

## Hepatitis C Virus Antibody in Patients Attending Private Tertiary Hospital in Nigeria

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### ABSTRACT

**Background:** Hepatitis C is one of the major viruses that is of great concern to health authorities around the world, this is because of its high mortality and morbidity rate. This virus is the causative agents for chronic and acute hepatitis, liver cirrhosis, and cancer, although there are many reports of its prevalence in Nigeria, none is available for private tertiary health facility.

**Method:** Laboratory results of patients screened for hepatitis C antibody between January 2017 and November 2019 were extracted from the laboratory database and the results were presented in simple percentage.

**Result:** A total of 3,359 patients were screened (1,409 males and 1,950 females), 90 patients were positive for hepatitis C antibody.

**Conclusion:** This study further support previous reports that hepatitis C is still endemic in Nigeria, there is a need to identify the phenotype of the hepatitis virus present in the country.

**Keywords:** Hepatitis C virus; Prevalence; Hepatitis C antibody; Nigeria; Occurrence

### INTRODUCTION

Hepatitis C Virus (HCV) is a RNA virus and a member of Flavivirus family; it is mostly transmitted parentally, although the virus can also be acquired vertically or sexually [1]. HCV is more infectious than the human immunodeficiency virus and it requires lesser contact to cause an infection [2]. The virus can persist in approximately 85% of infected individuals unlike hepatitis B virus, there is no vaccine that can protect against hepatitis C viral infection but it is curable [3]. Globally, hepatitis C virus is a causative agent for both acute and chronic hepatitis, which could be a mild infection lasting for a few weeks or a very severe life threatening disease. Chronic hepatitis often leads to the onset of liver cirrhosis, hepatocellular cancer, liver failure, and death [4].

Although, an accurate world estimate of people infected with HCV is not achievable due to high undiagnosed individuals and inappropriate data capturing previous estimate of hepatitis C

infection is put at between 2.6% and 3.1% of the world population [5,6]. The prevalence of hepatitis C infection varies from one region to another and even among communities within a country. The disparity in its prevalence may probably be due to peculiarity of each locality, for instance, prevailing unhealthy practices, culture, and habit of people living in a particular place could contribute to HCV prevalence. World Health Organization put the prevalence of hepatitis C virus by region as; Africa 5.3%, America 1.7%, South-East Asia 2.15% Eastern Mediterranean 4.6%, Europe 1.03%, Western Pacific 3.9% [7].

Nigeria has a large number of HCV-infected individuals with a wide range for seroprevalence, the prevalence rate is between 0.4% and 18.3% representing 1-30 million individuals and Federal Ministry of Health reports a prevalence of 2.2% representing 4 million Nigerians infected with Hepatitis C virus [8,9]. There is no know survey reporting the prevalence of hepatitis C in Nigeria but reports show estimated prevalence

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ranges between 0.4% and 14.7% depending on the population subgroup being considered [10]. Lately, private health institutions have enormous impact on health delivery in Nigeria, hence, high influx of patients suffering from chronic illnesses into private hospitals; however, there is a dearth of information for the prevalence of hepatitis C virus in patients attending private health facilities in Nigeria. The intent of this study is to report the prevalence of hepatitis C antibody among patients attending Babcock University Teaching Hospital, Ilisan-Remo. This group is essentially an unhealthy population suspected to be suffering from hepatitis C virus in our community, and the report, hopefully, will be added to the existing HCV database in our country.

## METHOD

This is a retrospective study which analyzed data obtained from the laboratory database of Babcock University Teaching Hospital, Ilisan-Remo, Ogun State, Nigeria, the data span for a period of 3 years (2017-2019). Babcock University Teaching Hospital is a private tertiary health institution found and funded by the Seventh Day Adventist Church in Nigeria.

The patients were screened on request for hepatitis C virus antibody using Diaspot rapid test kit, and result recorded in laboratory database. The choice of Diaspot test kits is because it is the kit approved by the hospital authority for the testing of HCV antibody in the facility.

An approval to pull patients results from the laboratory database was sought and given by the hospital authority. The results were retrieved from the database using patients' unique laboratory numbers, and therefore, confidentiality and anonymity are guaranteed. The data obtained were presented in simple percentage.

## RESULT

Table 1 is the distribution of patients tested for hepatitis C virus (HCV) antibody during the year under review 1,334 patients were tested for the antibody, and the lowest number of patient was seen in the year 2017 while 2019 presents the highest number. Table 2 shows the gender distribution of patients tested for HCV antibody, 1,409 (41.9%) were male while females account for 1950 (58.1%) patients. Table 3 indicates the distribution of reactive and non-reactive patients, a total of 90 (2.7%) patients were reactive for the antibody while 3,269 (97.3%) patients were non-reactive. Table 4 reports gender distribution of reactive patients, 44 (48.9%) males and 46 (51.1%) females were reactive for the antibody.

**Table 1:** Distribution of patients screened for hepatitis c antibody.

	2017	2018	2019
≤ 20 years	93	152	215
21-35 years	404	508	431
36-50 years	174	266	334

≥ 51 years	145	283	354
<b>Total</b>	<b>816</b>	<b>1209</b>	<b>1334</b>

**Table 2:** Gender distribution of patients screened for hepatitis c antibody.

	Number of Patient Screened	Male N (%)	Female N (%)
≤ 20 years	460	185 (40.2)	275 (59.8)
21-35 years	1343	415 (30.9)	928 (69.1)
36-50 years	774	350 (45.2)	424 (54.8)
≥ 51 years	782	459 (58.7)	323 (41.3)
<b>Total</b>	<b>3359</b>	<b>1409 (41.9)</b>	<b>1950 (58.1)</b>

**Table 3:** Distribution of reactive and Non-Reactive patients.

Age group (years)	≤ 20	21-35	36-50	≥ 51	Total
<b>Reactive N (%)</b>	12 (2.6)	30 (2.2)	25 (3.2)	23 (2.9)	90 (2.7)
<b>Non-Reactive N (%)</b>	448 (97.4)	1313 (97.8)	749 (96.8)	759 (97.1)	3269 (97.3)
<b>Number Tested</b>	460	1343	774	782	3359

**Table 4:** Gender distribution of reactive patients.

Age group (years)	≤ 20	21-35	36-50	≥ 51	Total
<b>Male N (%)</b>	04 (33.3)	16 (53.3)	12 (48.0)	12 (52.2)	44 (48.9)
<b>Female N (%)</b>	08 (66.7)	14 (46.7)	13 (52.0)	11 (47.8)	46 (51.1)
<b>Reactive Patients</b>	12	30	25	23	90

## DISCUSSION

Although, there is no known national survey report for HCV recorded for Nigeria, and studies were mostly restricted to a region or to a very specific population sub-groups, the Federal Ministry of Health gives a prevalence of 2.2% [10]. The method employed by the hospital to screened patients for HCV is not sensitive enough; however, this study shows a high prevalence rate of 2.7% among patients screened during the period under review [11]. This is higher than the overall prevalence rate recorded for Nigeria, thus, it further supports previous evidence that HCV is endemic in Nigeria. The difference in our report and the figure published by the Nigeria Ministry of Health could be accounted for by the fact that our study is based on a

sub population in a region of the country, and also, the report is relatively more recent compare to that of the Federal agency. The number of female screened for hepatitis C virus is more than male (female constitute 58.1% while male is 41.9%), the disparity could be the representation of both genders in the entire population.

The prevalence rate of 2.7% recorded in our study is lower than 14.0% and 6.2% reported for hospital patients by Nwokedi et al, and Halim et al. respectively [12,13]. Also, there is disparity between our value and other sub-groups in Nigeria, while it is lower when compare with some studies it higher than what is obtain some other studies [14-17]. The difference between our value and that of others could be due to the fact that the studies were taken in different locality and prevalence of hepatitis C virus infection varies widely from one location to another due to the prevailing unhealthy cultural or traditional practices in various localities that could further predispose the indigenes to HCV infection. It may also be that the rate at which hepatitis C virus epidemic develops varies from one area to another within the country, and the number of the subject studied can also influence the outcome of various study.

In our study we observed that 46 (51.1%) females and 44 (48.9%) males were positive to hepatitis C virus antibody. The slight increase in number of positive females may be credited to the fact that more females were screened in the hospital between January 2017 and November 2019. We also notice that the age group 36-50 years has the highest number of seropositive individuals in the study, this aligns with the previous report by Nwokedi et al and this could be because people within this age bracket engage in activities which further predispose them to HCV infection [12,13]. The lowest prevalence rate is within the age group 21-35years, our value disagrees with Jemilohun et al report for the same age group, and this may be due to the fact that Jemilohun et al studied essentially healthy university students while we studied patients of a teaching health facility [14].

## CONCLUSION

While an accurate prevalence rate of hepatitis C virus remains unachievable without systematized national survey in Nigeria, our study shows that Nigeria is still highly endemic with hepatitis C virus, and the country might probably be witnessing a rise in hepatitis C viral infection. There is a need to study the hepatitis C virus strains present in the country so as to ascertain if the present drug regimen is still effective against the strains, or if there are new strains in the country that is resistant to the current regimen. It is also essential to create massive public awareness concerning this deadly virus.

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