

A PROSPECTIVE STUDY OF ACUTE VIRAL HEPATITIS IN  
A MILITARY HOSPITAL IN BANGKOK

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**OBJECTIVE :** To determine the importance of hepatitis virus type A, type B, and other viruses as causes of acute symptomatic hepatitis among Thai adults at a military hospital.

**BACKGROUND :** Hepatitis viruses type A (HAV) and type B (HBV) are endemic in Thailand; most healthy adult Thais have serum antibodies to both viruses. The proportion of acute hepatitis cases caused by HAV, HBV and other (NANB) viruses in Thailand was determined to assess the relative impact and priority for control of each of these viruses in Thailand.

**METHODS :** During the one year period 1 July 1979 through 30 June 1980, 122 consecutive adult Thai patients who presented to the Royal Thai Army Hospital with a clinical diagnosis of symptomatic acute viral hepatitis were prospectively studied. Criteria for acceptance as a confirmed case of viral hepatitis were (1) elevated serum SGOT or SGPT ( $\geq 80$  units/ml) and serum total bilirubin ( $\geq 2.0$  mg%) (2) lack of history of hepatotoxic drug exposure and (3) no alternative diagnosis ultimately disclosed. On each clinic visit a history and physical examination questionnaire form was completed and blood was obtained for SGOT, SGPT, bilirubin, anti-HAV IgM, HBsAg, anti-HBs, anti-HBc, anti-cytomegalovirus, and anti-Epstein-Barr virus tests. The average number of hospital visits and blood samples per patient was  $3.4 \pm 1.6$  (mean  $\pm 1$  S.D.). Of the 91 cases that met study criteria for confirmed viral hepatitis, a follow-up period of 1 week or longer, 1 month or longer, or 3 months or longer was obtained in 83%, 71%, and 52% respectively. 75 cases were male and 16 female; 40 were military active duty and 51 were civilian.

Table 1 lists the laboratory studies performed to determine the etiologic agent in each case.

**RESULTS :** The number of cases of viral hepatitis due to each agent is listed in Table 2. The age and sex distribution, the seasonal distribution, patient historical data, patient symptoms, and maximum laboratory abnormalities are presented in Figures 1 and 2 and Tables 3, 4 and 5.

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Table 1. Viral Hepatitis Laboratory Studies

Test	Samples tested		
	All Sera All Patients	Acute Sera All Patients	Selected Sera Selected Patients
HBsAg: CIEOP	+		
RIA	+		
Anti-HBs: CIEOP	+		
RIA	+		
<hr/>			
Anti-HBc: Blocking RIA (% Block)		+	+
IgM anti-HBc: Direct RIA		+	+
IgG anti-HBc: Direct RIA		+	+
IgG anti-HAV Blocking RIA: SAPA Modification		+	+
<hr/>			
Anti-HAV: Blocking RIA (titer)			+
Anti-CMV: CF (titer)			+
Anti-EBV: Slide heterophile			+
VCA-IFA (titer)			+
Anti-leptospirosis (micro-agglutination)			+

Table 2. Serum Bilirubin and Transaminase Abnormalities in Patients with acute HAV, HBV, HAV+HBV, or HNANB

LFT Results	Laboratory determination of viral hepatitis type				Total
	A	B	A+B	NANB	
Abnormal Bili T > 2.0 and SGOT or SGPT $\geq$ 80	21	59	4	7	91
Borderline 1.2 $\leq$ Bili T $\leq$ 1.9 and/or 40 $\leq$ SGOT or SGPT $\leq$ 79	5	8	0	5	18
Normal Bili T $\leq$ 1.2 and SGOT and SGPT < 40	1	0	0	12	13
<b>Total</b>	<b>27</b>	<b>67</b>	<b>4</b>	<b>24</b>	<b>122</b>

Table 3. Tabulation of History Questionnaire Forms-Acute Hepatitis Patients

	<u>A (n=21)</u>	<u>B (n=59)</u>	<u>A+B (n=4)</u>	<u>NANB (n=7)</u>	<u>Total (n=91)</u>
Prior hospitalization	3(14)*	11(18)	1(25)	1(14)	16(17)
Family history of hepatitis (ever)	4(19)	7(12)	1(25)	1(14)	13(14)
Alcohol intake > $\frac{1}{2}$ bottle Mekong whiskey/day	1(05)	9(15)	1(25)	3(43)	14(15)
Friends or co-workers with hepatitis (6 mos)	3(14)	7(12)	1(25)	2(29)	13(14)
Medicines taken (2 mos)	9(43)	13(22)	1(25)	2(29)	25(27)
Chemical exposure (2 mos)	0(00)	2(03)	0(00)	0(00)	2(02)
Injections (6 mos)	7(33)	8(13)	2(50)	1(14)	18(20)
Blood transfusion (6 mos)	0(00)	2(03)	0(00)	0(00)	2(02)
Blood donation (6 mos)	4(19)	8(13)	0(00)	0(00)	12(13)
Surgical or dental operation (6 mos)	2(10)	7(12)	1(25)	0(00)	10(11)
Intravenous drug abuse (ever)	2(10)	7(12)	1(25)	0(00)	10(11)
Intravenous drug abuse (6 mos)	1(05)	4(07)	0(00)	0(00)	5(05)

\* percent

Table 4. Symptoms Reported by Patients with Initial Clinical Diagnosis of Acute Viral Hepatitis

	ABN LFT's				BORDERLINE LFT's			NORMAL LFT's	
	A(21)	B(59)	A+B(4)	NANB(6)	A(5)	B(7)	NANB(4)	A(1)	NANB(11)
Malaise	1.6	1.3	0.8	1.2	0.8	1.3	1.0	0	1.1
Fever	0.3	0.4	0.0	0.8	0.6	0.4	0.8	0	0.6
Anorexia	1.0	1.1	0.5	0.3	0.6	0.6	0.8	0	0.9
Nausea	1.0	0.8	0.2	0.5	0.4	0.7	0.5	0	0.8
Vomit	0.5	0.5	0.2	0.2	0.0	0.3	0.0	0	0.3
Abd Pain	0.6	0.7	0.5	0.8	0.8	1.0	0.8	0	0.7
Head Ache	0.5	0.8	0.2	1.0	0.4	0.7	0.8	0	1.2
Joint Pain	0.7	0.5	0.5	0.2	0.4	0.9	0.0	0	1.0
Rash	0.1	0.2	0.2	0.2	0.4	0.3	0.2	0	0.2
Eye irit	1.0	1.1	1.7	1.3	1.2	1.0	0.5	1	1.0
Dark urine	2.7	2.9	2.8	3.2	3.2	2.6	2.0	1	1.9
Bleeding	0.2	0.1	0.0	0.0	0.0	0.2	0.0	0	0.2

Numbers represent mean score per symptom as assessed by patient.

0 = symptom absent; 1 = present, barely noticeable; 2 = definite noticeable; 3 = severe;

4 = incapacitating.

Table 5. Abnormal Clinical Laboratory Tests in Acute Viral Hepatitis :  
Comparison of Maximum Abnormal Values.

Laboratory Test	Viral Hepatitis Type			
	A (n=21)	B (n=59)	A+B (n=4)	NANB (n=7)
	NS			
Total WBC	8.3 ± 3.0	9.2 ± 2.7	7.6 ± 3.2	10.2 ± 6.3
	p < .001		p < .05	
ESR*	19.5 ± 8.8	9.2 ± 6.2	11.0 ± 11.0	8.5 ± 7.3
	p < .005			
SGOT	305 ± 186	532 ± 389	410 ± 285	557 ± 454
	NS			
SGPT	460 ± 283	540 ± 457	460 ± 307	551 ± 307
	NS			
Alk Phos	5.2 ± 2.0	4.3 ± 1.6	6.8 ± 4.2	4.2 ± 1.6
	NS			
Total Bilirubin	7.7 ± 7.2	11.0 ± 7.9	8.2 ± 6.2	11.2 ± 7.6
	NS			
Albumin**	4.0 ± 0.3	3.8 ± 0.4	3.8 ± 0.1	3.6 ± 0.3

\* Males only (n<sub>A</sub> = 19, n<sub>B</sub> = 40, n<sub>A+B</sub> = 3, n<sub>NANB</sub> = 7)

\*\* Minimum value recorded

Fig. 1. Age and sex distribution of acute hepatitis cases

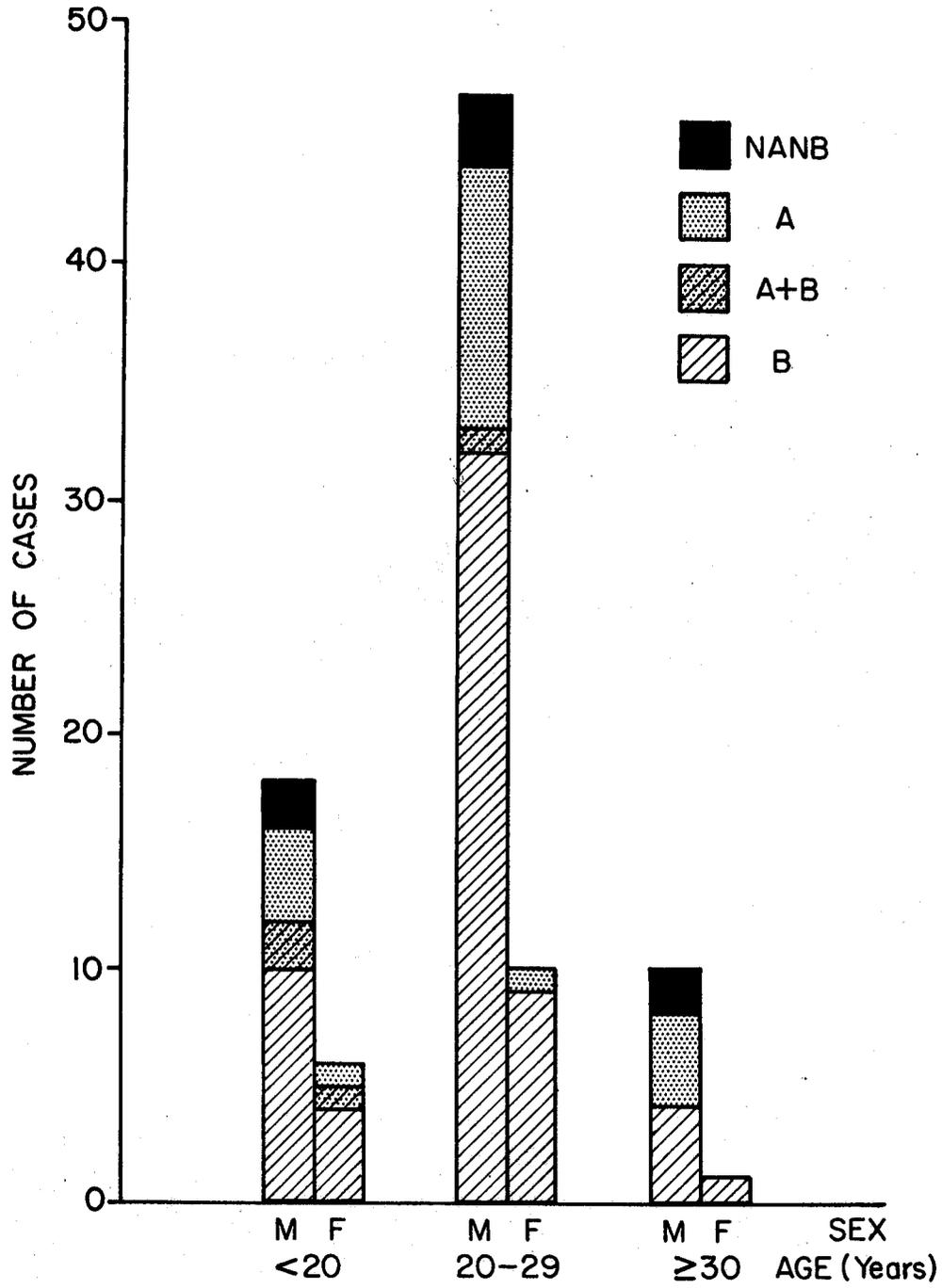


Figure 2.

