

A review of viral hepatitis infection in Nepal

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Viral hepatitis is one of the most common serious public health problem in Nepal. Some cities of Nepal are considered to be an area of high endemic prevalence of viral hepatitis. The occurrence of acute sporadic viral hepatitis with a seasonal pattern has been noted in the Kathmandu valley for past three decades. Three epidemics of non A non B (NANB) hepatitis were noted in Kathmandu Valley during 1973,¹ 1981/82,² and in 1987 (B. Innis et al). In Nepal hepatitis virus A, B, and enterically transmitted non-A non-B hepatitis virus (also called hepatitis E virus) are found.

Hepatitis A known as infectious hepatitis is caused by the hepatitis A virus (HAV) classified as picorna virus. The infection of HAV may be present among children asymptomatically and illness is usually not accompanied by jaundice, but most infected adults become symptomatically ill with jaundice.³ Hepatitis virus A is usually transmitted by faecal-oral contamination generally through drinking contaminated water or eating food that has been exposed to contaminated water. Predisposing factors for easy transmission are poor personal hygiene, poor sanitation and intimate contact with the patient. In recent years, cases of hepatitis A among intravenous drug users, most likely due to person-to-person contact, have been reported with increasing frequency.⁴ Hepatitis A virus has a world wide distribution and is predominantly an

infection of children. The secondary attack rate in household contacts of the cases is approximately 10-20%.⁵ Diagnosis by serological confirmation is only the reliable method. For pre exposure prophylaxis and post exposure treatment of HA infection, immunoglobulin (IG) is recommended world wide. However, mass prevention is largely a matter of public hygiene.

Hepatitis B infection known as serum hepatitis is caused by the hepatitis B virus (HBV) of the class hepadnaviridae. HBV infection is a major cause of acute and chronic hepatitis, cirrhosis and primary hepatocellular carcinoma. HBV infection is highly endemic in some of the South East Asian Countries. Hepatitis B virus carrier rates among healthy population of Bangladesh, Mongolia, Myanmar and Thailand is 9-14%, and the rate in Bhutan, India, Indonesia and Maldives is 5-7%; where as in Nepal and Shree Lanka the HbsAg carrier rate is 0.9-1%.⁶ In this region, vertical transmission from mother to infant and horizontal transmission of HBV mostly occurs during childhood. It has been found that 8-15% of the population in this region are chronically infected with HBV.³ Though hepatitis B virus infection is common to infants and children, it is highly prevalent in certain groups like, health-care and public safety workers, mentally disabled people, sexually active homosexual men, illicit injectable drug users, recipients of certain blood products, households and

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sexual contacts of HBV carriers, and so on. It is estimated that about 6% of the total population of South East Asian Countries are HBV carriers.³

Enterically transmitted non-A non-B (ETNANB) hepatitis is one of the most common form of gastroenteritis. The route cause of this disease is eating or drinking contaminated food/water. Routes of transmission of ETNANB virus are similar to those of HAV. The case fatality rate in most epidemics of ETNANB hepatitis has been 2-5% or more. Particularly striking is the case fatality rate in pregnant women, at 10-15%, with deaths resulting from fulminant hepatitis. Mortality is highest during the third trimester of pregnancy and lowest during the first trimester.⁶

Magnitude of the problem

Acute sporadic viral hepatitis in children and adults has been noted time to time in various hospitals in the country. Unclassified cases and deaths of viral hepatitis infection in different age group from different hospitals during 1989 - 1991 period were collected by the Division of Epidemiology.

It is noted that, from Figure I, the total number of cases has been in increasing trend in each year. Similarly, the total deaths has not been reduced in the three-year period. In all three years highest occurrence of cases and deaths was in the Central Development Region of Nepal (Figure II). In the year 1991, compared with

1989, more than three times case had occurred in this region.

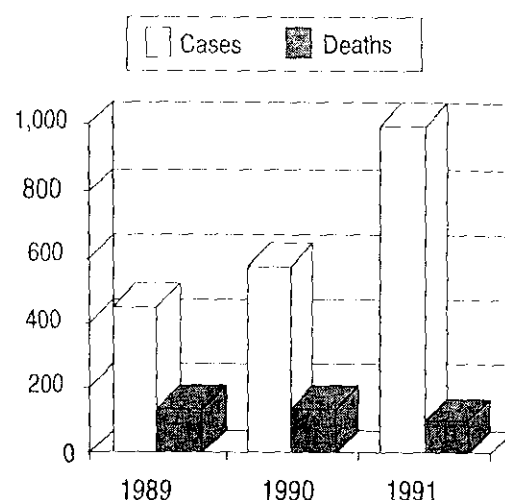


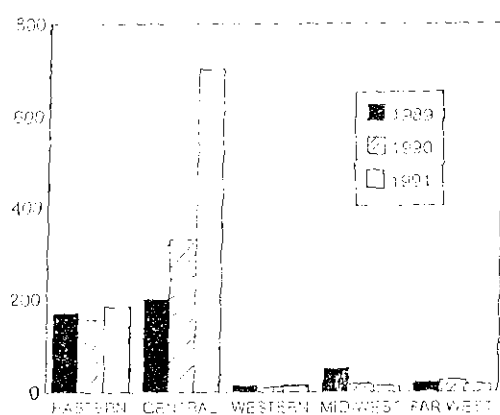
Figure I: Cases and deaths of viral hepatitis in Nepal, 1989-1991.

Source : Epidemiology Division

No significant changes in case fatality rates (CFR) from year to year was noticed. However, highest CFR has been noticed in Far-Western Region of Nepal in each year (Table 1). The average CFR of viral hepatitis in the entire kingdom remained 10.5% for the three years.

Table 1: Reported cases, deaths and CFR by development regions in the years 1989-1991.

Regions	1989			1990			1991		
	Case	Death	CFR %	Case	Death	CFR %	Case	Death	CFR %
Eastern	170	16	9.4	155	18	11.6	182	16	8.8
Central	201	21	10.4	329	25	7.6	702	78	11.1
Western	167	1	6.3	10	1	10.0	13	1	7.7
Mid-West	50	9	18.0	17	2	11.8	12	1	8.3
Far-West	21	5	23.8	26	6	23.1	17	2	11.8
TOTAL	458	52	11.4	537	52	9.7	926	98	10.6



Source: Epidemiology Division

Figure II: Reported cases of viral hepatitis by region, 1989-1991.

Table 2 shows the CFR % in different age groups being highest in the children under five years of age. The average CFR among under five population for three years remained 16.1%. Similarly, the average CFR among 5-15 years age group was 12.1%; among 16-44 years, 9.5% and among 45 years & above age, 10.1% (Figure III).

A laboratory test of hepatitis B surface antigen (HBsAg) in the general population was carried out by the Central Health Laboratory (CHL) in past 10 years (Table 3), which reflected that out of the total cases tested 7.1% were positive.

Table 2: Reported cases, death and CFR of viral hepatitis by age group in the years 1989-1991.

Age Group	1989			1990			1991		
	Case	Death	CFR %	Case	Death	CFR %	Case	Death	CFR %
0 - 4	34	8	23.5	47	7	14.9	74	10	13.5
5 - 15	104	17	16.3	51	5	9.8	76	6	7.8
16 - 44	217	20	9.2	257	25	9.7	544	52	9.5
45 +	103	7	5.8	182	15	8.2	232	30	12.9
TOTAL	458	52	11.4	537	52	9.7	926	98	10.6

Table 3: Analysis of HBsAg test results for the last 10 years.

Year	No. of HBsAg TESTED	No. of HBsAg Positive	% of +ves	Remarks
2040	479	59	12.3	HBsAg being positive in higher percentage of the people presenting with jaundice.
2041	659	64	9.7	
2042	1464	47	3.2	
2043	542	21	3.9	
2044	565	57	10.09	
2045	288	24	8.3	
2046	387	37	9.6	
2047	400	31	7.8	
2048	436	37	8.5	
2049	357	19	5.3	
Total	5577	396	7.2	

Source: Central Health Laboratory, MOH.

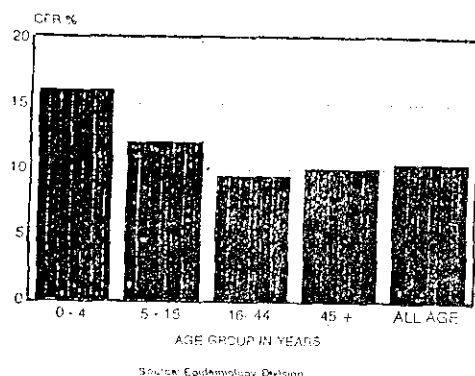


Figure III: Case fatality rate of hepatitis by age group (average CFR % from 1989 - 1991)

RECOMMENDATIONS

1. Mode of transmission of hepatitis A virus (HAV) and HEV (enterically - transmitted non - A, non-B) is person to person by the faecal - oral route. Therefore, public should be educated about good sanitation and personal hygiene, with special emphasis on careful hand washing and sanitary disposal of faeces.
2. For the prevention of probable outbreak of HAV and HEV make special efforts to improve sanitary and hygienic practices to eliminate faecal contamination of foods and water.
3. Most common mode of transmission of hepatitis B virus (HBV) is through contaminated blood, blood products, unsterile needles and other surgical instruments. Saliva, semen, menstrual blood and other secretions also carry
4. the virus. In Nepal, it is seen from the data of past 10 years (Table 3), 7.2% HBsAg is positive. Hepatitis B vaccine is safe and effective but due to the high cost of HBV vaccine it can not be used in large scale. Its administration is recommended to high risk groups viz., dialysis staff, dialysis patients, staff working in blood transfusion, haematology or hepatology services.
4. Use of disposable or properly sterilized needles, syringes and surgical instruments is recommended for the prevention of HBV.
5. Uninfected household members should avoid from direct exposure with saliva, semen, menstrual blood and other secretions of HBV infected patient.
6. For the prevention of HBV, all donated blood should be tested for HBsAg by sensitive tests in blood banks and reject as donors all individuals who have a history of viral hepatitis, show evidence of drug addiction or have received a blood transfusion or tattoo within the preceding 6 months.
7. For generation of data and samples for nationwide surveillance, sentinel centre should be established in different regional hospitals.
8. During hepatitis outbreak, secondary preventive measures, such as public awareness and chlorination of drinking water programme should be conducted.
9. In far western region hepatitis CFR is higher than other regions, therefore attention should be paid for the improvement of laboratory facilities and hospital management for early case detection and better case management.

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