



1. Bacterium Vibrio Cholerae.

In the majority of cases cholera is characterized by acute, profuse watery diarrhoea of 1 or a few days duration. In its extreme manifestation, cholera is a rapidly fatal infectious disease. Within 3-4 hours of the onset of symptoms, a previously healthy person may become hypotensive and die within 6-8 hours. More commonly, fatal cases progress to shock within 6-12 hours with death following in 18 hours to several days.

Mild or moderate dehydration is treated with simple oral rehydration solutions containing salts and glucose (ORS sachets). In severe cases, aggressive intravenous rehydration treatment is required. Although oral rehydration may be life-saving, it has no effect on the course of the disease or prevention of the infection.

Antibiotics are not recommended in the treatment of mild and moderate cholera *or* for mass prophylaxis. However, in severe cases, antibiotics (selection depends on local resistance) may be considered for reducing the duration of symptoms.

2. Cholera vaccine

Oral cholera vaccine is only recommended for populations at *immediate* risk of a cholera epidemic. Vaccination to **prevent** cholera outbreaks should be undertaken only in concert with other prevention and control measures currently recommended by WHO including; education, safe water and sanitation. Vaccination is not recommended to **control** ongoing outbreaks.

2.1 Parenteral vaccine: *Due to its low efficacy and short duration of protection, this is no longer recommended.* Until recently the only cholera vaccine made was from phenol-killed whole cells of V. Cholerae, administered in 2 doses, 2 weeks apart. Unfortunately the protective efficacy against severe dehydration was only 50%, the duration of protection hardly exceeded 6 months, and it does not prevent transmission of the infectious agent.

2.2 Oral killed WC/rBS vaccine: This consists of killed whole-cell V. Cholerae O1, in combination with a recombinant B-subunit of cholera toxin (WC/rBS). It has been marketed since the early 1990s. **Administration:** The vaccine must be diluted with and given with fresh clean water, as per manufacturers instructions. The vaccine should only be given where it can be assured that two doses can be given (10 -14 days apart), as only one dose confers very little immunity. Immunity is conferred within one week of the second dose and may be 50%-60% protection for at least three years for all age groups. However, protection in children aged <5 years may decline more rapidly after 6 months. Protection is not conferred against V. cholerae O139. It has also been shown to be safe in pregnancy and breast feeding. **Adverse effects:** occasional mild gastrointestinal disturbances. **Contraindications:** none known, other than hypersensitivity to any of the components. Data are not available on simultaneous immunization of WC/rBS with other vaccines but there is no theoretical risk prohibiting simultaneous administration. A WHO pre-qualified oral killed cholera vaccine is available with SBL Vaccine AB in Sweden.

2.3 Oral live attenuated CVD 103-HgR vaccine: A live attenuated oral cholera vaccine containing the genetically manipulated classical V. Cholerae strain CVD 103-HgR has been available since 1994. It is a **single dose** vaccine. Numerous trials have established its safety and immunogenicity, even in immunocompromised individuals, but to date no controlled trial proves its effectiveness in endemic situations. Therefore this vaccine should only be used if there is a high risk of contracting cholera, otherwise the killed WC/rBS vaccine should be used instead. **Administration:** A single dose must be given with clean, fresh water, according to manufacturers instructions. The vaccine provides similar protection levels as the WC/rBS for all age groups after seven days of administration, but this may drop sharply after 6 months. No data exists to confirm whether children <2 years of age are protected, but the vaccine has been well tolerated in children as young as 3 months of age. Protection is not conferred against V. cholerae O139. **Adverse effects:** about 2% vaccinees report single episodes of nausea or abdominal cramps. Unfortunately, this vaccine may not be as readily available as the WC/rBS vaccine



3. WHO position on Cholera vaccine

Oral cholera vaccines should be considered for pre-emptive use in high risk populations before a cholera outbreak has occurred, not reactively as a method of containing an outbreak once it has started. Both WC/rBS and CVD 103-HgR vaccines have proved to be safe and without significant adverse effects. Both vaccines require clean, fresh water for administration. Compared to old parenteral vaccine, they provide better and more long-lasting protection against cholera. However, insufficient protection in children aged less than two years old exclude these vaccines from use in national immunization programme.

Convincing protection in field situations has only been demonstrated only with the WC/rBS vaccine to date. However, the WC/rBS vaccine should be considered in populations at risk of cholera epidemic *only* if it can be assured that two doses (10-12 days apart, given with clean water) can be administered. If this cannot be assured due to logistical constraints, then the CVD 103-HgR may be considered, but it should be noted that its efficacy has not been demonstrated in controlled trails in endemic areas. The CVD 103 HgR induces protection 7 days after the single dose.

www.who.int/csr/disease/cholera or www.who.int/emc/diseases/cholera