THREE CASES OF DIARRHOEA FROM PENANG, MALAYSIA

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Abstract

Three persons who had travelled to Penang, Malaysia during the outbreak of cholera in May presented with diarrhoea on their return to Australia. *Vibrio cholerae*, serotype Ogawa, biotype El Tor was isolated from one case. *Salmonella* group C and *Salmonella enteritidis* were isolated from the other cases. These reports highlight the need for travellers to follow precautions regarding consumption of food and beverages when travelling overseas.

Background

Between 10 May and 31 May 1996 there was an outbreak of cholera originating in Penang, Malaysia. More than 1,000 cases were reported. We describe our experiences with Australian travellers returning from Penang with diarrhoea since that time.

Case 1

A 54 year old female from Brisbane travelled to Penang, Phuket and Kuala Lumpur between mid-April and mid-May 1996. Five days after her return she presented with watery diarrhoea (five loose bowel motions per day) and nausea. Contacts in Malaysia had informed her of the cholera outbreak, so she presented to her general practitioner for testing to exclude cholera. Faeces were collected on 21 May 1996. Microscopy revealed no leucocytes or erythrocytes. There was no growth on thiosulphate-citrate-bile salts-sucrose (TCBS) agar. *Salmonella* group C, however, was isolated. The organism was resistant to tetracycline but was susceptible to amoxycillin, cotrimoxazole and norfloxacin. She improved without any specific antimicrobial therapy.

Case 2

A 49 year old female from Brisbane travelled to Penang between early and mid-May 1996. Two days after leaving Penang, she developed watery diarrhoea, with eight motions per day. She was mildly dehydrated but did not require hospitalisation. She was treated with tinidazole but showed no improvement. Her diarrhoea lasted for one week. Faeces were collected five days after her diarrhoea commenced. Microscopy revealed no leukocytes or erythrocytes. Yellow colonies grew on TCBS agar. These grew in broth with one percent sodium chloride, and with no sodium chloride. Automated tests (Vitek GNI) were also consistent with the identification of *Vibrio cholerae.* Agglutination with O1 antiserum was achieved. The organism was identified as serotype Ogawa, biotype El Tor. The organism was susceptible to amoxycillin, tetracycline and cotrimoxazole.

The faeces of family members were screened and were negative for *V. cholerae*. The patient was treated with tetracycline, although her symptoms were almost completely settled by the time treatment was commenced.

Case 3

A 58 year old male travelled to Malaysia, including Penang, in early May 1996. He had watery diarrhoea on his return. Empiric therapy with norfloxacin was commenced after a faeces sample was collected. Microscopy of faeces on 30 May 1996 showed 2+ leukocytes but no red cells. *Giardia intestinalis* was identified on microscopic examination of a wet preparation of the faeces. *Salmonella enteritidis* was grown from his faeces.

Discussion

It is not surprising that an Australian tourist has been involved in the outbreak of cholera occurring in Malaysia. The outbreak was significant, with more than 1,000 cases confirmed since the first people were hospitalised on 10 May[1]. Although cases have been reported from Kuala Lumpur and other states of Malaysia, all cases shared a common history of having visited Penang. All isolates so far identified have been *Vibrio cholerae* biotype El Tor, serotype Ogawa.

The outbreak of cholera and the two cases of other gastrointestinal diseases acquired in Penang have at least four implications for Australian public health physicians and microbiologists:

1. The diversity of pathogens identified in the cases described above emphasises the need for pretravel education concerning prevention of food- and water-borne illnesses. The cholera outbreak reinforces the need for travellers to avoid ice in their drinks, as this may have been the source of this outbreak. It is also advisable to boil all water for five minutes prior to drinking. Chemical disinfection with iodine (which is more reliable than chlorine), is a suitable alternative when boiling is not feasible. Hot water from a tap may still contain pathogenic organisms and cannot be considered safe for drinking or for brushing teeth. Cold foods and salads should be avoided. These precautions will assist in preventing each of the pathogens identified in the three patients described above from being acquired.
2. Should cholera vaccine be recommended for travellers going to Penang or other parts of Malaysia in the near future? The presently available cholera vaccine is a heat-killed suspension of the Inaba and Ogawa serotypes of classical *V. cholerae*, serotype O1. It has been most extensively evaluated in Asian communities where some prior immunity would be expected. In these studies, its efficacy was 50 to 70%

and duration of protection was three to six months[2]. There are no good data on its efficacy for travellers, although in view of the lack of prior immunity, it would be expected that its efficacy would be even lower. It would appear that much greater protection would be gained by adhering strictly to precautions pertaining to water and food consumption than falsely relying on a poorly effective vaccine.

3. Does a case of cholera have public health implications? It is recommended that household contacts of an affected person should have faeces samples taken to exclude the possibility of carriage of the organism. There is no value, though, in vaccinating household members or other contacts of the patient. Chemoprophylaxis of household contacts with tetracycline is considered in situations where there is a high likelihood of secondary transmission[3]. As the incubation period of the disease is five days at the most, prophylaxis for cotravellers is probably pointless, as the incubation period will have been exceeded by the time the index case has been identified. Enteric precautions would be advisable if a traveller with cholera is hospitalised. As in the case above, however, there is a broad spectrum of diseases with many cases requiring no specific therapy.

4. Should TCBS plates be used routinely by microbiology laboratories in Australia? Our laboratory uses a vibrio enrichment broth and TCBS plates on all faeces samples received. In part, this reflects concern about missing locally acquired *Vibrio* species. Indeed, on the same day as the *V. cholerae* serotype O1 was isolated from faeces in the patient described above, another patient with no history of travel outside of Australia was found to be positive for non-O1 *V. cholerae.* However, there are considerable concerns about the cost effectiveness of using TCBS routinely[4]. Laboratories that do not incorporate the routine use of TCBS have to rely on good clinical notes regarding overseas travel or ingestion of raw seafood before considering the use of these selective plates.

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