

Prevalence of hepatitis C virus antibody among university students in Nigeria

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Abstract

Background: It has long been known that HCV infection is endemic in Nigeria with variable prevalence rates reported among subgroups and regions. Here we report the prevalence of HCV antibody among teenage university students in south-western Nigeria.

Methods: We performed a cross-sectional study involving 2406 teenage students with a mean age of 17.3 years at Babcock University, Ilisan-Remo, Ogun-State, Nigeria.

Results: In total, 18 of the participants blood samples were reactive for HCV antibody with no difference between males and females.

Conclusions: The 0.7% HCV antibody prevalence rate found in the participants in our study is lower than the overall prevalence of 2.1% recorded for Nigeria. This study provides further evidence of a low HCV prevalence among young healthy teenage university students in Nigeria.

Introduction

Hepatitis C virus (HCV) is an RNA virus and a member of the Flaviviridae family. It is most frequently transmitted parentally but vertically and sexually as well. HCV infection is of clinical significance due to its persistence in approximately 85% of infected individuals, posing a significant risk of subsequent chronic liver damage.

Its endemicity has long been established in Nigeria but there is a lack of information regarding its epidemiology [1]. Various levels of HCV antibody prevalence in population subgroups have been reported in the country, although infrequently in teenagers, a subgroup we believe could benefit from surveillance, early detection and treatment. Here we report on the prevalence of HCV antibody among teenage university students in south-western Nigeria.

Materials and methods

This is a cross-sectional study involving 2406 teenage students at Babcock University, Ilisan-Remo, Ogun-State, Nigeria. They were 1084 males and 1322 females with a mean age of 17.3 years. Informed consent was obtained from all participants and ethical approval granted by the University authority.

We collected a venous blood sample (3 mL) and tested it for the presence of HCV antibody using LabACON chromatographic immunoassay test strips because of its availability. This assay has a sensitivity of 99.1% and a specificity of 99.5%. It was performed according to the manufacturer's instructions. Prevalence of HCV antibody in participants was expressed as percentages.

Results

Table 1 shows that 18 of the 2406 participant blood samples were reactive for HCV antibody with no difference between males and females.

Table 1. Prevalence of HCV antibody among teenage students

	Reactive test N (%)		Non-Reactive test N (%)	
	M	F	M	F
Frequency n (%)	09 (0.8)	09 (0.7)	1075 (99.2)	1313 (99.3)
Prevalence n (%)	18 (0.7)		2388 (99.3)	

$\chi^2=0.67$, $df=1$

Discussion

It has long been known that HCV infection is endemic in Nigeria with variable prevalence rates reported among subgroups and regions [2]. The 0.7% HCV antibody prevalence rate found in teenage university students in our study is lower than the overall prevalence of 2.1% recorded for Nigeria [3]. This disparity may be due to the fact that our study targeted a young population subgroup, and also to the accuracy of the diagnostic method used to detect hepatitis C antibody. It has been documented that the immuno-chromatographic method (rapid test kit) is not sensitive enough to confirm HCV status in all cases [4].

Similar studies within and outside our region have recorded a prevalence rate of 0.4% in Ogbomoso within our region [5], a higher rate of 8% was found in Ilorin [6] and no infections in Port Harcourt [7]. The difference in seroprevalence between our study and previous reports in young people may be due to the number and age group of participants, and also to the prevailing cultural/traditional practices in different regions that could increase exposure to HCV.

There is no significant gender bias observed in the prevalence of hepatitis C virus in our study ($\chi^2=0.67$, $df=1$), differing from a previous report where females were more susceptible to HCV than males [6]; however, it is in agreement with the results obtained for the age range in a study conducted by Jemilohun *et al* within the same region [1] and also in Port Harcourt where both genders exhibited a zero prevalence [7].

Conclusion

This study provides further evidence of a low HCV prevalence among young healthy teenage university students in Nigeria.

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Such data may help further in reducing the HCV burden in the country with appropriate preventative and therapeutic measures.

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