



MONTHLY MORBIDITY REPORT

Provisional Statistics

DEPARTMENT OF HEALTH AND HUMAN RESOURCES
OFFICE OF HEALTH SERVICES AND ENVIRONMENTAL QUALITY
BOX 60630 NEW ORLEANS, LOUISIANA 70160

Reported Morbidity
December, 1981

PUBLIC HEALTH STATISTICS and
DIVISION OF DISEASE CONTROL

VIRAL HEPATITIS: SEROLOGIC DIAGNOSIS

A number of agents, including certain viruses, drugs and chemicals, can cause hepatitis, or inflammation of the liver. The term viral hepatitis is reserved for three specific infections, each caused by different viruses which have an affinity for the liver. The infections are known as hepatitis A, hepatitis B, and non-A, non-B hepatitis. Although clinically similar, these diseases are different in their virology, immunology and epidemiology. A definitive diagnosis of viral hepatitis can be made through the use of available serological tests. The following is a guide to the serodiagnosis of viral hepatitis.

HEPATITIS A

Hepatitis A was formerly known as "infectious" hepatitis. The hepatitis A virus (HAV) is shed in feces; therefore, the usual mode of transmission is via the fecal-oral route through close personal contact or contaminated food or water. It appears that any viremia is transient and percutaneous transmission is extremely rare, if it occurs at all. Following infection with hepatitis A virus, antibodies usually confer lifelong immunity. A chronic carrier state has not been demonstrated.

As peak viral shedding occurs prior to the onset of symptoms, diagnosis of hepatitis A infection is made by testing for antibodies to the virus. The IgM anti-HAV class is present early in the illness and remains detectable for 2-3 months. A positive IgM anti-HAV result is indicative of acute hepatitis A infection. The IgG anti-HAV class rises to detectable levels more slowly, but persists through life. A positive IgG anti-HAV indicates past infection. Unless the specimen was drawn very late in the course of the illness, a positive IgG anti-HAV indicates that the patient is immune to the hepatitis A virus and currently has hepatitis of other etiology. If both the IgM and IgG are negative, the patient is susceptible to HAV and currently has hepatitis of other etiology.

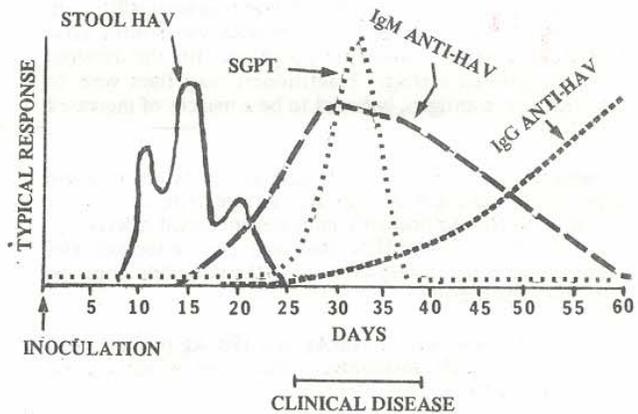
SUMMARY OF HEPATITIS A SERODIAGNOSIS

- IgM positive — indicates recent infection — consistent with a diagnosis of acute hepatitis A.
- IgG positive — indicates past infection (unless specimen obtained late in the course of

illness) — the patient is presently immune and has hepatitis of other etiology.

IgM/IgG negative — indicates no prior exposure — the patient is presently susceptible and has hepatitis of other etiology.

Figure 1. RESPONSE TO HAV INFECTION



Adapted from:
CDC: *Hepatitis Surveillance Report* No. 42, issued June 1978.

HEPATITIS B

Hepatitis B was formerly known as "serum" hepatitis. The hepatitis B virus (HBV) is found in blood and blood products. Although HBV has also been found in body fluids such as urine, tears, bile and breast milk, only serum, saliva and semen are considered infectious. HBV is transmitted primarily through percutaneous or mucosal inoculation (e.g., needle sticks, mouth pipetting) or sexual contact, primarily among male homosexuals.

Three specific viral antigens have been identified. These are the surface antigen (HBsAg - formerly called the

Australian antigen - HAA), the core antigen (HBcAg) and the e antigen (HBeAg). Antibodies to these antigens have also been identified; i.e., anti-HBs, anti-HBc and anti-HBe.

Serologic tests are available which detect the presence of HBsAg and HBeAg (HBcAg is never found free in serum), as well as the presence of the three antibodies. This serologic profile will contribute to the diagnosis of acute HBV infection and indicate the state of illness, degree of infectivity, potential or actual carrier state, or state of immunity.

Interpretation of an individual profile depends on what point during the course of illness testing is done. At the time of clinical illness, a positive HBsAg, in the absence of a positive IgM anti-HAV, is strongly suggestive of acute hepatitis B.

Approximately 10% of persons who experience HBV infection become chronic carriers of HBsAg and are considered infectious. Once the diagnosis of acute hepatitis B is made, patients should be retested periodically until the HBsAg clears. Persistence of HBsAg six months after the acute illness is considered prognostic for the development of chronic carriage. Practitioners may then wish to also test for the e antigen, believed to be a marker of increased infectivity.

In general, the presence of HBsAg indicates either acute hepatitis B infection or chronic carriage. The concurrent presence of HBeAg probably indicates increased infectivity. The presence of anti-HBs indicates past infection and present immunity. Interpretation of the complete hepatitis B profile is as follows:

- (1) HBsAg positive, or HBsAg and HBeAg positive with no detectable antibodies – indicative of early acute phase illness.
- (2) HBsAg, HBeAg, anti-HBc positive; and anti-HBe, anti-HBs negative – indicates acute phase of illness or indicates probable chronic carriage if more than six months after acute illness.
- (3) HBsAg positive; HBeAg negative, anti-HBc positive; and anti-HBs negative – indicative of acute phase illness with probable pending resolution of viremia or a chronic carrier state, again depending on how long this profile persists.
- (4) HBsAg, HBeAg negative; anti-HBc, anti-HBe positive; and anti-HBs negative – indicative of convalescence. Patient may still be shedding virus at undetectable levels and has not yet developed measurable anti-HBs. This profile, commonly called the “window phase,” is seen for a period of one to several weeks following resolution of clinical illness.

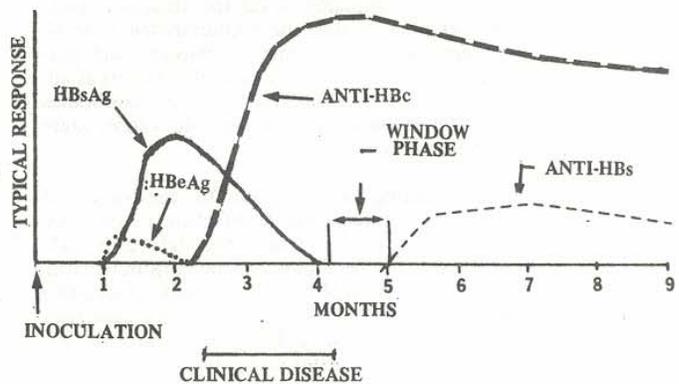
- (5) HBsAg, HBeAg negative; and anti-HBc, anti-HBe, anti-HBs positive – indicative of recovery stage of illness. The patient is no longer infectious.
- (6) HBsAg, HBeAg negative; anti-HBc positive; anti-HBe negative; anti-HBs positive – indicative of recovery stage. This is the usual profile seen years after the original acute infection.

Patients who become chronic carriers will remain HBsAg positive and will not develop detectable anti-HBs. As noted above, carriers develop anti-HBc and perhaps anti-HBe, but are still considered infectious due to the persistence of HBsAg.

SUMMARY OF HEPATITIS B SERODIAGNOSIS

- HBsAg positive – indicates acute hepatitis B infection; or without a history of acute disease exposure, a chronic carrier of antigen.
- HBeAg positive – indicates infectivity.
- Anti-HBs positive – indicates past infection – presently immune and has hepatitis of other etiology.
- Anti-HBc positive – indicates past or present infection.

Figure 2. RESPONSE TO HBV INFECTION



Adapted from:
Melnick JL, Dressman GR, Hollinger FB: Viral hepatitis, *Scientific American* July 1977; 237:44-52.

NON A, NON-B HEPATITIS

The diagnosis of non-A, non-B hepatitis (NANB) is a process of excluding other causes in a patient with clinical or biochemical evidence of hepatitis.

The clinical spectrum of NANB hepatitis ranges from

asymptomatic elevation of liver enzymes to fulminant hepatitis. Chronic hepatitis probably occurs more commonly in NANB hepatitis than in hepatitis B. The lack of specific diagnostic tests for NANB hepatitis and the frequent occurrence of subclinical cases, make accurate incidence estimates difficult. The majority of transfusion-associated hepatitis in the United States is due to the agent or agents of NANB hepatitis.

Specific tests for NANB hepatitis antigens and antibodies

are being sought by many laboratories. Though there are promising preliminary results, no test or set of tests has yet been standardized even for research purposes.

REFERENCES

1. West Virginia *Epi-Log* Vol. 2, No. 8, Sept 1981.
2. Los Angeles County Dept. of Health Services *Public Health Letter* Vol. 3, No. 2, Feb 1981.

SELECTED REPORTABLE DISEASES (By Place of Residence)

STATE AND PARISH TOTALS REPORTED MORBIDITY DECEMBER, 1981	VACCINE PREVENTABLE DISEASES					ASEPTIC MENINGITIS	HEPATITIS A AND UNSPECIFIED	HEPATITIS B	LEGIONNAIRES DISEASE	MALARIA**	MENINGOCOCCAL INFECTIONS	SHIGELLOSIS	TUBERCULOSIS, PULMONARY	TYPHOID FEVER	OTHER SALMONELLOSIS	UNDERNUTRITION SEVERE	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY	RABIES IN ANIMALS (PARISH TOTALS CUMULATIVE, 1981)
	MEASLES	RUBELLA*	MUMPS	PERTUSSIS	TETANUS														
TOTAL TO DATE 19 80	15	13	67	35	5	81	895	306	5	50	92	228	478	2	210	7	22740	1422	19
TOTAL TO DATE 19 81	4	9	6	7	2	98	1132	351	3	13	130	144	423	3	220	2	23267	1664	34
TOTAL THIS MONTH	0	0	1	0	0	3	154	31	0	2	26	12	42	1	20	0	2559	134	1
ACADIA						2	3								3		15		
ALLEN																	3		
ASCENSION													2				8	1	
ASSUMPTION							1	1							1		7		
AVOYELLES							2	1					2				8		1
BEAUREGARD																	9		
BIENVILLE								1			1						3		3
BOSSIER											1						35	4	1
CADDO							1	1			2	2	1		1		255	21	1
CALCASIEU							2	1					1		5		123	3	
CALDWELL																	2		
CAMERON								1									2		
CATAHOULA															1		2	1	
CLAIBORNE																	9		
CONCORDIA																		1	
DESOTO			1														6		1
EAST BATON ROUGE							1				2						179	8	
EAST CARROLL														1			12		
EAST FELICIANA																	2		1
EVANGELINE																			1
FRANKLIN							1						1				4		1
GRANT																	20		
IBERIA							14						1		1		13	1	
IBERVILLE																	1		
JACKSON													1				1		
JEFFERSON							44	5			6	1	2		1		123	13	1
JEFFERSON DAVIS															2		15	1	
LAFAYETTE							2	5			1						50	2	
LAFOURCHE												2	1		1		25		
LASALLE																	1		1
LINCOLN								1									21	2	
LIVINGSTON													2				7		
MADISON																	13	1	
MOREHOUSE																	26		
NATCHITOCHES							7	1									3		7
ORLEANS							36	8			6		20				1141	52	
OUACHITA							11	1			1		2				113	5	1
PLAQUEMINES							1										5		
POINTE COUPEE																			2
RAPIDES							1	1			1						84	1	7
RED RIVER													1				2	2	1
RICHLAND																	10		
SABINE																	4		1
ST. BERNARD							3				1						9		
ST. CHARLES							5	1									5	1	
ST. HELENA																	2		
ST. JAMES							1				1						7		
ST. JOHN							1				1						3		
ST. LANDRY							1	1					2				14	1	
ST. MARTIN							1				1						10		
ST. MARY							3										18		
ST. TAMMANY							3						2		1		21	2	
TANGIPAHOA							2										16	2	
TENSAS																	1		
TERREBONNE						1	5					4					29		
UNION										1									1
VERMILION								1			1	1			2		3		
VERNON							2				1	1					6	1	5
WASHINGTON																	5	2	
WEBSTER													1		1		4	1	1
WEST BATON ROUGE																	11		
WEST CARROLL																			
WEST FELICIANA																	6	3	
WINN																	1		
OUT OF STATE										1		1					25		

* Includes Rubella, Congenital Syndrome.

** Acquired outside United States unless otherwise stated.

From January 1, 1981 - December 31, 1981 the following cases were also reported: 3-Leptospirosis; 13-Cholera; 1-Tularemia; 1-Psittacosis; 1-Brucellosis; 1-Actinomycosis; 2-Cryptococcosis; 2-Rocky Mountain Spotted Fever; 1-Reyes Syndrome.

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Office of Health Services and Environmental Quality
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TOTAL TO DATE 19 80	15	13	67	38	5	82	919	311	5	59	98	233	478	2	212	7	22740	1422	19
TOTAL TO DATE 19 81	4	9	6	8	3	109	1188	367	4	14	140	158	423	3	237	2	23590	1645	34
TOTAL IN SUPPLEMENT	0	0	0	1	1	11	72	14	1	1	14	15	0	0	20	0	347	0	0
ACADIA							1	1									3		
ALLEN																			
ASCENSION																			
ASSUMPTION																			
AVOYELLES																	1		1
BEAUREGARD																			
BIENVILLE																	1		1
BOSSIER								1				1					21		1
CADDO						7	2	2			1	11			9		34		1
CALCASIEU															1				
CALDWELL																			
CAMERON																			
CATAHOULA																3			
CLAIBORNE													1				4		1
CONCORDIA																	1		1
DESO TO																	30		1
EAST BATON ROUGE																			
EAST CARROLL																			
EAST FELICIANA																			1
EVANGELINE																			1
FRANKLIN							1												
GRANT																			
IBERIA							2										5		
IBERVILLE																			
JACKSON																			
JEFFERSON				1		1	34	1	1						1		38		
JEFFERSON DAVIS																			
LAFAYETTE								1		1							3		
LAFURCHE							1				2						11		
LASALLE							2												1
LINCOLN																			
LIVINGSTON											1				1				
MADISON																			
MOREHOUSE								1											
NATCHITOCHE																	1		7
ORLEANS				1		1	11	1			5				3		161		1
QUACHITA							4										2		1
PLAQUEMINES								1			1						1		
POINTE COUPEE																			
RAPIDES												1					3		7
RED RIVER																	2		1
RICHLAND																	1		
SABINE																			1
ST. BERNARD							1										1		
ST. CHARLES							1										2		
ST. HELENA																			
ST. JAMES																			
ST. JOHN																		1	
ST. LANDRY								1			1								
ST. MARTIN																			
ST. MARY							1												
ST. TAMMANY								1									2		
TANDIPACHOA											2						4		
TERESA																			
TERRE BONNE						1	9	1				1			1		5		1
TERRE LAURE								1											
VERMILION						1													
VESTIBON							1										2		5
WASHINGTON							1				1								1
WEBSTER																			
WEST BATON ROUGE																	1		
WEST CARROLL									1								1		
WEST FELICIANA															1				
WEST																			
OUT OF STATE																	3		

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 3-Cholera.

