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An outbreak of hepatitis A associated with a spa pool

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Introduction

The Victorian Infectious Diseases Unit received three notifications of hepatitis A between 17 and 20 October 1997 from a general practitioner in the eastern suburbs of Melbourne. The three cases were all young males who attended the same primary school, but were also members of the local junior football club. An earlier case notified was also a member of the football club, but attended a different school. Active surveillance was initiated through the club and the affected schools.

Methods

Using the National Health and Medical Research Council (NHMRC) case definition (anti-HAV IgM positive or demonstration of a clinical case of hepatitis, and epidemiologically linked to a serologically confirmed case), seven cases in six families were identified. All cases were young males (age range 8 to 15 years) and dates of onset ranged from 31 August to 13 October (Figure 1).

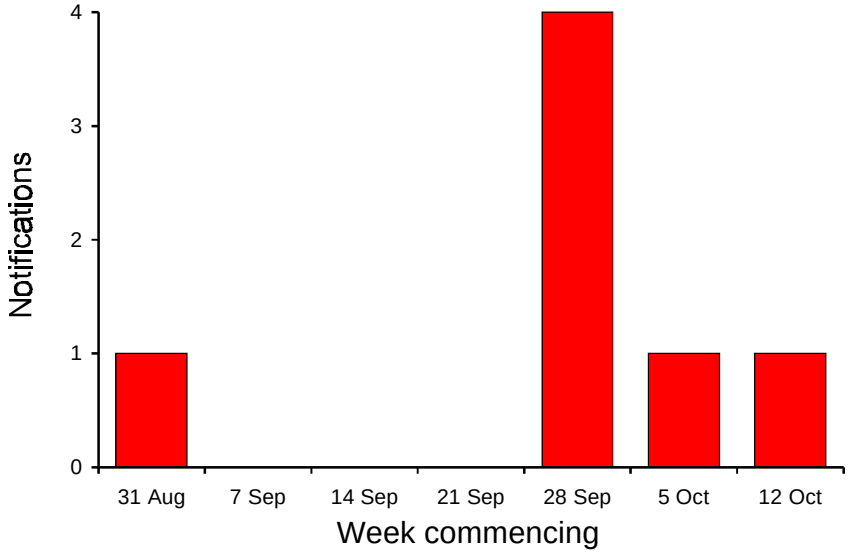
Using a standard questionnaire that elicited data on potential sources of infection including food and water, it was found that all cases had attended a presentation at the football club on 31 August 1997. Families attending the presentation brought their own food, although sausages were cooked on a public barbecue and canned drinks were served.

After the presentation, all the cases attended a private function at one of the case's homes. Food and drinks were shared, and all of the cases used a spa pool. At this private function the index case felt ill and left early; his illness was subsequently confirmed serologically as hepatitis A. Excluding the case and his two siblings, 27 other children and adolescents and an unknown number of adults attended the function. Of these, 17 were males ranging in age from 8 to 16 years, and 10 were females ranging in age from 3 to 17 years. Some males including the index case, but none of the females, used the spa pool. Whilst in the pool, 'whale spitting' was performed, in which mouthfuls of spa water were spat in a projectile fashion.

Discussion

Six of the 17 young males became ill with hepatitis A. None of the adults or young females became ill. It is believed the gender difference in cases of hepatitis A observed after this private function is best explained by the hypothesis that hepatitis A virus was shed by the index case whilst in the spa pool, and subsequently ingested by other participants, all male, who became secondary cases. The break in notifications observed after the index case on 31 August (Figure 1) is consistent with the known incubation period for hepatitis A. Other modes of transmission such as sharing of food

Figure 1. Notifications of hepatitis A, by week of onset



and drink cannot be excluded, although these would not explain the confinement of cases to young males.

The outdoor spa pool was being treated with hydrogen peroxide solution. Hydrogen peroxide used with ultraviolet (UV) light inhibits microbial growth, but is unlikely to provide adequate disinfection with respect to contamination with the hepatitis A virus. The use of UV-hydrogen peroxide systems is not allowed in public pools in Victoria due to poor performance in trials.[1] A study of a multistate outbreak of hepatitis A in the United States of America, found it to be linked to a public swimming pool.[2] In this study, cases were found to be more likely than non-cases to have swum in the spa pool than the swimming pool. Cases were also more likely to have swum for more than one hour and to have put their heads under water. Our findings support the conclusion from this study that recreational pools may serve as a mode of transmission of hepatitis A virus, particularly in children.

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Gastroenteritis outbreak, New South Wales

An increase in the number of reports of gastroenteritis cases received by the New South Wales Health Department occurred in mid-December. As of 17 December 45 people, mainly in the Sydney area, had developed gastroenteritis after consuming pipis. Pipis are a type of small shellfish harvested by commercial fishermen from regional beaches of New South Wales. The Department is investigating the cause of the outbreak. The sale of pipis in the Sydney area has been suspended, and a recommendation that pipis be thoroughly cooked inside before eating, has been issued.

CDI Subject Index, 1997