The value of cholera vaccination in promoting travel health

AUTHOR Terry Hainsworth, BSc, RGN, is clinical editor, Nursing Times.


Cholera is a diarrhoeal disease caused by intestinal infection with Vibrio cholerae bacterium (Health Protection Agency, 2004). Travellers are now able to obtain a cholera vaccine in the UK. Although cholera is rare in travellers from the UK, its potential severity is a cause for concern. Nurses will need to consider the availability of this new vaccine when providing health promotion to travellers.

Travellers are now able to obtain a cholera vaccine in the UK for the first time in a decade (Hartley, 2004). However, cholera is a rare infection for UK travellers. Some experts have praised the new vaccine as great news but the licensing has been criticised for not including use against traveller’s diarrhoea – a more common travel-related illness (Laurence, 2004).

Cholera

Cholera is a diarrhoeal disease caused by intestinal infection with Vibrio cholerae bacterium (Health Protection Agency, 2004). Most infections result in only mild symptoms or are asymptomatic. However, 5–10 per cent of cases result in the sudden onset of severe, watery diarrhoea and vomiting – causing dehydration. In these cases, unless adequate treatment is received, infection can result in death within a few hours due to circulatory collapse (World Health Organization (WHO), 2002).

Infection occurs by consuming food or water that has been contaminated directly or indirectly by the faeces of infected persons. Raw or poorly cooked seafood, raw fruit and vegetables, other foods contaminated during preparation or storage, and unsafe drinking water are common modes of transmission. Cholera can spread rapidly in areas where sewage and drinking water supplies are inadequately treated. The greatest risk occurs in overpopulated communities and refugee settings where there is poor sanitation and unsafe drinking water.

The treatment of cholera is oral rehydration but in cases of severe cholera IV fluids may be required and an effective antibiotic can help shorten illness. Antimotility medicines, such as loperamide, should not be given (WHO, 2004).

Risk of infection

The majority of cholera infection affects people living in areas where cholera is endemic. These areas are mainly resource-poor countries (Box 1), particularly those in Africa and Asia but also countries in Central and South America (WHO, 2004).

Most other infections of cholera occur after natural disasters as a result of inadequate sanitation and a lack of clean drinking water. Cholera occurs in pandemics. A seventh cholera pandemic is now in progress and has been affecting countries in Africa, Asia, and South America (WHO, 2004).

During 2001, 58 countries officially notified WHO of a total of 184,311 cases and 2,728 deaths. However, under-reporting of cholera is a problem and the actual figures are likely to be higher (HPA, 2004).

Cholera is rarely reported in travellers from the UK. There have been fewer than 21 reports per year since 1990 (WHO, 2004). For most people travelling from the UK to a resource-poor country, the risk of cholera is very low but this increases for those working in disaster areas or refugee camps (WHO, 2004).

Prevention

All diarrhoeal diseases including cholera and traveller’s diarrhoea can be prevented by the use of precautions to avoid the consumption of potentially contaminated food, drink, and drinking water. This involves following a few simple rules of good food and water hygiene (Department of Health, 2001):● Scrupulous washing of hands, especially before food preparation and eating;
● Do not drink local water without boiling or sterilising it. This includes ice cubes, which can be a hazard if not made from sterilised water;
● Eat only well cooked, freshly prepared food that is piping hot;
● Peel your own fruit before eating it;
● Avoid eating food exposed to flies;
● Avoid high risk foods such as shellfish or unpasteurised dairy products;
● Avoid eating food from street traders.

These recommendations are efficient when properly applied but they are often difficult to implement fully (WHO, 2004). Vaccines to protect against cholera have therefore been sought.

Until the mid-1990s there was a killed, whole-cell, injectable vaccine available in the UK. However, it was only efficient in 50 per cent of cases and for no longer than six months (WHO, 2004). This limited efficacy, and uncomfortable side-effects, resulted in recommendations that cholera prevention should involve hygiene advice rather than vaccination (WHO, 1999).

The new vaccine, Dukoral, is an oral preparation taken as a raspberry-flavoured drink, and is available on the
NHS as a prescription-only medication. It is an inactivated vaccine requiring two doses of 150ml. Food and fluids should be avoided for at least one hour pre and post-dose as the vaccine is sensitive to an increase in stomach acid caused by eating and drinking.

Field trials in Bangladesh have shown that this vaccine is safe and effective. Protection levels at a six-month post-vaccination follow-up were found to be 85 per cent (WHO, 2004).

The vaccine is not recommended for use in children under two years as there is little data to inform safety and efficacy in this group. There is also limited data available on its protective efficacy in those over 65 years or those who are HIV positive.

Side-effects from the vaccine have been reported as:
- Uncommon – diarrhoea, abdominal pain, and headache;
- Rare – fever, malaise, dizziness, nausea, and vomiting;
- Very rare – fatigue, joint pain, sore throat, sweating, and rash.

Despite the improved efficacy of the new vaccine, food and water hygiene precautions still need to be followed by travellers as the vaccine does not give complete protection (WHO, 2004).

**Implications for practice**

Although rare in travellers from the UK, cholera’s potential severity is a cause for concern. Even in countries where cholera epidemics occur, the risk for travellers is low. However, relief workers in disaster areas and refugee camps are at risk (Martinez, 2002). The use of Dukoral should be based on official recommendations and take into consideration the risk of disease in different areas and in different travelling conditions.

As with all travel vaccination, it is important to assess the risk the traveller has of contracting cholera infection and offer protection by vaccination as appropriate. Nurses will therefore need to ensure a full assessment of the traveller’s risk is made before recommending this vaccination. For example, travellers backpacking across India will face a very different risk than those staying one night in a five-star hotel.

The vaccine has the potential to help protect against one cause of traveller’s diarrhoea. Some experts have said they will prescribe the drug for traveller’s diarrhoea despite it not being licensed for this purpose (Laurence, 2004). Other experts do not agree with this approach, suggesting there is limited evidence to demonstrate the efficacy of the vaccine against traveller’s diarrhoea, and as it is not licensed for this use it should not be recommended (National Travel Health Network and Centre (NTHNC), 2004).

The vaccine costs approximately £23.42, making it comparable with prices for the vaccines for hepatitis A and typhoid. Its use should be reserved for those at high risk such as relief workers in refugee camps/disaster areas, expatriates and some of those going on extended trips in endemic/epidemic areas (NTHNC, 2004).

As with any vaccine, immunisation with Dukoral will not protect 100 per cent of susceptible persons (WHO, 2004). It is therefore important for nurses to continue to provide health promotion advice regarding food and water hygiene for all travellers.

This can be explained using the simple rule: boil it, cook it, peel it, or forget it (DoH, 2001).

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**REFERENCES**


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