

DRAMATIC INCREASE IN HEPATITIS A

Sydney has been hit by an outbreak of hepatitis A. More than 400 cases have been reported to the NSW Health Department this year, compared with only 15 at the same time last year. The cases are concentrated in the inner eastern and central suburbs of Sydney and young homosexual men are the main group affected. The outbreak appears to be part of an international pattern: there are outbreaks among homosexual men in Melbourne¹, London, Dallas, Denver, New York, Rhode Island and Toronto².

BACKGROUND

The epidemiology of hepatitis A infection is highly variable and is constantly changing. Clinical hepatitis A infection is largely determined by two factors: age and the prevalence of antibodies to hepatitis A virus (anti-HAV) which indicate the level of immunity. Young children infected with hepatitis A have either no symptoms at all or have a non-specific illness which is not recognisable as hepatitis. But in adults clinical symptoms occur in the great majority of cases. The prevalence of anti-HAV also influences the clinical attack rate: the greater the prevalence of antibody in the community, the lower the incidence of clinical hepatitis A infection.

Gust and Feinstone have postulated three epidemiological patterns of hepatitis A infection which account for the observed differences in clinical attack rates around the world³:

PATTERN A occurs in conditions of overcrowding, lack of a clean water supply, inadequate sewerage and poor hygiene. In these circumstances, hepatitis A infection is usually acquired in early childhood and is usually subclinical. By the age of 10, most children are immune so clinical hepatitis A is uncommon.

PATTERN B is found where sanitation and general living conditions are improving as a result of social and/or economic reforms. In this situation the childhood infection is declining but so too is the level of immunity. The result of this combination is that clinical attack rates *increase* because there are more susceptible adolescents and adults. This paradoxical pattern occurs in countries like the USSR and China.

PATTERN C is seen in developed countries. Hepatitis A infection is very uncommon in young children and the majority of adolescents and young adults are not immune. Most cases occur as a result of travel to endemic areas or as part of an outbreak. The latter occur infrequently. Community-wide outbreaks of hepatitis A tend to occur in a 7- to 12-year epidemic cycle with low levels of infection in the inter-epidemic period^{2,3,4}.

In the 1970s and 1980s, hepatitis A became relatively uncommon. A seroprevalence survey in Sydney in the early 1970s⁵ showed that prevalence of anti-HAV increased with age and that after the age of 40, more than 90 per cent of people were immune. If a seroprevalence survey were repeated today, levels of immunity would almost certainly have fallen. A recent survey of British blood donors⁶ confirmed the falling immunity levels in developed countries: the overall prevalence of anti-HAV in blood donors under the age of 45 was less than 20 per cent.

The conclusion to be drawn is that the pool of people in Australia susceptible to hepatitis A is probably very large, as is the potential for hepatitis A epidemics.

DETAILS OF THE OUTBREAK

In February this year the Eastern Sydney Public Health Unit was notified of nine cases of hepatitis A in young men. Normally the unit would expect one or two notifications a month. The only apparent link between the people was that they were homosexual.

Over the next few months, notifications steadily increased to between 25 and 30 a month. Figure 3 shows the distribution of cases by month of onset of illness for NSW. The notification rate is sustained over a period of five months, and a pattern is typical of community-wide

outbreaks⁶. By comparison, common source outbreaks are characterised by an explosive rise in case numbers over a one- or two-month period followed by an equally dramatic fall in case numbers.

Notification rates per 100,000 population for 1990 and 1991 by Area and Region are shown in Figure 4. Clearly, there is a dramatic increase in the number of notifications in 1991, but this is largely confined to the Eastern, Central and Southern Sydney Areas. Eastern Sydney has by far the highest attack rate of any Area or Region.

The age and sex distribution of cases (shown in Figure 5) is unusual in that the male-to-female ratio is almost three to one. This can be explained by the fact that more than 60 per cent of cases from the Eastern Sydney Area are male homosexuals (see Figure 6).

Figure 7 compares the cases distribution in male homosexuals with the remaining cases in the Eastern Sydney Area. The "first wave" of the epidemic in homosexual men clearly precedes the "second epidemic wave" through the heterosexual community. About 27 per cent of the homosexual group are known to be HIV antibody positive.

In terms of other risk factors for hepatitis A infection, 21.1 per cent of cases gave a history of recent contact with a confirmed or suspected hepatitis A case and only 8.2 per cent had recently travelled overseas. Most of the cases were in young single adults. In Eastern Sydney, only a very few cases had or have contact with children.

Hepatitis A notifications are continuing to come in and the epidemic is showing no sign of abating.

DISCUSSION

The hepatitis A outbreak, although community based, is largely confined to young male homosexuals in the Eastern Sydney Area. Why this is occurring is not clear. Certainly, hepatitis A infection has long been recognised as being relatively common in male homosexuals⁷. Corey and Holmes⁸ studied the incidence and prevalence of homosexual and heterosexual men with hepatitis A attending an STD clinic. They found the prevalence of anti-HAV almost three times greater in the homosexual group and that the incidence of hepatitis A in susceptible homosexuals was 22 per cent while none of the susceptible heterosexual men seroconverted during the study. They also found a correlation between frequent oral-anal sexual contact and incidence of hepatitis A infection. In this AIDS era, oral-anal contact may be a common sexual practice because it is regarded as relatively safe.

Another unresolved issue is how concurrent HIV infection affects the course of hepatitis A infection. Both the clinical course and the infectious period may be prolonged, a finding which would influence the course of the epidemic.

Community-wide outbreaks of hepatitis A are notoriously difficult to control^{6,9,10}. By the time cases are detected and diagnosed, contacts have usually already been exposed for more than a week and often more than two weeks. Post-exposure prophylaxis with normal immunoglobulin is effective only if given within 14 days of exposure. For this reason the focus of activities during this epidemic has been to communicate the risk to medical practitioners and the general community and to encourage early diagnosis and intervention. Warning letters about the prevention and control of hepatitis A have been sent out to general practitioners and hospital accident and emergency centres in the affected areas, the Health Department issued a hepatitis A warning in both the gay and general press and educational posters have been distributed.

Department staff have also met with staff of the AIDS Bureau and the Aids Council of NSW to discuss strategies for delivering appropriate hepatitis A health messages to the target communities.

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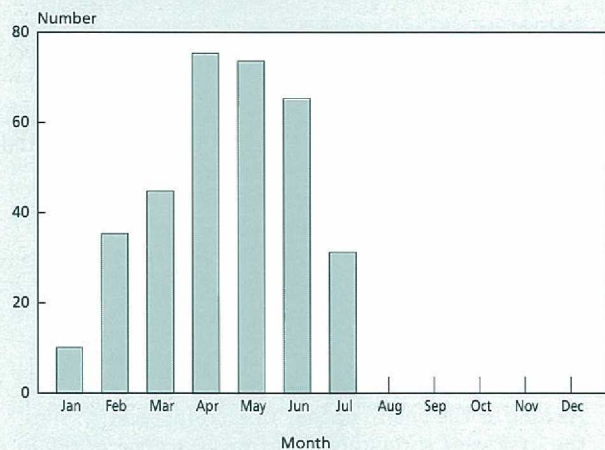
Dramatic increase in Hepatitis A

► Continued from page 77

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FIGURE 3

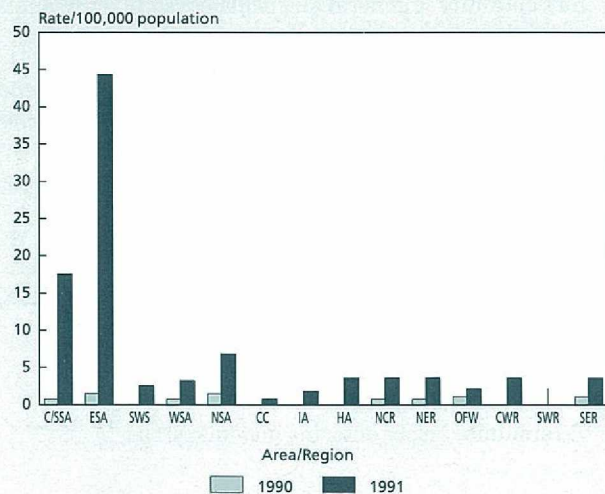
Hepatitis A notifications by month of onset, NSW 1991



Source: PHUs (as at 22/7/91)

FIGURE 4

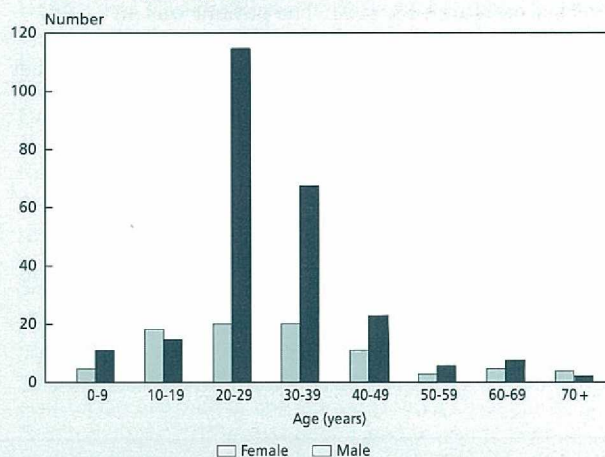
Hepatitis A notification rate Area/Region, NSW January to July 1990/1991



No. cases: 1990 — 15; 1991 — 342

FIGURE 5

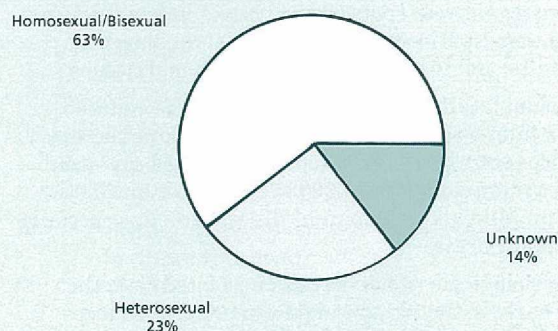
Hepatitis A cases age/sex dist, NSW January to July 1991



Source: PHUs (22/7/91)

FIGURE 6

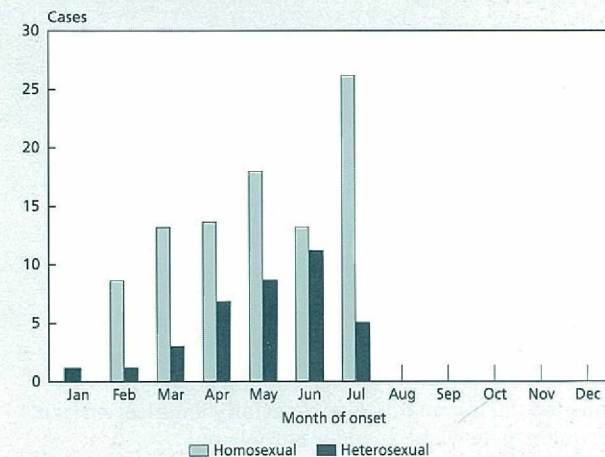
Hepatitis A cases by sexual preference, Eastern Sydney



Source: Eastern Sydney PHU (1/8/91)

FIGURE 7

Hepatitis A cases Epicurve by sexual preference



Source: Eastern Sydney PHU (1/8/91)