

Do you know the Cholera is raising its head now in the north of Iraq? What can you do to protect yourself and your family?

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ABSTRACT

Cholera is an acute bacterial disease caused by the gram-negative bacillus bacteria named *Vibrio cholera* (*V. cholera*) that infects only humans (adults and children) and is characterized by severe water diarrhea, rapid and serious dehydration, and death (1). Cholera is endemic in poor countries mainly in countries with poor sanitation, inadequate hygiene, and lack of clean drinking water. The main way for transmission of Cholera is by ingestion of contaminated food, grasses, and drinking of contaminated water with *V. cholera* (2). In Iraq, where cholera is endemic, sporadic outbreaks have been documented since 19663. Cholera outbreaks have recently been recorded in Iraq. A total of 1,000 confirmed cholera cases and 4 related deaths have been recorded from Iraq as of September 1, 2022. The four governorates with the highest numbers of cases and fatalities are Thi-Qar in the south (55 cases), Baghdad-Rasafa in the middle of Iraq, Kirkuk in the north (480 cases and 3 deaths) and Sulaimnia in the north (391 positive cases in June and 23 in July) (3). Recently over 130 cases of cholera have been confirmed in Sulaimania City and several cases in Erbil City according to the Ministry of Health of Kurdistan Regional Government, Iraq September 14, 2023.

1. Introduction

Cholera is an acute bacterial disease caused by the gram-negative bacillus bacteria named *Vibrio cholera* (*V. cholera*) that infects only man (adult and children) and is characterized by severe water diarrhea, rapid and serious dehydration, and death [1]. Cholera is endemic in poor countries mainly in countries with poor sanitation, inadequate hygiene, and lack of clean drinking water. The main way for transmission of Cholera is by ingestion of contaminated food, grasses, and drinking of contaminated water with *V. cholera* [2]. In Iraq, where cholera is endemic, sporadic outbreaks have been documented since 19663. Cholera outbreaks have recently been recorded in Iraq. A total of 1,000 confirmed cholera cases and 4 related deaths have been recorded from Iraq as of September 1, 2022. The four governorates with the highest numbers of cases and fatalities are Thi-Qar in the south (55 cases), Baghdad-Rasafa in the middle of Iraq, Kirkuk in the north (480 cases and 3 deaths) and Sulaimnia in the north (391 positive cases in June and 23 in July) [3]. Recently over 130 cases of cholera have been confirmed in Sulaimania City and several cases in Erbil City according to the Ministry of Health of Kurdistan Regional Government, Iraq September, 14, 2023

2. How Cholera is spread?

When the bacteria are consumed by mouth, usually from contaminated food or water, infection occurs. Cholera is spread by: [4]

- Drinking of contaminated water
- Ingestion of contaminated food
- Ingestion of contaminated grasses
- Ingestion of fish or shellfish from contaminated waters.

3. Risk Factors: There are several factors associated with Cholera including: first, Poverty and lack of access to safe food, water, and adequate sanitation [5, 6]. Second, the present of chronic diseases such as tuberculosis and AIDS can increase susceptibility to cholera [6]. Third, is the nutritional and immunity status of person [7]. Fourth, sex, women are often more susceptible than men because they frequently take care of sick family members at home and may not be aware of the essential safeguards to avoid transmission [7]. The last factor is seasonal and environmental factors: Cholera usually begins at the end of the dry season or the beginning of the rainy season, when water sources become highly polluted [6, 7].

4. Clinical signs: Usually, the disease is without clinical signs or has diarrhea. Then after 6-72 hours Followed by profuse watery diarrhea accompanied, by nausea and vomiting and if the patient doesn't receive treatment will lead to severe dehydration and circulatory collapse [8, 9].

5. Diagnosis of cholera: Cholera is diagnosed based on its clinical symptoms and is confirmed by cultivating *Vibrio cholerae* from a stool sample in selective media and by Polymerase Chain Reaction (PCR) [10].

6. Treatment: In the first step, the patient requires fluid therapy orally to stop diarrhea and prevent dehydration. While in severe cases patients required intravenously. The second step is giving antibiotics such as tetracycline [11, 12].

7. Prevention of Cholera: Cholera can be prevented by having access to clean, safe water. Effective remedies frequently include adequate chlorination of public water sources and, in some situations, the delivery of chlorine

tablets to homes along with guidelines for their correct use. People can be told to boil water before consuming it if chemical disinfection is not an option, although this may be challenging, especially in developing nations where fuel may be expensive or unavailable. Sometimes, even more straightforward techniques can work [1, 13].

8. Conclusion: Cholera is a serious disease among poor countries throughout the world. Even if personal therapy may be successful, cholera outbreaks spread so quickly that communities are unable to control them. Cholera prevention is significantly more effective than treatment, but it requires knowledge of the organism's capacity for survival in the environment and how these survival mechanisms interact with its virulence.

9. Recommendations: The government must take the appropriate action to prevent the disease's spread. Any returning visitors who have severe watery diarrhea should be tested for cholera. Visitors must be informed about the risk of contracting cholera, adopt the appropriate preventative measures, and make use of the appropriate counseling and self-treatment options (oral rehydration and treatment of moderate diarrhea).

All visitors who visit regions in which cholera has been reported should follow these guidelines:

- Only consume boiled, chlorinated or iodine-treated water.
- Other risk-free drinks include carbonated, bottled drinks without ice and boiling tea and coffee.
- Only eat freshly peeled fruit or dishes that have been completely prepared and are still hot.
- Avoid raw fish or shellfish
- Do not eat salads.
- Do not eat food from street vendors

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