Vaccines for preventing rotavirus diarrhea

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The latest update of the Cochrane review "Vaccines for preventing rotavirus diarrhea: vaccines in use" has found that rotavirus vaccines pre-qualified by the World Health Organization (WHO) (Rotarix, RotaTeq, Rotasiil, and Rotavac), prevent episodes of rotavirus diarrhea in children and no increased risk of serious adverse events was found.

Rotavirus infection is a common cause of diarrhea in infants and in young children, and can cause mild illness, hospitalization, and death. Since 2009, the WHO has recommended that a rotavirus vaccine be included in all national infant and child immunization programs. To date, 107 countries have followed this recommendation. In the years before infants and children started receiving rotavirus vaccine, rotavirus infection resulted in about 0.5 million deaths per year in children under five years of age, mainly in low- and middle-income countries. This Cochrane Review, processed by the Cochrane Infectious Diseases Group (CIDG) editorial base at LSTM, was first published in 2004 and has been updated five times. In 2012, in consultation with the WHO, the data underwent major restructuring by country mortality rates to reflect the observation that vaccine efficacy profiles are different in countries with different mortality rates.

The 2012, 2019, and 2021 review updates were preceded by systematic reviews commissioned by the WHO Immunization, Vaccines & Biologicals department and were used for WHO policy decisions on rotavirus vaccination schedules. These reviews were carried out by members of the author team and the subsequent Cochrane review updates built on the WHO reviews and vice versa.

The most recent review includes 60 studies: Rotarix (36 trials), RotaTeq (15 trials), Rotasiil (5 trials), and Rotavac (4 trials). The findings were presented at Session 6—Rotavirus Vaccines at the October 2020 SAGE Meeting and was provided to SAGE Members as key background material to inform discussions (access presentation and background materials here). As a result of this SAGE discussions, an updated WHO Rotavirus Vaccine Position Paper was published on 16 July 2021). This position paper provides global advice on rotavirus vaccine policy. In turn, the updated WHO position paper and the supporting background materials support Regional and National Immunization Technical Advisory group discussions which lead to decisions for local rotavirus

vaccine policies.

Lead author Hanna Bergman said, "With this review update the evidence for the efficacy and safety of rotavirus vaccines has once again been strengthened. The two globally established vaccines already have a proven track record and we now have high confidence in the two newer vaccines, all showing similar efficacy in preventing severe rotavirus diarrhea in infants and young children in high-mortality settings. This review also reinforces that more work needs to be done to improve and explore the reasons behind the lower efficacy of rotavirus vaccines seen in high-mortality countries."

More information: Hanna Bergman et al,Vaccines for preventing rotavirus diarrhoea: vaccines in use, *Cochrane Database of Systematic Reviews* (2021). DOI: 10.1002/14651858.CD008521.pub6

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