BRIEF COMMUNICATION

PREVALENCE OF HEPATITIS C VIRUS INFECTION IN QUILOMBO REMNANT COMMUNITIES IN CENTRAL BRAZIL

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SUMMARY

In order to determine the prevalence of hepatitis C virus (HCV) infection in quilombo remnant communities in Central Brazil, 1,007 subjects were interviewed in all 12 communities existing in Mato Grosso do Sul State, Central Brazil. Blood samples were collected and sera were tested for anti-HCV by enzyme-linked immunosorbent assay. Positive samples were retested for confirmation using a line immunoassay and were also subjected to HCV RNA detection. The prevalence of HCV infection was 0.2%. This finding shows a low prevalence of HCV infection in quilombo remnant communities in Central Brazil.

KEYWORDS: Afro-Brazilian; Hepatitis C virus; Prevalence.

INTRODUCTION

Hepatitis C virus (HCV) is a well-known agent of liver diseases, including chronic hepatitis, cirrhosis, and hepatocellular carcinoma[3]. HCV infection prevalence (0.01%-20%) and genotypes (1-6) have distinct geographical distributions[1,10]. In Brazil, anti-HCV prevalence among blood donors, varied from 0.3% in Santa Catarina State, south region, to 5.9% in Amazon region[4,8]. In the five Brazilian geographical regions, genotype 1 has been the most frequently detected[2].

The Brazilian population is descendant mainly from European colonizers, Africans, and Amerindians. African individuals were introduced to Brazil by slave trade. Some of them escaped from gold mines or farms, setting in remote valleys. These runaway-slave descendants stayed in communities, called quilombos. Nowadays, there are 1,137 communities whose history and tradition allows them to be identified as remnants of quilombos. The epidemiological status of HCV infection in these communities remains unknown. The objective of this study was to determine the prevalence of HCV infection in quilombo remnant communities in Central Brazil.

MATERIALS AND METHODS

This study included 1,007 individuals living in all 12 quilombo remnant communities in Mato Grosso do Sul State, Central Brazil: Furnas dos Dionísios, Jaraguari county (n = 232), São Benedito, Campo Grande county (n = 217), Furnas da Boa Sorte, Corguinho county (n = 127), Malaquias, Camapuã county (n = 83), Jerônimos, Terenos county (n = 71), São Miguel, Maracaju county (n = 49), Orolândia, Rio Negro county (n = 49), São Miguel, Nioaque county (n = 47), Furnas dos Baianos, Aquidauana county (n = 43), Quintinos, Pedro Gomes county (n = 37), Morro do Limão, Campo Grande county (n = 27) and Amarelinhos, Sidrolândia county (n = 25). In all communities nearly 75% of inhabitants were studied.

The protocol used in the present study was approved by the Ethical Committee of the Federal University of Goiás. Informed consent was obtained from all participants (or their parents for children). Between March 2002 and November 2003, they were interviewed regarding demographic characteristics and possible risk factors for HCV infection such as history of blood transfusion, surgery, dental treatment, acupuncture, tattooing, intravenous drug use, lifetime number of sexual partners, sexually transmitted disease, imprisonment and familial hepatitis. Blood samples were collected from all individuals and sera were stored at -20 ºC.

Serum samples were screened by enzyme-linked immunosorbent assay (ELISA) for the presence of anti-HCV antibodies (INNOTEST HCV Ab III, Innogenetics NV, Belgium). Positive samples were retested for confirmation using a line immunoassay (INNO-LIA HCV Ab III, Innogenetics) and were also subjected to RNA extraction, reverse transcription, and a nested PCR with primers complementary to the conserved area of the 5' NC region of HCV, essentially as described previously[6].

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RESULTS AND DISCUSSION

The population ranged in age from less than one to 108 years (average and median: 29.9 and 24 years). Five hundred twenty-seven (52.3%) were females and 480 (47.7%) were males. Of the participants, 44% were single, 32.8% were married and 23.2% were divorced/separated or widowed. The majority of these individuals had a low socioeconomic status (40% reported a monthly income less than US$ 200 and the remaining between US$ 200 and 600) and level of schooling (80% had received eight years or less of formal education). Risk characteristics reported by the studied population are shown in Table 1.

Table 1
Risk characteristics reported by the studied population in quilombo remnant communities in Central Brazil

Risk characteristics	Reporting risk characteristics	
	Number/Total	(%)
Blood transfusion	91/1007	(9.0)
Surgery	188/1007	(18.7)
Dental treatment*	758/1007	(75.3)
Acupuncture	3/1007	(0.3)
Tattooing	37/1007	(3.7)
Intravenous drug use	0/1007	(0)
Lifetime number of sexual partners**		
0	195/815	(23.9)
1-5	420/815	(51.5)
> 5	200/815	(24.6)
Sexually transmitted disease***	78/620	(12.6)
Imprisonment	18/1007	(1.8)
Familial hepatitis	265/1002	(26.4)

*Dental treatment was performed in the communities during health campaigns and in health services in nearby cities; **The information for this variable is based on the individuals aged ≥ 12 years; ***Denominator reflects individuals who reported sexual activity.

Of the 1,007 studied individuals, six were found to be seropositive by ELISA. Of these, two were subsequently confirmed as being positive by LIA, one indeterminate and three negative, resulting in an anti-HCV prevalence of 0.2% in quilombo remnant communities in Central Brazil. All of them were HCV RNA negative. The anti-HCV prevalence found in this study is lower than that observed previously among blood donors from the same region (1.4%)[7], but comparable with those reported in other Brazilian rural populations (0-1.7%)[5,9]. These data suggest that HCV infection has a low endemicity in rural populations in Brazil.

Of the two anti-HCV-positive individuals, one was a 34-year-old man from Furnas dos Baianos community who did not mention any known source for infection. The other one was a 15-year-old girl from Furnas dos Dionísios community who reported previous dental treatment in health service in nearby city. However, this factor probably is not related to the acquisition of the HCV since the majority of the population (75.3%) reported dental treatment in health services in nearby cities and in the communities during health campaigns.

In conclusion, our findings point out a low endemicity for HCV infection in quilombo remnant communities in Central Brazil. However, owing to the large extension of Brazilian territory, further studies in quilombo remnant communities from different geographical regions are needed to know the true dimension of epidemiological status of HCV infection in these communities in Brazil.

RESUMO

Prevalência da infecção pelo vírus da hepatite C em comunidades remanescentes de quilombos no Brasil Central

Com objetivo de estimar a prevalência da infecção pelo vírus da hepatite C (HCV) em comunidades remanescentes de quilombos no Brasil Central, 1.007 indivíduos foram entrevistados nas 12 comunidades quilombolas existentes no Estado de Mato Grosso do Sul, Brasil Central. Amostras sanguíneas foram coletadas e os soros testados para anti-HCV pelo ensaio imunoenzimático. As amostras positivas foram testadas pelo ensaio confirmatório "line immunoassay" e também submetidas à detecção do RNA-HCV. A prevalência da infecção pelo HCV foi de 0,2%. Este achado mostra uma baixa prevalência da infecção pelo HCV em comunidades remanescentes de quilombos no Brasil Central.

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