

Hepatitis in clinical laboratories 1975-76

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SUMMARY The survey of British laboratories in 1970-74 was continued by a questionnaire to members of the Association of Clinical Pathologists covering the next two years. Only nine cases of hepatitis (three of hepatitis B) were reported. The annual attack rate of 34 per 100 000 was only one-quarter of that in earlier years. The findings suggest that control measures have had considerable success.

This ongoing survey of hepatitis in laboratory staff was continued by a questionnaire sent to Association of Clinical Pathologists members in January 1977, using the same form and method of analysis as for the 1973-74 survey (Grist, 1976).

Results

Complete information was received from 222 laboratories: only eight hepatitis cases were reported, one-quarter of those reported in 1973-74 (Grist, 1976). One additional case was reported by a laboratory which withheld details of staff numbers.

Table 1 shows that the attack rates had fallen in almost every category and discipline, the overall annual attack rate of 34 per 100 000 being four times less than the rate of 143 for the previous two years. The rate in biochemistry technicians changed little (145 compared with 136 in the previous survey) but that in haematology technicians had fallen from 292 to 24.

Table 2 shows that, although all cases were tested, only three proved to be cases of hepatitis B (two of them biochemistry technicians); no hepatitis B was reported in the second year of the survey. Only two cases (both hepatitis B) required treatment in hospital and none was fatal. In only one case was the epidemiological information highly suggestive of the probable source of infection (a haemophilic medical haematologist working in a haemophilia unit), but the laboratory findings indicated hepatitis A, not hepatitis B.

Analysis of the characteristics and work patterns of the laboratories showed no special association of hepatitis with any of the five factors studied (Table 3). No laboratory reported more than a single case.

None of the cases in the discipline of haematology in this or the previous survey arose in blood transfusion units.

Discussion

The dramatic fall in the attack rate of hepatitis since the previous survey (and of hepatitis B, in particular, not reported since 1975) suggests that the strenuous and expensive efforts in recent years to prevent laboratory-acquired hepatitis in Britain have had considerable success. The few cases reported were mostly of presumed hepatitis A. They did not arise in circumstances strongly suggesting their acquisition in the laboratories, and they may largely represent normal background hepatitis affecting the general population.

These encouraging observations do not mean that vigilance can safely be relaxed or standards lowered with impunity. The methods of minimising transmission of hepatitis during laboratory procedures also inhibit the spread of many other infectious agents, which can be present in blood and other specimens, such as the familiar salmonellae and enteroviruses, or less familiar and more alarming rarities such as arboviruses (for example, yellow fever), arenaviruses (for example, Lassa fever), and the viruses causing Marburg-Ebola fever. A satisfactory low rate of hepatitis in laboratory staff may provide a useful index of good safety standards. The unchanging rate in biochemistry technicians, the group including two of the three hepatitis B cases, suggests the need for further attention to safety arrangements for biochemistry, although it should be recognised that the attack rate of 145 in this group is little different from the overall rates in previous surveys: 143 in 1973-74 and 111 in 1970-72. It should be noted, however, that the very small

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Table 1 *Hepatitis cases and attack rates in different groups of laboratory staff*

Employment category and discipline*	Hepatitis cases reported			Average No. at risk†	Attack rate per 100 000 person-years
	1975	1976	Total		
Medical					
Morbid anatomy	0	0	0	700	0
Haematology	0	1	1	542	184
Biochemistry	0	0	0	257	0
Microbiology	0	0	0	577	0
Immunology	0	0	0	31	0
Others	0	0	0	20	0
Science					
Morbid anatomy	0	0	0	44	0
Haematology	0	0	0	83	0
Biochemistry	0	0	0	767	0
Microbiology	0	0	0	309	0
Immunology	0	0	0	24	0
Others	0	0	0	43	0
Technician					
Morbid anatomy	0	0	0	2008	0
Haematology	1	0	1	4243	24
Biochemistry	2	3	5	3453	145
Microbiology	0	0	0	4217	0
Immunology	0	0	0	154	0
Phlebotomists	0	0	0	72	0
Others	0	0	0	104	0
Porters and assistants, etc.	0	0	0	1139	0
Domestics and glasswashers	0	0	0	1130	0
Secretaries and office staff	0	0	0	2708	0
Phlebotomists	0	1	1	213	469
Others	0	0	0	394	0
Total	3	5	8	23 232	34

*Morbid anatomy includes cytology and mortuary technicians; haematology includes blood transfusion; microbiology includes virology and parasitology.

†Person-years = $2/3 \times \Sigma$ (full-time + part-time/2) as at 1 January 1975, 1976, and 1977.

Table 2 *Details of hepatitis cases*

Year	Discipline and category	Age and sex	HBsAg test	Severity indices*	Other information (suspected source)
1975	Technician				
	Haematology	29 M	Positive	JH	—
	Technician				
	Biochemistry	19 M	Positive	J	—
	Technician				
Biochemistry	? F	Positive	H	'Handling other laboratory material'	
Medical					
	Haematology†	34 ?	Negative	J	'Suspected contact with haematology patient'
1976	Medical				
	Haematology	27 M	Negative‡	J	Haemophilic; received factor VIII treated HBsAg-positive haemophilia patients
	Technician				
	Biochemistry	20 M	Negative	J	—
	Technician				
	Biochemistry	24 M	Negative	J	—
	Technician				
Biochemistry	20 F	Negative	J	—	
Phlebotomist	28 F	Negative	J	—	

*J = jaundiced; H = admitted to hospital.

†Case in laboratory from which no staff-numbers were reported; not included in calculation of rates (Table 1).

‡Negative tests for both HBsAg and anti-HBsAg; positive tests of faeces for hepatitis A.

Table 3 Numbers of laboratories with different work characteristics with and without hepatitis cases

Specimen sources and type of testing	1975		1976	
	3 labs with hepatitis B cases	219 labs with no hepatitis	5 labs with HBsAg negative cases	217 labs with no hepatitis
Haemodialysis unit tested	0	74	2	74
not tested	3	145	3	143
Transplant unit tested	0	48	1	49
not tested	3	171	4	168
Haemophilia centre tested	1	64	3	64
not tested	2	155	2	153
Drug addict centre tested	0	36	1	35
not tested	3	183	4	182
HBsAg testing done	1	60	3	64
not done	2	159	2	153

numbers from which these attack rates are now calculated detract from their precise significance so that trends sustained over several phases of the ongoing survey mean more than absolute values calculated in any one period.

Surveillance by biennial questionnaire has proved simple to operate. The main difficulty is that of correct allocation of staff to disciplines, partly because of proliferation of new subspecialties, which do not necessarily fit the orthodox classification, and partly because many of those who complete the forms have difficulty in allocating staff to a *main* discipline as requested. It is hoped to simplify this aspect of future questionnaires.

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Reference

Grist, N. R. (1976). Hepatitis in clinical laboratories 1973-74. *Journal of Clinical Pathology*, **29**, 480-483.