I nfectious hepatitis in Bristol, 1959–70

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Summary
Children between the ages of 5 and 10 years were particularly affected.
No association with Down's syndrome, or with immunization procedures, drugs or dental anaesthetics was found.

In July 1959, information was received that thirty-five cases of infectious hepatitis had occurred in a hospital for the severely subnormal just outside Bristol, with three further cases in an associated hospital within the city boundary. This outbreak was apparently controlled with gamma-globulin, although one or two suspicious cases occurred subsequently. At the end of 1959 school welfare officers in Bristol were reporting unusually high absences from primary schools because of 'jaundice'. In January 1960, general practitioners were asked, voluntarily, to inform the medical officer of health of cases of infectious hepatitis, and on 1 December 1960, the disease was made notifiable under Section 147 of the Public Health Act, 1936.

The outbreak reached its peak between October 1960 (148 cases) and January 1961 (136 cases). From July 1961 the incidence rapidly declined, until in December 1962 there were only eight cases.

Annual notifications have since fluctuated from as low as 112 in 1963 to 556 in 1966 and 588 in the first 9 months of 1970. The percentage of children aged 15 or less notified was 79% in 1960 but only 33.9% in 1963, supporting earlier suggestions (Rowland et al., 1967; Burns, 1967) that when a sufficient proportion of them have been infected either clinically or subclinically and presumably acquired immunity, the incidence of the disease falls to non-epidemic levels. Details are given in Table 1.

Throughout the period of notification, children aged between 5 and 10 years have been particularly affected as can be seen in Table 2. The main concentrations of notifications have been in areas where new housing developments have taken place. Many of the cases are single sporadic cases within families and in only a minority has a further case been notified in the same family. The concentration of cases in areas where there are large numbers of children of primary school age indicates the importance of the school as one agent of the transfer of infection.

There appears to be no evidence of connection with immunization procedures, drugs or dental anaesthetics.
Illnesses have usually been mild and preliminary studies showed that permanent liver damage is seldom a sequel in survivors. Details of the fourteen fatal cases (mortality rate 2.8/1000) in the period are given in Table 3.

There is no evidence to support the reports of an association between infectious hepatitis and Down's

Table 1. Secular and age incidence of infectious hepatitis in Bristol

<table>
<thead>
<tr>
<th>Year</th>
<th>Children (15 or less)</th>
<th>Adults</th>
<th>Total (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1960</td>
<td>906</td>
<td>79.0</td>
<td>241</td>
</tr>
<tr>
<td>1961</td>
<td>738</td>
<td>76.9</td>
<td>222</td>
</tr>
<tr>
<td>1962</td>
<td>183</td>
<td>63.5</td>
<td>105</td>
</tr>
<tr>
<td>1963</td>
<td>38</td>
<td>33.9</td>
<td>74</td>
</tr>
<tr>
<td>1964</td>
<td>63</td>
<td>49.6</td>
<td>64</td>
</tr>
<tr>
<td>1965</td>
<td>179</td>
<td>62.2</td>
<td>109</td>
</tr>
<tr>
<td>1966</td>
<td>331</td>
<td>59.5</td>
<td>225</td>
</tr>
<tr>
<td>1967</td>
<td>305</td>
<td>62.6</td>
<td>182</td>
</tr>
<tr>
<td>1968</td>
<td>157</td>
<td>56.5</td>
<td>121</td>
</tr>
<tr>
<td>1969</td>
<td>116</td>
<td>53.5</td>
<td>101</td>
</tr>
<tr>
<td>1970</td>
<td>350</td>
<td>59.5</td>
<td>238</td>
</tr>
</tbody>
</table>

(to 30/9/70)
syndrome (Stoller & Collmann, 1965; Pantelakis et al., 1970). Bristol's statistics are summarized in Table 4.

**Discussion**

On 5 June 1968, Circular 20/68 was issued in which the Minister of Health said he was aware of the growing medical opinion that infective jaundice should be made generally notifiable. At that time, jaundice was notifiable in the counties of Bedford, Cambridge, Essex, Hertford, Huntingdon, Norfolk, East and West Suffolk, and in the county boroughs of Great Yarmouth, Ipswich, Norwich, and Southend, under the Jaundice Regulations, 1943, made by the Minister under Section 143 of the Public Health Act, 1936. In addition, infectious hepatitis was notifiable in about eighty local authority areas under local orders made under Section 147 of the Act.

It was considered that general notification would assist medical officers of health to obtain more precise information concerning the incidence of infective jaundice and the circumstances in which the various forms of this disease were spread. Such information could well lead to useful measures of control. Particular attention, for example, has recently been focused on the transmission of jaundice by the use of contaminated syringes or needles by persons, mainly young adults, who administer drugs intravenously by self-injection, and the occurrences of cases of jaundice has led to the
Table 5. Corrected notifications* of infective jaundice, England and Wales, 1968–69

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of notifications</th>
<th>Notified morbidity/100,000 population</th>
<th>Deaths from infective jaundice</th>
<th>Deaths/100 notifications</th>
<th>Mortality/100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>11,579</td>
<td>47·7†</td>
<td>119</td>
<td>1·0</td>
<td>0·49†</td>
</tr>
<tr>
<td>(1 July–31 Dec.†)</td>
<td>(10,830)</td>
<td>(47·2)†</td>
<td>(113)</td>
<td>(1·0)</td>
<td>(1·49)†</td>
</tr>
<tr>
<td>1969</td>
<td>23,582</td>
<td>48·3</td>
<td>208</td>
<td>0·9</td>
<td>0·42</td>
</tr>
<tr>
<td></td>
<td>(21,558)</td>
<td>(46·8)</td>
<td>(188)</td>
<td>(0·9)</td>
<td>(0·42)</td>
</tr>
</tbody>
</table>

* Including original notifications from Port Health Districts.
† Figures shown are for two complete quarters.
‡ Equivalent annual rate.

Figures in parentheses are for England and exclude original notifications from Port Health Districts.

detection of foci of drug addiction. For these reasons, the Minister made the Public Health (Infective Jaundice) Regulations, 1968, to come into operation on 15 June 1968.

Corrected notifications of infective jaundice in England and Wales for 1968 to 1969 are set out in Table 5.

Conclusions

Studies in Bristol and Leicester confirm a significant association between high incidence of the disease and domestic over-crowding and poor living standards.

Infectious hepatitis has been described as one of the biggest unsolved problems in medical virology (British Medical Journal, 1964). Early claims by W. A. Rightsel and colleagues to have isolated the virus by cell culture from a Bristol patient were not confirmed at the Communicable Disease Centre of the United States Public Health Service at Atlanta, Georgia. The recent report (Ferris et al., 1970) that an antigen particulate and serologically distinct from Australia antigen has been detected in faecal extracts from ninety out of 220 patients with viral hepatitis, and from only five of 158 patients with other diseases, offers hope of further progress.

Acknowledgments

I am glad to acknowledge the help of a number of colleagues in Bristol in the preparation of this paper, especially Dr P. W. Bothwell, Mr G. A. Birch, Dr A. J. Rowland and Miss R. Williams.

References


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doi: 10.1136/pgmj.47.549.462

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