CLINICO-EPIDEMIOLOGY OF HEPATITIS C VIRAL INFECTION IN NORTHEASTERN THAILAND

Kitti Chunlertrith[1], Wattana Sukeepaisarnjaroen[1], Pisaln Mairiang[1], Yupa Urwijitaroon[2], Kojiro Takase[3], Toru Yamauchi[4], Hitoshi Yoshimura[5] and Yokihiko Tameda[5]

[1]Department of Medicine, Srinagarind Hospital, Faculty of Medicine; [2]Department of Clinical Immunology, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen 40002, Thailand; [3]Department of 1st Internal Medicine; [4]Department of Public Health; [5]Department of Laboratory Medicine, Mie University School of Medicine, Japan

Abstract. Hepatitis C virus (HCV) is responsible for a large number of cases of chronic liver disease worldwide. A study of clinico-epidemiology of HCV infection was conducted in 214 patients who were seropositive for antibody to HCV (anti-HCV) in Srinagarind Hospital , Khon Kaen University, northeastern Thailand, during August 1997 to December 1998. There were 199 males, 15 females and their mean age was 34.96 $\pm$ 9.75 years with a range from 16 to 72 years. The clinical features of acute hepatitis, chronic hepatitis, liver cirrhosis, hepatocellular carcinoma (HCC) and asymptomatic HCV infection were 2, 115, 15, 2 and 80 cases. Risk factors for HCV acquisition were intravenous drug use (IVDU), tattooing and blood transfusion in 46.7, 32.2 and 18.8% of cases, respectively. 23.36% had a history of multiple risk factors while 28.9% had no history of risk factor exposure.

INTRODUCTION

Hepatitis C virus (HCV) is responsible for a large number of chronic liver disease cases worldwide. The worldwide seroprevalence of HCV infection, base on antibody to HCV (anti-HCV), is estimated to be 1%. However, marked geographic variation exists, from 0.4% to 13.6% (Rall and Dienstag, 1995). In initial studies, HCV was shown to be the major cause of post-transfusion hepatitis (Alter *et al*, 1990; Choo *et al*, 1990; Feinstone, 1990). In Thailand initial seroepidemiologic studies showed that the seroprevalence of HCV infection was about 1-1.5% (Poovorawan *et al*, 1991) and then there were reports showing a 2.4% prevalence rate of HCV infection in blood donors in northern Thailand (Mundee *et al*, 1995), 4.1% in Bangkok blood donors (Luengrojanakul *et al*, 1994) and 5.6% in northeastern Thailand (Songsivilai *et al*, 1997). HCV is transmitted not only via the parenteral route but also via sexual contact (Steven and Taylor, 1990; Isaranurug *et al*, 1996; Luksamijarulkul and Deangbubpha, 1997). One of the high risk groups is intravenous drug abuse (IVDU) with high prevalence of HCV infection, about 48-90% (Alter *et al*, 1997; Luksamijarulkul and Plucktaweesak, 1996). Acute HCV infection is rarely seen in clinical practice because the vast majority of patients experience no clinical symptoms (Seeff, 1995). Chronic HCV infection is a common disease in about 50-70% of cases and 15-20% of chronic infections gradually progress to liver cirrhosis and hepatocellular carcinoma (Seeff *et al*, 1992; Koretz *et al*, 1993; Mattsson *et al*, 1993). This study aimed to examine the clinico-epidemiology of HCV infection in Srinagarind Hospital, Khon Kaen Province which is situated in the center of northeastern Thailand.

MATERIALS AND METHODS

Definition of terms

HCV infection is defined as presenting with anti-HCV in the serum (Rall and Dienstag, 1995).

Acute hepatitis is defined as present infection with prodromal symptoms and increased serum alanine aminotransferase (ALT) (Seeff, 1995).

Chronic hepatitis is defined as sustained increase of ALT, seropositive for anti-HCV for more than 6 months (Seeff, 1995).

Asymptomatic HCV infection is defined as asymptomatic and normal ALT but seropositive for anti-HCV.

Cirrhosis is defined as presenting with sign and symptom of cirrhosis and impairment of synthetic function of the liver.

HCC is defined as presenting with liver mass and positive for histology or increased of serum alphafetoprotein.

Patient selection

During August 1997 to December 1998, adult patients who seropositive for anti-HCV at the Out-Patient Department of Medicine, Srinagarind Hospital were included in this study.

Data collection

Patients were systematically queried and physical examination carried out for data collection according to the protocol by the physician; blood for liver function tests was taken. Ultrasonography and other investigations were done if indicated.

This study was approved by Ethics Committee of the Faculty of Medicine, Khon Kaen University.

Statistical methods

Descriptive and prospective study was analyzed by number and percentage of cases.

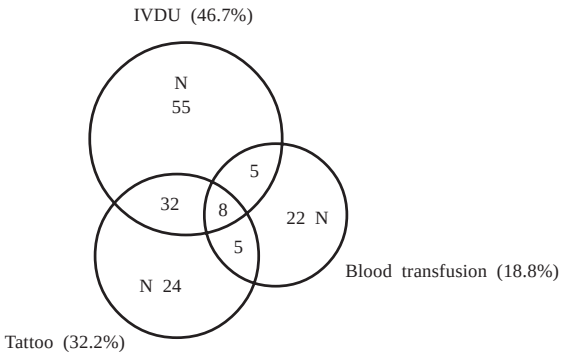

Fig 1–Risk factors for HCV acquisition.

RESULTS

Two hundred and fourteen cases seropositive for anti-HCV were noted, comprising, 199 males and 15 females. Their ages ranged from 16 to 72 years and the mean age was 34.96±9.75 years. The age distribution is presented in Table 1. The clinical features of acute hepatitis , chronic hepatitis, liver cirrhosis, HCC and asymptomatic HCV infection were 2, 115, 15, 2 and 80 cases, while the mean ages in each clinical groups were 24.50±4.95, 35.35± 9.15, 48.20±10.78, 56.00±11.31 and 31.65±7.40, respectively.

Fig 1 shows the risk factors for HCV acquisition. Overall, 46.7% of patients had a history of intravenous drug use, 32.2% had a history of tattoo, 18.8% had a history of blood transfusion and 23.36% had a history of multiple risk factors. Sixty-two cases (28.9%) had no history of risk factor exposure.

DISCUSSION

Presence of anti-HCV in the serum is diagnostic of HCV infection but HCV RNA may be used for diagnosis in the early stages of acute HCV infection (de Medina and Schiff, 1995). The peak incidence of HCV infection is the third to fifth decades. Acute infection is rarely seen in clinical practice because the vast majority of patients experience no clinical symptoms. Infection with HCV, once established, persists in the vast majority. Disease progression is largely silent, with patients often identified only on routine biochemical screening or during the course of blood donation.

This descriptive study shows that HCV infection is found in all age groups of adult patients but common in the third and fourth decades, males much more than females. The common clinical presentation was asymptomatic, with only mild symptoms such as fatique or right upper quadrant discomfort. The clinical features were variable from asymptomatic HCV infection to liver cirrhosis and HCC but there was no clinical feature of acute fulminating hepatitis. The most common clinical feature is chronic hepatitis, which was found in 53.7% of cases. The other clinical features were asymptomatic HCV infection, liver cirrhosis, acute hepatitis and HCC which were found in 37.4, 7.0, 0.9 and 0.9% of cases, respectively. The vast majority of patients were diagnosed during the course of blood donation. Only 2 cases of acute hepatitis were diagnosed in this study. We found that acute hepatitis occured in young age (24.50±4.95) and HCC in old age (56.00±11.31); asymptomatic (31.65±7.40), chronic hepatitis (35.38±9.15) and liver cirrhosis (48.20±10.78) were in middle age. The mean age of liver cirrhosis was older than chronic HCV infection by about 10-15 years which correlated with previous studies; 20-50% of patients with chronic HCV infection may develop cirrhosis within 10-20 years (Tong *et al*, 1995).

Previous studies examined patients with chronic HCV infection and revealed that of 25% and 49% of patients had a history of blood transfusion and intravenous drug use respectively, while only 12%

Table 1
Age distribution and mean age in relation to each clinical feature.

Age group (year)		Clinical group					Total
		AH	CH	LC	HCC	Asymptomatic	
15-25	Count	1	22			20	43
	% within age group	2.3	51.2	-	-	46.5	100.0
	% within clinical group	50.0	19.1			25.0	20.1
26-35	Count	1	26			30	57
	% within age group	1.8	45.6	-	-	52.6	100.0
	% within clinical group	50.0	22.6			37.5	26.6
36-45	Count		57	8		29	94
	% within age group	-	60.6	8.5	-	30.9	100.0
	% within clinical group		49.6	53.3	-	36.3	43.9
46-55	Count		9	3	1	1	14
	% within age group	-	64.3	21.4	7.1	7.1	100.0
	% within clinical group		7.8	20.0	50.0	1.3	6.5
56-65	Count		1	3	1		5
	% within age group	-	20.0	60.0	20.0	-	100.0
	% within clinical group		0.9	20.0	50.0		2.3
66-75	Count			1			1
	% within age group	-	-	100.0	-	-	100.0
	% within clinical group			6.7			0.5
Total		2	115	15	2	80	214
Mean age (year)		24.50±4.95	35.35±9.15	48.20±10.78	56.00±11.13	31.65±7.40	34.96±9.75

had no history of risk factor exposure (Flamm *et al*, 1998). This study shows IVDU (46.7%) was the most common risk factor for HCV acquisition. The other risk factors were tattoo (32.2%) and blood transfusion (18.8%). Fifty cases (23.4%) had a history of multiple risk factors and sixty-two cases (28.9%) had no history of risk factor exposure.

We can prevent or decrease the rate of HCV infection from blood transfusion by screening anti-HCV of blood donors. Health education may be useful for prevention and decreased rate of HCV infection in IVDU and tattooing because vaccination is unavailable now.

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