

The Sero-Prevalence Of Hepatitis C Virus (Hcv) Infection Among Prospective Blood Donors In Makurdi, Nigeria

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Abstract

Background: Hepatitis C virus (HCV) infection with its associated sequelae is a disease of major public health importance worldwide. This study analyzed the results of Hepatitis-C screening among blood donors at the Federal Medical Centre, Makurdi over a 12-month period (January – December, 2008), with a view to establishing the prevalence rate in this area of the Middle Belt of Nigeria. **Methods:** Results of hepatitis – C screening from the blood bank unit of the study Centre were reviewed for the twelve month period (Jan. – Dec. 2008). Screening for antiHCV was done using a commercial enzyme linked immunosorbent assay. (ELISA kit) **Results:** A total of 1,400 samples were screened for hepatitis C over the one year period. The overall seropositivity rate was found to be 5.4% **Conclusion:** HCV infection is common in Makurdi. Adequate screening of prospective blood donors and the institution of adequate public health measures is advocated in order to reduce the transmission of this virus.

INTRODUCTION

HCV infection occurs frequently and is highly endemic in Nigeria¹⁻⁷. This high prevalence has been confirmed by various studies from different parts of Nigeria among selected groups^{1,2,6,7}. The high prevalence of HCV infection and its sequelae, such as liver cirrhosis and diabetes mellitus makes HCV infection a disease of major public health importance world wide and in Nigeria in particular^{1-5,8-13}. This study aims at analyzing the results of antiHCV screening among blood donors at Federal Medical Centre, Makurdi over a 1 year period, Jan – Dec 2008 with a view to establishing the prevalence rate in Makurdi metropolis in Middle Belt of Nigeria. It is also hoped that the data generated will assist in the formulation of a hospital biohazard policy for the laboratories and other clinical departments here, and elsewhere in the Middle Belt region of Nigeria.

SUBJECTS AND METHODS

Subjects consisted of all blood donors who reported to the blood bank for bleeding between Jan and December 2008. Their blood samples were screened for antiHCV using ELISA based kits.

RESULTS

Over the one- year period under study, a total of 1,400

samples were screened, out of which 76 samples (5.4%) were positive for HCV antibodies. (Table 1) All donors were males. The peak age prevalence was in the fifth decade and above (10%), followed by a prevalence of 8% in the 3rd decade (21 – 30 yrs).

Figure 1

Table 1: Samples screened for antiHCV at the Federal Medical Centre Makurdi (Jan – Dec 2008)

Age (in years)	No screened	No Positive	% Positivity
0-10	-	-	-
11-20	20	-	-
21-30	500	40	8
31-40	760	30	3.95
41-50	100	4	4
Above 50	20	2	10
Total	1400	76	5.4

DISCUSSION

The results of this study have highlighted the fact that Hepatitis C virus infection is common among blood donors

in Makurdi, Middle Belt region of Nigeria. The blood donors were all males between the ages of 20 and 60 and comprised mostly relatives and friends of hospital in-patients and some touts (paid donors). These donors represent a largely “well” segment of the adult male population and should mirror more closely the overall prevalence of HCV infection in the general adult male population.

The mean prevalence rate of 5.4% among blood donors in Makurdi is higher than that found in blood donors in some other cities in Nigeria such as Port Harcourt (0.5%), and Jos (4.3%)^{2,3}. This suggests that Makurdi might be an area of higher prevalence as compared to these other parts of Nigeria. Thus the rejection rate of blood donors in Makurdi based on antiHCV Positivity may be significant.

The reason for this higher prevalence of HCV infection in Makurdi, as compared to these other Nigerian cities is not clear for now. However, considering the fact that Benue State has the highest prevalence of the Human immunodeficiency virus (HIV) in Nigeria¹⁴, it may not be entirely surprising to have a high prevalence of other similar sexually transmitted diseases like Hepatitis – C in Makurdi. In other words the high seroprevalence rate of HCV infection obtained in this study may simply be a reflection of the high burden of sexually transmitted diseases in the general population of Benue state as a whole.

The observed prevalence rate of 5.4% however is lower than that found in Benin City (12.3%)¹. This Benin prevalence rate is one of the highest, if not the highest reported among blood donors anywhere in Nigeria. This suggests that Benin City is an area of higher prevalence, compared to Makurdi. The peak age prevalence of HCV infection in this study (10%) was in donors aged 50 years and above. This is at variance with a peak age prevalence of “18 – 27” years obtained in the Port Harcourt study², but slightly close to the “41 – 50” years’ peak age prevalence observed in the study in Benin City, Nigeria¹. The age group “18 – 27” years coincides with the more sexually active group who are expectedly more vulnerable to sexually transmitted infections, like Hepatitis – C infection. Most other studies both within and outside Nigeria have documented a clear trend of decreasing Positivity for antiHCV with increasing age among blood donors and other selected groups^{2,8-10}. Our study, on the contrary observed highest seroprevalence in donors aged 50yrs and above. This underscores the importance of routine screening of all donors before transfusion, regardless of donor demographic characteristics

like age.

In conclusion, the results of this study show that the prevalence of Hepatitis–C virus among healthy blood donors in Makurdi, Middle Belt region of Nigeria is considerably higher than the reported seroprevalence of HCV in some other parts of Nigeria and this indicates a large reservoir of infection capable of inflicting significant disease burden on the entire Middle Belt region. This also suggests a possibly higher rate of donor rejection based on HCV positivity. In addition, donors from this region of Middle Belt of Nigeria showed a trend of higher seroprevalence in older donors, possibly implying a higher exposure rate to HCV in older subjects. These findings call for adequate screening of all prospective blood donors to reduce the transmission of the infection. Other general measures like public awareness programmes to educate the public on modes of transmission of HCV infection (including sexual promiscuity) and the institution of adequate public health measures are advocated.

References

1. Halim NK, Ajayi OI. Risk factors and seroprevalence of hepatitis C antibody in blood donors in Nigeria. *East afr med J*. 2000; 77: 410 – 412.
2. Erhabor O, Ejele OA, Nwauche CA. The Risk of transfusion acquired hepatitis C virus infection among blood donors in Port Harcourt: the question of blood safety in Nigeria. *Niger J clin. Pract*. 2006; 9: 18 – 21.
3. Egah DZ, Banwat EB, Audu ES et al. Hepatitis B surface antigen, hepatitis C and HIV antibodies in a low risk blood donor group, Nigeria. *East mediterr. Health J*. 2007; 13: 961 – 966.
4. Koate BB, Buseri FI, Jeremiah ZA. seroprevalance of hepatitis C virus among blood donors in Rivers State, Nigeria. *Transfus med*. 2005; 15: 449 – 451.
5. Nwokediuko SC, Oli JM. Hepatitis C virus in Nigerians with diabetes mellitus. *Niger J clin Pract*. 2008; 11: 94 – 99.
6. Adegoke OA, Kolawole BA, Ikem RT, et al. Seroprevalence of Hepatitis C virus infection in Nigerians with type 2 Diabetes mellitus. *Niger J. clin Pract*. 2008; 11:199 – 201.
7. Olubuyide IO, Ola SO, Aliyu B et al. Hepatitis B and C in doctors and dentists in Nigeria. *QJM*. 1997; 90: 417 – 422.
8. Jain A, Rana SS, Chakravarty P et al. The prevalence of Hepatitis C virus antibodies among voluntary blood donors of New Delhi, India. *Eur J. Epidemiol*. 2003; 18: 695 – 697
9. Araj GF, K foury-Baz EE, Barada KA, Nassif RE. Hepatitis C Virus: Prevalence in Lebanese blood donors. *J med Liban*. 1995; 43:11 – 16.
10. Tamim H, Irani–HaKime N, Aoun JP, Khoury S. Seroprevalence of Hepatitis C virus (HCV) infection among blood donors: a hospital – based study. *Transfus Apher Sci*. 2001; 24: 29 – 35.
11. O’Riordan JM, Conroy A, Nourse C et al. Risk of hepatitis C infection in Neonates transfused with blood from donors infected with hepatitis C. *Transfus Med*. 1998; 8: 303 – 308.
12. Mutimer DJ, Olomu A, Skidmore S et al. Viral hepatitis in Nigeria – Sick Cell Disease and Commercial Blood

donors. QJM 1994; 87: 407 – 411.

13. Otegbayo JA, Taiwo BO, Akingbola TS, et al Prevalence of hepatitis B and C seropositivity in a Nigerian cohort of

HIV infected patients. Ann Hepatol. 2008; 7: 152 – 156.

14. HIV/Syphilis sentinel seroprevalence survey in Nigeria (2005); EPID Report, Federal Ministry of Health, Nigeria (FMOH)

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