LOUISIANA MONTHLY MORBIDITY

DISEASES REPORTED DURING MONTH OF AUGUST, 1972 BY PARISH OF RESIDENCE

RECOMMENDATION OF THE PUBLIC HEALTH SERVICE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES - IMMUNE SERUM GLOBULIN FOR PROTECTION AGAINST VIRAL HEPATITIS

Introduction

The term "viral hepatitis" as commonly used applies to 2 diseases that are clinically quite similar but virologically, immunologically, and epidemiologically distinct. These diseases are hepatitis-A (formerly infectious hepatitis) and hepatitis-B (formerly serum hepatitis). Any other viral infection that affects the liver, producing an inflammatory response or "hepatitis" is not customarily included under the term viral hepatitis.

Immune serum globulin (ISG) is highly effective protection against the clinical manifestations of hepatitis-A but ineffective for hepatitis-B. Therefore, accurate diagnosis of the kind of viral hepatitis, insofar as is possible with methods presently available, is crucial to the effective use of ISG. Clinically, it is extremely difficult to distinguish between individual cases of hepatitis-A and hepatitis-B, but discrimination between these diseases often is possible, based on careful evaluation of epidemiologic evidence and blood tests for hepatitis-B.

Viral hepatitis is often acquired as a result of a particular kind of exposure, and terms such as "trans-

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RELEASED September 6, 1972	ASEPTIC MENINGITIS	DIPHTHERIA	ENCEPHALITIS	ENCEPHALITIS, POST INFECTIOUS	INFECTIOUS AND SERUM HEPATITIS	TUBERCULOSIS, PULMONARY	MENINGOCOCCAL INFECTIONS	PERTUSSIS	POLIOMYELITIS, PARALYTIC	RABIES IN ANIMALS	RHEUMATIC FEVER	RUBELLA *	SHIGELLOSIS	TYPHOID FEVER	OTHER SALMONELLOSIS	TETANUS	MEASLES	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY
TOTAL TO DATE 1971	115	11	9	9	474	483	51	40	0	22	2	282	24	6	95	1	1667	9369	481
TOTAL TO DATE 1972	58	4	10	9	505	383	36	34	0	32	8	90	101	6	114	4	96	11569	595
TOTAL THIS MONTH	22	0	1	0	72	44	2	7	0	5	0	4	24	2	24	0	2	1966	83
ACADIA						2								1				8	
ALLEN																		1	
ASCENSION																		3	
ASSUMPTION					2												1	7	
AVOYELLES					1													2	
BEAUREGARD																			
BIENVILLE																		3	1
BOSSIER					1	1								1				39	1
CADDO					4	3				2								217	1
CALCASIEU					5	1												59	2
CALDWELL																			
CAMERON																			
CATAHOULA						1												1	
CLAIBORNE																		1	
CONCORDIA																		1	
DESOTO													1					19	
EAST BATON ROUGE	1				3								1		6			55	7
EAST CARROLL																		11	
EAST FELICIANA																			
EVANGELINE																		1	
FRANKLIN																		3	
GRANT												1						3	
IBERIA																		5	1
IBERVILLE						1												3	

*Includes Rubella Congenital Syndrome.

fusion-associated," "hemodialysis-associated," "chimpanzee-associated," and "syringe-" or "needle-associated" help characterize the mode of transmission.

Hepatitis-A

Hepatitis-A is thought to be caused by a virus transmitted principally by the fecal-oral route under conditions of poor sanitation and close contact with infected persons. Characteristically, the illness produced is of abrupt onset with fever, malaise, anorexia, nausea, abdominal discomfort, and jaundice. Morbidity is variable and mortality quite low (less than 1 percent). The usual incubation period of hepatitis-A is 15-50 days (average 25-30). Stools from patients with hepatitis-A have been shown to be infective as long as 2-3 weeks before and 2 weeks after the onset of jaundice. Blood is infective at least 2 weeks before but less than 1 week after the appearance of jaundice, so parenteral transmission of hepatitis-A is also possible.

Hepatitis-B

Hepatitis-B is thought to be caused by a virus, distinctive from that associated with hepatitis-A, transmitted principally by parenteral routes. Insidious onset of illness, anorexia, malaise, nausea, vomiting, abdominal discomfort, and jaundice are characteristic. Morbidity is variable; mortality exceeds that of hepatitis-A. Exposure is usually through blood transfusion or contaminated needles. The incubation period is characteristically long, usually 2-6 months; however, some hepatitis-B cases with incubation periods as short as 1-2 months have been observed. Nonparenteral transmission of hepatitis-B also occurs and probably contributes to the occupational hazard for those who work in blood banks or renal dialysis units, or are otherwise in direct contact with infective blood. The exact mechanism and frequency of these nonparenteral transmissions are under intensive study.

Virus-like particles, termed the hepatitis-B antigen (HBAg), have been detected in the serum of many patients with hepatitis-B. These particles (which were originally tagged "Australia antigen" and then "hepatitis-associated antigen") appear to persist from about 4 weeks before onset of jaundice to 4-5 weeks or more after onset. In a small proportion of patients, an HBAg-carrier state develops. HBAg is found in a large proportion of patients with transfusion-associated hepatitis and with hepatitis associated with parenteral drug abuse. It is detectable in hepatitis patients who cannot recall any possible parenteral exposure and in some completely asymptomatic persons.

Blood with HBAg is very likely to be infective. Blood banks use HBAg detection in screening programs aimed at eliminating hepatitis-B transmission through blood transfusion. Antibody to HBAg (anti-HBAg or HBAb) in the serum of hepatitis-B patients during convalescence has been demonstrated. Its role in protection is under investigation.

Hepatitis Surveillance

Viral hepatitis has been a nationally reportable disease since 1952. Since 1966 the 2 kinds of hepatitis have been listed separately. The annual total number of viral hepatitis cases has varied somewhat cyclically between 14,922 (1957) and 72,651 (1961); there were peaks in 1954 and 1961 and a gradual increase in incidence since the most recent nadir in 1966 (34,356 cases). A total of 69,636 viral hepatitis cases were reported in 1971; 8,879 were presumed on epidemiologic grounds to be hepatitis-B. The other 60,757 were hepatitis-A and possibly other viral diseases or hepatitis-B cases that were epidemiologically unconfirmed.

In the last 5 years, several important changes in epidemiologic trends were observed in the characteristics of reported cases: hepatitis used to occur predominantly in winter and spring, but the seasonal variation has diminished remarkably; the age distribution has shifted from a peak in persons aged 5-14 to those 15-24; an equal proportion of cases between the sexes has changed to a 2:1 male preonderance among patients 15-24 years; and the general rural to urban trend has been notable. During the same 5-year period, the rate of increase in reported cases was greater for hepatitis-B than hepatitis-A. These changes have paralleled the recognized rise in illicit use of parenteral drugs.

Immune Serum Globulin

Immune serum globulin* (ISG) is a sterile solution containing antibody derived from human blood for intramuscular use. It is 16.5 percent protein obtained by cold alcohol fractionation of large pools of blood plasma. It contains specified amounts of antibody against diphtheria, measles, and one type of poliovirus. Neither hepatitis-A nor hepatitis-B has been transmitted by ISG.

IGS and Hepatitis-A

Numerous field studies during the past 2 decades have documented the protection against hepatitis-A (formerly infectious hepatitis) conferred by ISG administered before exposure or during the incubation period. Its relative effectiveness depends on timing and dose. When administered before or within 1-2 weeks after exposure to hepatitis-A in the appropriate dose, it prevents illness in 80-90 percent of those exposed. However, because ISG may not suppress inapparent infection, long-lasting, natural immunity may result.

* Official name: Immune Serum Globulin (Human)

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JACKSON																			
JEFFERSON	5				9	11							1		1			122	11
JEFFERSON DAVIS						2												17	
LAFAYETTE			1		2													26	1
LAFOURCHE																		27	
LASALLE												1							
LINCOLN					1													9	
LIVINGSTON																			
MADISON																		21	2
MOREHOUSE						2												15	2
NATCHITOCHES					1	1												10	1
ORLEANS	14				15	10	1	3		1		1	18		12		1	721	30
OUACHITA					7	3		4		1								133	8
PLAQUEMINES															2			2	
POINTE COUPEE															1				
RAPIDES					6	1				1			1					78	1
RED RIVER																		1	
RICHLAND																		5	1
SABINE																			1
ST. BERNARD	1				1		1											2	
ST. CHARLES													1					3	2
ST. HELENA																		7	
ST. JAMES													1					2	4
ST. JOHN																		4	3
ST. LANDRY					3	2												31	
ST. MARTIN																		7	
ST. MARY																		3	3
ST. TAMMANY					6													15	
TANGIPAHOA	1					1									1			45	
TENSAS																			
TERREBONNE					3														
UNION					1	1												4	
VERMILION						1												3	
VERNON																		124	
WASHINGTON															1			20	
WEBSTER																		9	
WEST BATON ROUGE																		7	
WEST CARROLL																		1	
WEST FELICIANA																		39	
WINN					1							1						11	
OUT OF STATE																			

From January 1 through August 31, the following cases were also reported: 1 - Actinomycosis, 2 - Brucellosis, 6 - Malaria (contracted outside the U.S.A.).

The decision to give ISG is based on assessing the possible hepatitis exposure. If the exposure could have resulted in infection, ISG should be given.

ISG should be given as soon as possible after a known exposure. Its prophylactic value is greatest when given early in the incubation period and decreases with time after exposure. The use of ISG more than 6 weeks after exposure or after onset of clinical illness in a contact is not indicated.

Dosage

The dosage patterns of ISG in common use were derived primarily from field and clinical observations. Under most conditions of exposure, protection is afforded by intramuscular injection of 0.01 ml of ISG per pound of body weight (approximately 0.02 ml/kg). (Table 1).

Table 1

Guidelines for ISG Prophylaxis Against Hepatitis-A

Person's Weight (lb.)	ISG Dose (ml)*
<50	0.5
50-100	1.0
>100	2.0

* Within limits, larger doses of ISG provide longer lasting but not necessarily more protection. More ISG is, therefore, prescribed under certain circumstances. (See Institutional Contacts and Travelers to Foreign Countries)

Specific Recommendations

Household Contacts: Close personal contact, as among permanent and even temporary household residents, is important in the spread of hepatitis-A. Secondary attack rates are particularly high for children and teenagers. Rates are somewhat lower for adults, but illness tends to be more severe. ISG is recommended for all household contacts who have not already had hepatitis-A.

School Contacts: Although the highest incidence of hepatitis is among schoolage children, contact at school is usually not an important means of transmitting this disease. Routine administration of ISG is not indicated for pupil or teacher contacts of a patient. However, when epidemiologic study has clearly shown that a school- or classroom-centered outbreak exists, it is reasonable to administer ISG to persons at risk.

Institutional Contacts: In contrast to schools, the conditions in institutions, such as prisons and facilities for the mentally retarded, favor transmission of hepatitis-A. Sporadic cases as well as epidemics in such institutions have been reported frequently. ISG administered to patient and staff contacts of hepatitis-A patients in the doses shown in Table 1 can effectively limit the spread of disease.

Where hepatitis-A is endemic, particularly in large institutions with high rates of admission and discharge, all who live and work there (residents and staff personnel) may be subject to continuing exposure. Under these circumstances, ISG has not resulted in eradication of hepatitis, but it has provided temporary protection against hepatitis-A when administered in doses of 0.02-0.05 ml/lb at the time of admission or employment. Readministration of ISG in the same dose every 6 months may be necessary as long as the risk persists.

Hepatitis-B, which is not affected by ISG, may also be endemic in such institutions; therefore, the type of hepatitis should be identified by epidemiologic and serologic methods before considering routine, general use of ISG (see ISG and Hepatitis-B).

Hospital Contacts: Routine prophylactic administration of ISG to hospital personnel is not indicated. Emphasis should be placed on sound hygienic practices. Intensive, continuing education programs pointing out the risk of exposure to hepatitis-A and the recommended precautions should be directed toward hospital personnel who have close contact with patients or infective materials.

Hemodialysis: Most of the hepatitis affecting patients and the staff of renal hemodialysis units appears to to be hepatitis-B and therefore not preventable by ISG (see ISG and Hepatitis-B).

Needle Exposure: For a person accidentally inoculated with blood or serum from a hepatitis patient, ISG prophylaxis should be used only if the inoculum is suspected of containing hepatitis-A. Then, ISG should be given in the dose specified in Table 1.

Office and Factory Contacts: Routine administration of ISG is not indicated for persons exposed in the usual office or factory situation to a fellow worker with hepatitis.

Common-Source Exposure: When food, water, or other such vehicle is clearly identified as a common source of infection for multiple hepatitis cases, administration of ISG should be considered for others exposed.

Exposure to Non-Human Primates: Sporadic cases and outbreaks of hepatitis have occurred among persons in close contact with recently imported non-human primates, primarily chimpanzees. Because of the similarity

between chimpanzee-associated hepatitis and hepatitis-A, prophylactic ISG has been used with apparent success in doses of 0.02 ml/lb (0.05 ml/kg) administered every 4 months to those in close contact with newly imported animals. Emphasis should also be placed on other measures, such as scrupulous hygienic practices, use of protective clothing, and limitation of human contact with the animals.

Travelers to Foreign Countries: The risk of hepatitis-A for United States residents traveling abroad appears to be small; it varies with living conditions, the prevalence of hepatitis in the areas visited, and particularly the length of stay.

Travelers may be at no greater risk than in the United States when their travel involves ordinary tourist routes and lasts less than 3 months; ISG is not routinely recommended for them. However, travelers to tropical areas and developing countries who bypass ordinary tourist routes may be at greater risk of acquiring hepatitis-A. If ISG is administered, the dosage schedule in Table 1 should apply.

Travelers planning to stay (3 or more months) in tropical areas or developing countries where hepatitis-A is common and where they may be exposed to infected persons and contaminated food and water are at greater risk of acquiring hepatitis. A single dose of ISG as shown in Table 2 is recommended for them. (Data are inadequate to specify precise boundaries.)

Table 2

Guidelines for U.S. Travelers Planning to Stay 3 or More Months in Tropical Areas or Developing Countries

Persons Weight (lb.)	ISG Dose (ml)
<50	1.0
50-100	2.5
>100	5.0

For persons residing abroad in tropical areas or developing countries, the risk of hepatitis appears to persist. Experience has shown that regular administration of ISG offers at least partial protection against hepatitis. It is recommended that prophylactic ISG be repeated every 4-6 months at doses indicated in Table 2*.

Pregnancy: Pregnancy is not a contraindication to using ISG as recommended.

Reactions

ISG should not be administered intravenously because of the possibility of severe hypersensitivity reactions.

Intramuscular administration of ISG rarely causes adverse reactions. Discomfort may occur at the site of injection, especially with larger volumes. A few instances of hypersensitivity have been reported, but in view of the very large number of persons who have received ISG, the risk is exceedingly small. Antibody against gamma globulin may appear following administration of ISG, although its significance is unknown. When ISG is indicated for the prophylaxis of hepatitis-A, this theoretical consideration should not preclude its administration.

ISG and Hepatitis-B

Numerous well-constructed studies have attempted to document the protective effect of standard immune serum globulin against hepatitis-B (formerly serum hepatitis). Evidence indicates that there is no protective effect. Therefore, ISG should not be used for protection against so-called transfusion-associated hepatitis. It should not be administered routinely to patients and staff members of hemodialysis units, to other persons exposed to hepatitis-B, or to hepatitis-B carriers. The lack of effect of ISG against hepatitis-B is presumably related to insufficient titer or complete absence of specific antibody against hepatitis-B in most lots of commercial ISG. Whether or not administration of hyperimmune globulin containing large amounts of HBAb will prove effective in modifying hepatitis-B has yet to be determined.

* Some agencies have used up to 0.05 ml/lb each 4 to 6 months rather than the 5 ml for adults recommended here.

From Center for Disease Control - Hepatitis Surveillance - Report No. 35 - July, 1972