facility matched controls and community matched controls) in 3 urban suburbs of Harare known for being prone to typhoid fever outbreaks and targeted by the TCV vaccination campaign.

Participants

Of the 502 suspected cases enrolled in 4 health facility sites in Harare from July 2019 to March 2020, 148 laboratory-confirmed typhoid fever cases and 153 controls confirmed negative were identified. 105 (47 between 6 months to 15 years old) confirmed cases were age sex and residence place 1:1 matched with 105 facility-based controls matched. 96 confirmed cases were 1:5 age sex and immediate neighbour matched with 229 community controls.

Results

In the primary analysis, the adjusted VE estimation for one dose of TCV was 75.2% (95% CI, 0.6 to 93.8) when confirmed typhoid fever cases were matched with facility controls and 81.0% (95% CI, 46.5 to 92.9) when matched with community controls.

Conclusions

This study confirms that one vaccine dose of TCV can be an effective tool to control Typhoid fever in the population between 6 month and 15 years old and provides information on an African setting after the first mass vaccination campaign in the continent providing information under real life conditions.

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