

Short Communication

Cholera Outbreak in Syria: A Brief Reading

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Abstract

Cholera is an infectious intestinal disease caused by strains of the bacterium *Vibrio cholerae*. Since late August 2022, cases of severe acute watery diarrhea have been increasingly reported across Syria, concentrated particularly along the Euphrates River. These were later confirmed to be cholera cases. According to Syrian Ministry of Health the outbreak of cholera in several regions has killed 29 people until Monday 26 September 2022, and the total number of confirmed cases of cholera through rapid testing has reached 338. A lot of hygiene procedures should be taken to stop the spread of cholera outbreak in Syria, including securing clean water resources, treating the injured and washing and sterilizing vegetables well before eating.

Keywords: Cholera; Syria; Outbreak; Rapid test; Hygiene procedures

Introduction

Cholera is an infectious intestinal disease caused by strains of the bacterium *Vibrio cholerae* (Gram-negative) that produce an enterotoxin. The bacteria are transmitted to humans by eating contaminated food or water from other cholera patients. According to the World Health Organization, about 1.3-4.0 million cases of cholera are recorded annually, and it causes about 21,000-143,000 deaths worldwide [1]. Most infected people are symptomatic, but cholera bacterium is excreted in their feces for up to 14 days, which means that they are able to spread the infection to others.

The incubation period of the germ ranges from several hours to several days, and most patients have mild to moderate diarrhea, but some show severe symptoms: such as sudden acute diarrhea that leads to the expulsion of 1 liter of fluids within one hour with watery stool and similar to rice water persistent nausea and vomiting, dehydration that occurs hours after the symptoms start and leads to severe fatigue and loss of approximately 10% of body weight, when severe symptoms persist, some complications may occur, such as electrolyte disturbances that lead to painful muscle spasms or shock due to a decrease in the amount of blood in the body that leads to death [2,3].

Prevention Methods

Cholera prevention methods are very simple and include:

- Washing hands with soap and water or an alcohol-based hand sanitizer, especially after using the toilet and before eating.

- Making sure to drink clean water from a trusted source.
- Avoiding street food and prepared foods that contain leafy vegetables and fruits as much as possible, especially in endemic countries.
- Avoiding eating raw seafood.
- Washing vegetables and fruits well before eating, and sterilizing leafy vegetables in particular with a properly diluted potassium permanganate solution (1 gram of permanganate placed in 1 liter of water with one milliliter of vinegar) [4].

Spread of Cholera in Syria

Recently, we noticed an increasing recording of cholera cases in the Middle East, especially in Iraq, and after a short period, cholera cases began to be recorded in the eastern and northern governorates of the Syrian Arab Republic which are close to the Republic of Iraq, and then the cases began to spread in Syria in several governorates such as Latakia, Aleppo and Damascus [5].

Since late August 2022, cases of severe acute watery diarrhea have been increasingly reported across Syria, concentrated particularly along the Euphrates River. These were later confirmed to be cholera cases.

According to Syrian Ministry of Health the outbreak of cholera in several regions has killed 29 people until Monday 26 September 2022, and the total number of confirmed cases of cholera through rapid testing has reached 338, while the number of deaths has reached 29, since the outbreak of the disease was recorded last month. The bulk of the deaths and cases were concentrated in the northern Aleppo governorate [6].

Conclusion

In fact, there are several factors that helped in the recent spread of cholera in the Syrian cities and countryside, including: First high temperatures, which were accompanied by electricity cuts for very long periods, which led not to preserve foods and drinks well. Second people's dependence on storing water in large tanks for domestic use due to the lack of Water supply to homes. Third dependence some areas on the consumption of natural water due to the insufficient

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amount of water that reaches to them. Forth the contact of people in the eastern Syrian governorates and some affected Iraqi cities. Fifth Lack of attention to personal and public hygiene due to poor economic conditions.

A lot of hygiene procedures should be taken to stop the spread of cholera outbreak in Syria, including securing clean water resources, treating the injured and washing and sterilizing vegetables well before eating.

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