Oral cholera vaccine for traveler's diarrhea prophylaxis

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Clinical question

Should the oral cholera vaccine be routinely recommended to prevent traveler's diarrhea (TD)?

Bottom line

Randomized controlled trials evaluating oral cholera vaccine for TD did not show a benefit and routine use is not recommended.

Evidence

- In a systematic review of 24 RCTs of vaccines to prevent TD,[1] many studies tested vaccines in cholera-endemic areas (not in travelers) and examined immunologic (not clinical) outcomes.
- An RCT of 502 US college students[2] given oral cholera vaccine or placebo on arrival in Mexico, with a second dose 10 days later, found no difference in all-cause diarrhea (vaccine 51%, placebo 49%) or enterotoxigenic *Escherichia coli* (ETEC) diarrhea (vaccine 14%, placebo 15%).
  -Diarrhea was reduced 7 or more days after the second dose, but this was not confirmed by external reanalysis.[1]
  -Adverse events were not reported.
- An RCT of 187 travelers comparing ETEC vaccine, oral cholera vaccine, and placebo (given at least 7 days before leaving) found no significant difference between groups in all-cause diarrhea (placebo 21%, ETEC vaccine 24%, oral cholera vaccine 27%).[3]

Context

- Diarrhea, usually from ETEC, affects up to 50% of travelers to developing countries.[4-6]
- Risk of cholera is about 1 in 10000 to 1 in 1 million per month abroad.[7]
- A cholera toxin subunit in the vaccine triggers cross-immunity to ETEC,[8] leading to its indication for prevention of TD.[9]
- Most cases of TD resolved spontaneously in 3 to 4 days,[5] but taking antibiotics at onset improved rates of 72-hour cure (84% versus 50%, number needed to treat=3).[10]
- North American guidelines do not recommend the oral cholera vaccine for most travelers.[4,5]
- The vaccine costs about $90 and it is not covered by any provincial health care plans.

Implementation

As most cases of TD are acquired through consumption of contaminated food and water, common-sense recommendations for prevention include self-peeling of fruits and vegetables; consuming fully cooked, hot food; and avoiding tap water, ice, salads, fruit juices, and cold sauces.[5] Travelers to high-risk areas (Middle East, South and Southeast Asia, South America, Central America, and the low-income countries of Africa)[11] can be provided with antibiotics (eg, azithromycin) to self-administer if they develop diarrhea.[12] Bismuth subsalicylate or antimotility agents (eg, loperamide) can also be used provided there is no blood in the stool or fever present.[5,13] Vaccinations for other infectious diseases with high prevalence or potential morbidity (eg, hepatitis A) should be encouraged.[5]

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The opinions expressed in Tools for Practice articles are those of the authors and do not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.

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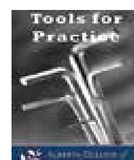

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