Potential of typhoid conjugate vaccines in Kenya

Typhoid, a serious enteric fever spread through contaminated food and water, is a substantial public health issue that disproportionately impacts children and marginalized populations in Asia and sub-Saharan Africa. The Global Burden of Disease (GBD) study estimates that, in 2017, there were nearly 11 million typhoid cases and more than 116,000 typhoid deaths worldwide.\(^1\) Additionally, strains of drug-resistant typhoid are spreading, causing global concern.\(^2\)

**TYPHOID CONJUGATE VACCINES**

Typhoid vaccination can reduce the need for antibiotics, slow expansion of drug-resistant strains, and save lives. Newly licensed and World Health Organization (WHO)-prequalified typhoid conjugate vaccines (TCVs) have several advantages over earlier typhoid vaccines. They:

- provide longer-lasting protection;
- require only one dose; and
- are suitable for young children over 6 months.

These qualities will allow better protection for younger children and expanded coverage through inclusion in routine childhood immunization programs.

**WHO RECOMMENDATION AND GAVI SUPPORT**

In March 2018, WHO recommended that typhoid-endemic countries introduce prequalified TCVs into routine childhood immunization programs as a single dose for infants and children over 6 months of age, accompanied by catch-up vaccination campaigns for children up to 15 years of age, where feasible. Additionally, WHO recommended prioritizing countries with a high burden of disease and/or a growing burden of drug-resistant typhoid, and in response to confirmed typhoid outbreaks. Gavi, the Vaccine Alliance has earmarked US$85 million to support the introduction of TCVs into routine immunization programs and is accepting applications for financial support, with introductions anticipated as soon as 2019.

**AN OPPORTUNITY FOR KENYA**

TCVs could have a substantial benefit in Kenya, where typhoid inflicts a significant public health burden. The GBD estimates that, in 2017, Kenya had:

- 101,400 typhoid cases or 210 cases per 100,000 population, 59 percent of which were among children under 15 years of age; and
- 1,205 typhoid deaths, 60 percent of which were among children under 15 years of age.\(^1\)

Typhoid likely also imposes an economic burden in Kenya. While costs of illness have not yet been evaluated for Kenya, analyses from other settings in sub-Saharan Africa have found that the average costs of a typhoid case borne by families can amount to two months of average family income.\(^3\) Preliminary findings from an economic analysis predict that, even in the absence of a Gavi subsidy, a catch-up campaign followed by routine childhood immunization with TCVs would potentially be cost-effective in Kenya.\(^4\)

**References**