

PP Cholera vaccines: grading of scientific evidence

I: Safety

Settings: Global

Question: What is the evidence that the currently licensed cholera vaccines (Dukoral™ (≥2 years)* and Shanchol™/ORCVAX/mORCVAX) (≥1 year) are safe?

Conclusion: High level of scientific evidence that the currently licensed cholera vaccines are safe.

* Dukoral is not licensed for children aged <2 years

Quality assessment						Summary of Findings
No of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Quality
2 Dukoral	RCT	No serious	No serious	No serious	No serious	High
3 Dukoral	OBS ¹					
3Shanchol/ORCVAX	RCT	No serious	No serious	No serious	No serious	High

¹Begue et al 1995, Peltola et al 1991; Holmgren J 2004.

Concha A et al (1995) reported on the safety and immunogenicity of two doses of the oral cholera vaccine rBS/WC in a randomized, double-blind, placebo-controlled study in Colombia. Among the 1165 participants aged 1-64 years few symptoms were detected during the 3 days following administration of the initial dose and even fewer followed the second dose, two weeks later.

In two trials Trach DD et al (2002) compared a Vietnamese bivalent (O1 and O139), killed oral whole-cell cholera vaccine (biv-WC) and a commercially available, monovalent (anti-O1) oral recombinant B subunit-killed whole-cell cholera vaccine (rBS-WC) in terms of safety and immunogenicity. In the first trial, 144 Vietnamese adults were randomized to biv-WC with or without buffer, rBS-WC with buffer, or placebo without buffer. In the second, 103 children aged 1-12 years were randomized to biv-WC without buffer, rBS-WC with buffer, or placebo without buffer. None of the regimens was associated with significant side-effects (no adverse events were more frequently detected in the vaccine group than in the placebo group).

In a randomized, placebo controlled study Anh DD et al (2007) assessed the safety and immunogenicity of the reformulated Vietnamese bivalent (O1 and O139) killed, whole-cell, oral cholera vaccine (ORCVAX™ among 144 Vietnamese adults and found that this reformulated vaccine was safe and well tolerated (no adverse events were more frequently detected in the vaccine group than in the placebo group).

Mahalanabis D et al (2008) conducted a randomized, placebo-controlled trial of the reformulated bivalent (O1 and O139), killed, whole-cell, oral cholera vaccine (Shanchol™) in adults and children in a cholera endemic area in Kolkata, India. Adverse reactions during the study were observed with similar frequency among vaccine and placebo recipients in both age groups. Among adults 4% of vaccine- and 8% of placebo recipients and among children 4% of vaccine- and 2% of placebo recipients had at least one adverse event within 28 days of the first dose of the vaccine.

In a pilot study in Lima, Peru, Begue RF et al (1995) studied the safety and immunogenicity of WC/rBS vaccine (Dukoral™) in 541 volunteers aged 2-65 years who received either two doses of the vaccine or Escherichia coli K12 placebo administered in bicarbonate buffered water. Mild post-vaccination gastrointestinal symptoms were reported with equal frequency in both the vaccine and placebo recipients

In a controlled study in Finland, Peltola H et al (1991) studied possible adverse events occurring among 508 tourists who before departure had received either two oral doses of BS-WC or a control. No adverse reactions could be attributed to the vaccine. In fact, gastrointestinal symptoms (mostly mild such as nausea or abdominal discomfort) were commoner among controls than among the vaccinees (p < 0.05).

Holmgren J et al (2004) reviewing clinical trials involving approximately 240,000 participants, found that adverse effects following administration of the oral B subunit-killed whole-cell cholera vaccine were no more common in vaccinees than in placebo recipients (0-24%) and consisted primarily of mild abdominal discomfort or pain or diarrhea, attributed mainly to the buffer solution given to both groups.

References on safety

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