**THE INCIDENCE AND PREVALENCE OF HEPATITIS B AND C VIRUS AMONG OUTPATIENTS ATTENDING, SPECIALIST HOSPITAL, MARYAM ABACHA HOSPITAL AND WOMEN AND CHILD WELFARE CLINIC** .

**ABSTRACT**

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Hepatitis is an inflammation of the liver characterized by the existence of inflammatory cells in the tissue of the organ principally caused by viral infections. Most infection occurs with limited or no symptoms, but often leads to vomiting, jaundice, malaise, fatigue anorexia (low appetite) and abdominal pain. The aim of this study was to determining the incidence and prevalence of the Hepatitis B and C virus among outpatients attending Specialist Hospital, Maryam Abacha Women and Children Hospital, and Women and child welfare clinic in Sokoto metropolis, Nigeria. One hundred and Fifty (150) blood samples (Two milliliters) was collected from outpatients, fifty(50) from each hospital using a 2ml syringe and transferred immediately into a plain bottle bearing the label for the patient. The result showed that, out of the 150 blood screened for hepatitis B and C infections, 22 (14.68%) were positive for HBV infection while None of the tested positive for HCV infection. High prevalence of 10 (6.67%) was recorded for specialist hospital while maraiam abacha and wcwc had 7(4.67%) and 5(3.34%) respectively. the ABO blood group shows that O positive had of prevalence of 6(12.0%) when compared to the rest. High prevalence of 8 (16.0%), 5(10%) and 5(10%) was found within the age group of 21-30yrs across the three hospitals. The hematological parameters of positive sample revel that, the TWBC was slightly high with 7.5×109g/l for male and 13.5×109g/l) for female in specialist hospital, 13.4×109g/l and 13.5×109 g/l for females in Mariam Abacha hospital and Women and Child Welfare Clinic (WCWC) respectively . This study showed that sokoto is in the region with relatively high prevalence of HBV. Hepatitis B positive patients could be at risk of developing anaemia. Management and treatment could be better handled before the onset of symptoms associated with Hepatitis B infection. This study also showed that there was an association between ABO/Rh blood groups and HBV infection.

*Keywords: Hepatitis; B and C; prevalence; Outpatients.*

**INTRODUCTION**

Hepatitis is inflammation of the liver characterized by the existence of inflammatory cells in the tissue of the organ principally caused by viral infections (Robert *et al*, 2010). Most infection occurs with limited or no symptoms, but often leads to vomiting, jaundice, malaise, fatigue anorexia (low appetite) and abdominal pain. (Ryder and Beckingham, 2001). Hepatitis B is a serious blood borne infection of the liver caused by a virus called the Hepatitis B Virus (Sheyin *et al,* 2012). The infection of the liver by this Virus can be fatal and is transmitted primarily through contact with infected blood and blood products (Inyama *et al*, 2005) Other means of transmission include Injection drug use, needle stick injury while sexual and mother to child transmission occur but considered inefficient modes (Warren 2013). Prolong infection of the liver by the Hepatitis B Virus leads to its gradual deterioration and damage causing Hepatitis B disease with an increasing risk of failure, cirrhosis and hepatocellular carcinoma (Warren 2013, Robert *et al*, 2010). The Virus has been reported in some parts of the World including Nigeria such as: among HIV positive women attending a rehabilitation centre and University students co infected with HBV in Maiduguri both in Nigeria (James *et al*, 2014). Also, among the public in Makurdi Central, potential blood donors in Ibadan and Kano as well as pregnant women in Kaduna State, Nigeria (Dawurung *et al*, 2013). Hepatitis B virus was reported in Aliero Metropolis in Kebbi State. The results of this study shows that men appear to be more predisposed to the susceptibility of both hepatitis B virus as well as the hepatitis C virus. There appears to be a gradual but steady increase in the incidence rate of the infections year dependently for both HBV and that of HCV respectively. (Haruna and Attahiru 2018). The virus was also reported in among patient attending Specialist Hospital Sokoto according to this study, patients aged between 18-49 years (3.8%) has the highest hepatitis C virus antibody (Isa *et al.,*2014)

Therefore this research work is aimed at determining the incidence and prevalence of Hepatitis B and C virus among outpatients attending, Specialist Hospital, Maryam Abacha Hospital Sokoto and Women and child welfare clinic .

**MATERIALS AND METHODS**

**Study area**

The various studies will carried out at Usmanu Danfodiyo University Teaching Hospital which is located in Wammako Local Government , Specialist Hospital located in Sokoto North Local Government and Maryam Abacha Women and Children Hospital located in Sokoto South Local Government all within Sokoto Metropolis. Sokoto State is located in the extreme Northwest of Nigeria, near to the confluence of the Sokoto River and the Rima River. The State is in the dry Sahel, surrounded by sandy savannah and isolated hills, with an annual average temperature of 28.3°c (82.9°F). Sokoto is, on the whole, a very hot area. However, maximum daytime temperatures are for most of the year generally under 400c (104.00F) and the dryness makes the heat bearable. The warmest months are February to April when day time temperature can exceed 450c (113.0 0F). The rainy season is from June to October during which shower are a daily occurrence. Report from the 2007 National Population Commission indicated that the state had a population of 3.6 million (NPC 2007). The residents are mainly Hausa/Fulani and other non-indigenous ethnic groups like Yoruba, Igbo, and Zabarma tribe from neighboring Niger Republic. The main occupation of the people is trading, farming with few numbers of civil servants.

**Study Population**

The study population will be made up of men and women who are visiting the hospital and between the ages of 18 years and above.

**Sample size**

The sample size of this study will be determined with a previous prevalence of 5.33% (Waje *et al*., 2006) at 95% confidence interval using the Kish Leslie formula.

Where N is the estimated sample size and Z is the standard normal deviation usually set at 1.96, which correspond to the 95% confidence interval. P is the prevalence of HCV is derived from previous a study which is 5.33%. Q is the complementary equivalent to one minus P; that is 1-0.0533 equal to 0.9467. D is the degree of absolute precision. A relative precision of 5 % (0.05) was used to achieve N in estimate of HCV prevalence at 95% (Kish 1965).

**Ethical Approval**

Ethical approval will be obtained from Sokoto State Ministry of Health Ethical committee to visit each of these hospitals. Outpatients attending the hospitals will be approached and the rationale of the study explained to them. Signed informed consent form will be obtained from willing participants. Their socio-demographic data, knowledge about HBV and HCV infections and factors associated with it will be obtained through structured questionnaire.

**Inclusion and exclusion criteria**

Only outpatients who gave consent to the form, questionnaire properly administered based on the lay down parameters and blood sample collected will be included in this study, while those who could not provide this information’s will be excluded from the study

**Questionnaire Administration.**

The participant’s consent will be sought using a consent form and the questionnaire will be administered based on the following parameters:

1. Personal biodata such as name, gender, age, occupation, educational background, and marital status, previous knowledge of the virus and previous vaccination on hepatitis C (achieved with objective number 5)
2. History of intravenous drug use (achieved with objective number 3)
3. History of HIV and sexually transmitted infections (achieved with objective number 3)
4. History of blood transfusion (achieved with objective number 3)

**Sample Collection**

Fifty (50) blood samples will be collected from each hospita Two millilitres of blood will be collected by the medical doctor intravenously from each consented outpatient from the respective hospitals using a 2ml syringe and transferred immediately into a plain bottle bearing the label for the patient. The samples will then be taken to the Department of Microbiology laboratory of Usman Danfodio University, Sokoto for processing.

**Screening the samples for HBV and HCV**

The Blood samples collected will be evaluated for the presence and qualitative determination of HBV and HCV surface antigens, followed by immersion of the strip in to the plasma for 10 to 15 seconds. The maximum line on the strip would be observed in order to avoid exceeding the line; the strip will be placed on a non-absorbent surface. The strip will then be set for fifteen (15) minutes, awaiting the red line to appear or not. Two distinct red lines, one on the control (C) region while other on the test (T) region. The intensity of the red color on the test line varies depending on the concentration of the HBsAg and HCV in the specimen. Therefore shade of red in the test (T) region will be considered positive while one red line on the control (C) region and no shade of red color on the test (T) region it as negative. (Haruna and Attahiru 2018).

**Method of Determining Blood Group**

This procedure was discovered by Karl Landsteiner ( Maton *et al.* , 1993). A clean and dry glass slide is divided into two sections with a glass marking pencil. The section are labelled as anti-A and anti-B to identify the antisera. One drop of anti-A serum and anti-B serum will be placed in the centre of the corresponding section of the slide. The antiserum will be taken first to ensure that no reagent is missed. One drop of the blood sample to be tested will be added to each drop of antiserum. The antiserum and blood will be mixed by using a separate stick or a separate corner of a slide for each section over an area about 1 inch in diameter. The side will be tilted backward and forward and examined for agglutination after exactly two minutes.

**Positive (+)** result: Little clumps of red cells are seen floating in a clear liquid.

**Negative (-)** result: Red cells are floating homogeneously in a uniform suspension

**Anti-A Anti-B Blood Group**

+ - A

* + B

+ + AB

* - O

(Dayyal 2017).

**Hematological and ESR examination**

**Hematological**

Bloodsamples (fresh) of all anti- HCV antibody positive samples will be subjected to hematological analysis. Cell count and differentials counts will be measured using sysmex XS800i automatic analyzer ( Sysmex corporation 2006). Blood sample will be taken from the hematology mixer. The cap of tube will be removed and the prob of the analyzer inserted into the tube to aspirate about 10µl of blood. Result will be printed out after 3minutes.

**Erythrocyte Sedimentation Rate**

ESR 2ml of whole blood will be drawn into a Westergren –Katz tube .the tube will then be placed in the rack in vertical position for I hour at room temperature. The distance of fall of erythrocyte will be read and recorded in mm/hr (normal range; less tan 20mm/h and abnormal above 20mm/h) (shelate *et al*., 2008). The remaining blood will be centrifuged at 3RPM for 5 minutes to separate plasma which will be aliquoted at 2ml in two cryovials and stored at -8°C for viral load measurement

**Data Analysis**

Data obtained from the questionnaire and results of the laboratory analysis will be analysed. Prevalence will be calculated using the formula: (Number infected/ Number Examined) ×100. Chi-square test will be employed to test for association between the demographic variables and the prevalence of viral infection obtained at 95% confidence interval and a p-value ≤ 0.05 will be considered significant.

**RESULTS**

The result of these research “incidence and prevalence of hepatitis B and C virus among out patience in selected hospitals within Sokoto metropolis” are hereby presented. Out of the 150 outpatients screened for hepatitis B and C infections, 22 (14.68%) were positive for HBV infection while None of the outpatients tested positive for HCV infection. Prevalence of HBV and HCV among outpatients attending the selected hospitals, Specialist Hospital has the highest prevalence rate of 10 (6.67%) followed by Maryam Abacha Women and Children Hospital 7 (4.67%) and Women and Child Welfare Clinic with 5 (3.34%). (Table 4.1)

The prevalence of hepatitis (HBV and HCV) among outpatients attending the selected Hospital in relation to blood group A,B, O and RhD showed that blood group O positive had a high prevalence of 6(12.0%) followed by A positive 3(6.0%), B positive 1(2.0%) and O negative 0(0.0%) from specialist hospital with a total of 10(20.0%) prevalence, O positive 4 (8.0%), A positive 2(4.0%), B positive 1(2.0%) and O negative 0(0.0%) from Maryam Abacha hospital with a total of 7(14.0%) and a prevalence of 3 (6.0%) for O positive , 2(4.0%) for A positive and 0(0.0%) for B positive from women and child welfare clinic with a total of 5(10.0%).(Table 4.2)

The socio-demographic parameters that is associated with HBV and HCV among outpatient attending specialist hospital reveal that high prevalence of 8 (16.0%) was found within the age group of 21-30 year. Male recorded prevalence of 6 (12.0%) when compared to the female. On the basis of their marital status, single women recorded 7 (14.0%) when compared to married and divorced women. Under education, those with primary education has a high prevalence of 7 (14.0%) followed by those with secondary education with 3(6.0%). The prevalence of HBV and HCV among outpatient group of unemployed was 6 (12.00%), similarly the prevalence of HBV and HCV based on location showed that the rural dwellers were more infected with a prevalence of 8 (16.0%). On the bases of religion, a prevalence of 9 (18.0%) was recorded for Islam when compared to the Christianity. (Table 4.3). The socio-demographic parameters that may be associated with HBV and HCV among outpatient attending Mariam Abacha hospital reveal that high prevalence of 5 (10.0%) was found within the age group of 21-30 year, the female has a of 7 (14.00%) , no male took part because it’s a female hospital. On the basis of their marital status, single women recorded prevalence of 3 (6.0 %) when compared to married women. Under education, those with primary education has a high prevalence of 5 (10.0 %) followed by those with secondary education 2(4.0%). The prevalence rate of house wives was 7 (14.0%), similarly the prevalence of HBV and HCV based on location showed that the rural dwellers were more infected with a prevalence of 6 (12.0%). On the bases of religion, a prevalence of 7 (14.00%) was recorded for Islam. (Table 4.4) The socio-demographic parameters that may be associated with HBV and HCV among outpatients attending WCWC reveal that high prevalence of 5 (10.0%) was found within the age group of 21-30 year, the female has a prevalence of 7(14.00%), no male took part because it’s a female hospital. On the basis of their marital status, single women recorded a prevalence of 1 (2.0 %) when compared to married women with 4 (8.0%). Under education, primary education has a high prevalence of 4 (8.0 %) followed by those with secondary education with 2(4.0%). The prevalence of house wife was 4 (8.0 %), similarly the prevalence of HBV and HCV based on location showed that the rural dwellers were more infected with a prevalence of 5 (10.0%). On the bases of religion, a prevalence of 5(10.00%) was recorded for Islam. F (Table 4.5). The haematological parameters of positive samples reveal slight decrease in PCV of 37.2% for male and 33.4% for female in Specialist Hospital, 33.1% in Maryam Abacha Hospital and 33.4% in Women and Child Welfare Clinic when compared to their normal range, there was also decrease in haemoglobin of 12.4g/dl for male and 10.1g/dl for female in Specialist Hospital, 10.4g/dl in Mariam Abacha and 10.2g/dl in Women and Child Welfare Clinic (WCWC) when compared to their range while the ESR was slightly high 20mm/hr for male and 30mm/hr for female in Specialist Hospital , 35mm/hr for Mariam Abacha Hospital and 30mm/hr for women and child welfare clinic (WCWC). The TWBC was slightly high with 7.5×109g/l for male and 13.5×109g/l) in specialist hospital, 13.4×109g/l and 13.5×109 g/l for Mariam Abacha and Women and Child Welfare Clinic (WCWC) respectively when compared to the normal range (Table 4.6).

**DISCUSSION**

Hepatitis B and C virus infections are among the most prevalent infectious diseases in humans worldwide. Both infections are associated with a broad range of clinical presentations ranging from acute or fulminant hepatitis to chronic infection that may be clinically asymptomatic or may progress to chronic hepatitis and liver cirrhosis. HBV infection has several modes of transmission of which prenatal transmission and transfusion of infected blood and blood products are most important. Other important modes include sexual transmission, tattooing, needle stick exposure etc. (Sebastion *et al*., 1990)**.** Screening asymptomatic people is an important instrument in disease detection, prompt diagnosis and intervention, particularly at an early stage of the disease. This may improve the health outcome as well as better understanding of the transmission pattern of the disease (Isselbacher *et al*., 1991). In Asia and sub-Saharan Africa, hepatitis infection is endemic and thought to be the main etiological factor in over 75% of the chronic liver disease (Dawaki SS, Kawo 2006). Hepatitis C virus is a blood born disease through direct contact with infectious blood (transfusion) or indirect via contaminated material (unsafe injections and medical procedure). Hepatitis C acute infection leads to chronic carriage in 70 to 80% countries with the risk of development of complications such as cirrhosis and cancer. Complications of hepatitis C occur mostly in patients who developed cirrhosis. The risk for decompensation is estimated to be close to 5% per year in cirrhotic.( (Poynard *et a*l., 1997) Once decompensation has developed the 5-year survival rate is roughly 50%. Studies conducted at different hospitals within Sokoto state and on outpatients regarding the prevalence of hepatitis B and C viruses and their associated risk factors have reported different findings. Out of the 150 outpatients screened for hepatitis B and C infections, 22(14.67%) were positive, this lies within the established standard that West African countries have moderate to high hepatitis B endemicity as reported elsewhere (Miren *et al*., 1999) . High prevalence of 12% HBV was reported among a similar study population in Taiwan and 10% in Hong Kong (Kong *et al*,. 1997). In Ilorin, prevalence rate of 5.7% was reported in mothers and 10% in their preschool age children (Agbede *et al*., 2007). Epidemiological studies have explored the relationship between blood group and HBV infection, however, The prevalence of HBV in relation to ABO blood group among the outpatients reveled that O+ positive individuals has high prevalence for HBV across the three hospitals. 6(12.0%) for Specialist hospital, 4(8.0%) for Mariam abacha and 3(6.0%) for Women and child welfare clinic. The results was in agreement with ( Lao *et al* .,2014) who found that HBV prevalence was lower in blood group B and AB , but higher in blood group O (10.2%). (Liu *et al*., 2018) suggested that blood group O was associated with increased HBV infection. People living in higher endemic areas are at higher risk of exposure to HBV infection than those living in lower endemic areas, which might be the reason why the association between the ABO blood group and HBV infection was only found in higher endemic areas but not in lower endemic areas (Wenzhan *et al*.,2020) The demographic prevalence of hepatitis B virus across the three selected hospital was high among 21–30 age-groups than others. This correlates with the peak age of highest sexual activity in the society, hence supporting the role of sexual intercourse in the transmission of hepatitis B virus. The result also agrees with the report of Aganga (Aganga *et al*., 1999) that in populations in which hepatitis B virus is relatively common; the majority of infections and peak prevalence of HBV as well as of specific antibody were in the age –group 25–29 and 30–34 years. There was no significant difference between age-groups as they relate to HBV prevalence (p = 0.171), therefore establishing the fact that HBV is common in all age-groups of life. The prevalence of HBV was high among male 6(12.0%) than in female in specialist hospital while other hospital only female were screened. Most of the studies have reported higher prevalence among males which are in agreement with our study. Smita Sood and Shirish Malvankar have reported the prevalence to be 1.04% and 0.58% respectively for males and females (Smita and Shirish 2010). Dutta has found it to be 35.3% in males and 19.3% in females (Dutta *et al*., 1994) . Singh have noticed prevalence to be 0.65 and 0.25 % respectively in males and female subjects (Singh *et al*., 2009). It is hypothesised that females probably clear the HBV more efficiently in  
comparison to males (Qamer *et al*., 2004). The higher prevalence was noticed among rural subjects than their urban counterparts which is in agreement with ( Sayed *et al*., 2013) who reported 1.865% for rural and urban 1.44% who also hypothesize that this may be due to better awareness of HBV risk factors in the city dwellers. The Socioeconomic status also plays an important role in the transmission of HBV infection. In this study, educational levels were inversely related to the prevalence of HBV. This might be because people of lower socioeconomic status are more likely to have an unhealthy lifestyle and lack access to health care, and be less well informed about the prevention of diseases (Kawachi 1998). Further, according to our findings, those study participants who are self employed“ as their occupational status were less likely to be infected by the hepatitis B virus compared to unemployed and house wife’s participating in the study. This may be due to the self employed study participants having good awareness about the transmission and prevention route of the disease compared to the unemployed and house wife participating in the study. The most probable reason for good awareness of the transmission and prevention method of the disease among self employed participants was their higher educational level compared to the rest participants. This finding is in line with the study from the southern part of Ethiopia (Tanga *et al*., 2019). In the study by Zali, marital status was also a key indicator of prevalence (Zali *et al*., 1996).In this study, the prevalence of HBV was higher in single individuals. There was a significant relationship between HBV prevalence and marital status (*P* = 0.023). In the study by Abdullahi , the rate of HBV was higher in singles than those who had married at least once (Abdollahi *et al*., 2006). In many studies, marriage and heterosexual relationships are considered risk factors for HBV (Alter, 1990). Such differences are probably due to cultural differences in each community. In a study by McQuillan *et al*. in the US, the HBV was higher in widows than others (Boag, 1991).

Impairment of immune response in hepatitis virus infected patients can affect the clinical, serological and hematological outcome of the patient as the severity of the viral disease depends mainly on the immune system’s ability to attack infected hepatocytes. The incidence of HBV and HCV infection is probably related to both immunosuppressant and frequent transfusions of blood and blood products which were inadequately screened (Dienstag 2009). There was a decrease in the PCV and Hb, which may be due to malnutrition, infections, etc. Similar findings have been documented (Poulsen *et al*., 2010) who reported that HBV positive patients have also shown reduced PCV and Hb (Eze *et al*., 2009). An increase in ESR was observed in the HBV patients with a marked variation between the negative group and test group. Though ESR is a non-specific diagnostic test, such increase is abnormal considering the reference range of ESR in healthy subjects (Cheesbrough, 1998).

**Conclusion and recommendation**

It is clear from this study that sokoto is in the region with relatively high prevalence of HBV. Hepatitis B positive patients could be at risk of developing anaemia. Management and treatment  
could be better handled before the onset of symptoms associated with Hepatitis B infection  
hence early diagnosis is advocated It is important to note that infection by HBV early in life underscores the potential of adding to the burden of viral hepatitis and its attending complication of hepatocellular carcinoma later in life. This study also showed that there was an association between ABO/Rh blood groups and HBV infection. Although the prevalence of HBV is low in this study, it is recommended that the current practice of routine screening should be adopted and be sustained in our centre because using risk factor assessment for screening may not detect all those who have the virus, It may be necessary to do viral DNA assay for those who are positive for HBV in order to truly detect those who have active viral replication and are at increased risk of mother-to-child transmission of the virus since a few HBV-negative patients may still have active viral replication. It is recommended that, where resources are scarce, all infants should be vaccinated with HBV vaccine without delay irrespective of the maternal HBV status. Blood group O+ were at higher risk of HBV infection than other blood group subjects in higher endemic areas, that means more measures should be taken to ensure blood safety of the ‘universal’ blood group O positive population in high endemic areas.

**Table 4.1 Shows the Prevalence of HBV and HCV in outpatient from the three selected Hospitals in Sokoto**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | Number examined | HBV Positive | HBV prevalence (%) | HCV positive | HCV prevalence (%) |
| MAH | 50 | 7 | 4.67 | 0.00 | 0.00 |
| SH | 50 | 10 | 6.67 | 0.00 | 0.00 |
| WCWC | 50 | 5 | 3.34 | 0.00 | 0.00 |
|  |  |  |  |  |  |
| Total | 150 | 22 | 14.68 | 0.00 | 0.00 |

*MAH (Mariam Abacha Hospital) SHS (Specialist Hospital Sokoto), WCWC (Women and Child Welfare Clinic )*

**Table 4.2 Shows the Prevalence of HBV and HCV Relation to Blood Group of Outpatients attending Wcwc**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Blood Group |  | | SH Frequency | | Hbv PREV (%) | | Hvc(%) | Blood group | |  | MAH Frequency | Hbv prev(%) | Hvc(%) | Blood group |  | Wcwc Frequency | Hbv Prev (%) | Hvc(%) |
| O RhD+ |  | | 23 | | 6(12.0) | | 0(0.0) | O RhD+ | |  | 25 | 4(8.0) | 0(0.0) | O RhD+ |  | 26 | 3(6.0) | 0(0.0) |
| A RhD+ |  | | 14 | | 3(6.0) | | 0(0.0) | A RhD+ | |  | 11 | 2(4.0) | 0(0.0) | A RhD+ |  | 12 | 2(4.0) | 0(0.0) |
| B RhD+ |  | | 11 | | 1(2.0) | | 0(0.0) | B RhD+ | |  | 14 | 1(2.0) | 0(0.0) | B RhD+ |  | 12 | 0(0.0) | 0(0.0) |
| O RhD- |  | | 2 | | 0(0.0) | | 0(0.0) | O RhD- | |  | Nil | 0(0.0) | 0(0.0) | O RhD- |  | Nil | 0(0.0) | 0(0.0) |
|  |  | |  | |  | |  |  | |  |  |  |  |  |  |  |  |  |
|  |  | |  | |  | |  |  | |  |  |  |  |  |  |  |  |  |
| TOTAL |  | 50 | | 10(20) | | 0(0.0) | | TOTAL |  | | 50 | 7(14.0) | 0(0.0) | Total |  | 50 | 5(10.0) | 0(0.0) |

SH (Specialist Hospital Sokoto) MAH (Mariam Abacha Hospital), WCWC (Women and Child Welfare Clinic )

**Table 4.3 The Prevalence of HBV and HCV relation to demographic parameters of outpatients attending Specialist Hospital**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Socio-demographic  parameters | Number examined | HBV Positive | HBV prevalence (%) | HCV positive | HCV prevalence (%) |
| Age |  |  |  |  |  |
| <20 | 3 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 – 30 | 28 | 8 | 16.00 | 0.00 | 0.00 |
| 31 – 40 | 10 | 2 | 4.00 | 0.00 | 0.00 |
| 41 – 50 | 5 | 0.00 | 0.00 | 0.00 | 0.00 |
| >50 | 4 | 0.00 | 0.00 | 0.00 | 0.00 |
| SEX |  |  |  |  |  |
| Male | 15 | 6 | 12.00 | 0.00 | 0.00 |
| Female | 35 | 4 | 8.00 | 0.00 | 0.00 |
| Marital Status |  |  |  |  |  |
| Single | 27 | 7 | 14.0 | 0.00 | 0.00 |
| Married | 13 | 2 | 4.00 | 0.00 | 0.00 |
| Divorced | 10 | 1 | 2.00 | 0.00 | 0.00 |
| Widowed | NIL | NIL | NIL | NIL | NIL |
| Educational Level |  |  |  |  |  |
| No education | NIL | NIL | NIL | NIL | NIL |
| Primary Education | 15 | 7 | 14.00 | 0.00 | 0.00 |
| Secondary education | 30 | 3 | 6.00 | 0.00 | 0.00 |
| Tertiary education | 5 | 0.00 | NIL | NIL | NIL |
| Occupation |  |  |  |  |  |
| House wife | 25 | 2 | 4.00 | 0.00 | 0.00 |
| Self employed | 15 | 2 | 4.00 | 0.00 | 0.00 |
| Unemployed | 10 | 6 | 12.0 | 0.00 | 0.00 |
| Location |  |  |  |  |  |
| Rural | 35 | 8 | 16.0 | 0.00 | 0.00 |
| Urban | 15 | 2 | 4.00 | 0.00 | 0.00 |
| Religion |  |  |  |  |  |
| Islam | 38 | 9 | 18.0 | 0.00 | 0.00 |
| Christianity | 12 | 1 | 2.00 | 0.00 | 0.00 |

**Table 4.4 Shows the Prevalence of HBV and HCV relation to demographic of outpatient attending Maryam Abacha Hospital**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Socio-demographic  parameters | Number examined | HBV Positive | HBV prevalence (%) | HCV positive | HCV prevalence (%) |
| Age |  |  |  |  |  |
| <20 | 2 | 0.00 | Nil | Nil | Nil |
| 21 – 30 | 20 | 5 | 10.0 | 0.00 | 0.00 |
| 31 – 40 | 15 | 2 | 4.00 | 0.00 | 0.00 |
| 41 – 50 | 10 | 0.00 | 0.00 | 0.00 | 0.00 |
| >50 | 3 | 0.00 | 0.00 | 0.00 | 0.00 |
| SEX |  |  |  |  |  |
| Male | Nil | Nil | Nil | Nil | Nil |
| Female | 50 | 7 | 14.0 | 0.00 | 0.00 |
| Marital Status |  |  |  |  |  |
| Single | 10 | 3 | 6.00 | 0.00 | 0.00 |
| Married | 40 | 4 | 8.00 | 0.00 | 0.00 |
| Divorced | Nil | Nil | Nil | Nil | Nil |
| Widowed | NIL | NIL | NIL | NIL | NIL |
| Educational Level |  |  |  |  |  |
| No education | NIL | NIL | NIL | NIL | NIL |
| Primary Education | 30 | 5 | 10.0 | 0.00 | 0.00 |
| Secondary education | 20 | 2 | 4.00 | 0.00 | 0.00 |
| Tertiary education | Nil | NIL | NIL | NIL | NIL |
| Occupation |  |  |  |  |  |
| House wife | 50 | 7 | 14.0 | 0.00 | 0.00 |
| Self employed | Nil | Nil | Nil | Nil | Nil |
| Unemployed | Nil | Nil | Nil | Nil | Nil |
| Location |  |  |  |  |  |
| Rural | 40 | 6 | 12.0 | 0.00 | 0.00 |
| Urban | 10 | 1 | 2.00 | 0.00 | 0.00 |
| Religion |  |  |  |  |  |
| Islam | 50 | 7 | 14.0 | 0.00 | 0.00 |
| Christianity | Nil | Nil | 0.00 | 0.00 | 0.00 |

**Table 4.5 Shows the Prevalence of HBV and HCV relation to demographic of outpatients attending WCWC**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Socio-demographic  parameters | Number examined | HBV Positive | HBV prevalence (%) | HCV positive | HCV prevalence (%) |
| Age |  |  |  |  |  |
| <20 | 5 | 0.00 | Nil | Nil | Nil |
| 21 – 30 | 40 | 5 | 10.0 | 0.00 | 0.00 |
| 31 – 40 | 5 | 0.00 | 0.00 | NIL | NIL |
| 41 – 50 | NIL | Nil | Nil | Nil | Nil |
| >50 | NIL | Nil | NIL | NIL | NIL |
| SEX |  |  |  |  |  |
| Male | Nil | Nil | Nil | Nil | Nil |
| Female | 50 | 5 | 10.00 | 0.00 | 0.00 |
| Marital Status |  |  |  |  |  |
| Single | 9 | 1 | 2.00 | 0.00 | 0.00 |
| Married | 41 | 4 | 8.00 | 0.00 | 0.00 |
| Divorced | Nil | Nil | Nil | Nil | Nil |
| Widowed | NIL | NIL | NIL | NIL | NIL |
| Educational Level |  |  |  |  |  |
| No education | NIL | NIL | NIL | NIL | NIL |
| Primary Education | 43 | 4 | 8.00 | 0.00 | 0.00 |
| Secondary education | 7 | 1 | 2.00 | 0.00 | 0.00 |
| Tertiary education | Nil | NIL | NIL | NIL | NIL |
| Occupation |  |  |  |  |  |
| House wife | 39 | 4 | 8.00 | 0.00 | 0.00 |
| Self employed | 11 | 1 | 2.00 | Nil | Nil |
| Unemployed | Nil | Nil | Nil | Nil | Nil |
| Location |  |  |  |  |  |
| Rural | 48 | 5 | 10.0 | 0.00 | 0.00 |
| Urban | 2 | 0.00 | 0.00 | 0.00 | 0.00 |
| Religion |  |  |  |  |  |
| Islam | 50 | 5 | 10.00 | 0.00 | 0.00 |
| Christianity | Nil | Nil | 0.00 | 0.00 | 0.00 |

**Table 4.6 Hematological Parameters of Positive samples for hepatitis B patient attending Specialist Hospital, Maryam Abacha Hospital and Women and Child Welfare Clinic.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Blood Parameters | Blood Test Parameters/ Male And Female Response (+)  Specialist Hospital Maraim Abacha Wcwc  MALE Female Female Female | | | |
|  |  |  |  |  |
| PCV | 37.2 | 33.4 | 33.1 | 33.4 |
| HB(g/dl) | 12.4 | 10.1 | 10.4 | 10.2 |
| ESR(mm/hr) | 20 | 30 | 35 | 30 |
| TWB(×10g/l) | 7.5 | 13.5 | 13.4 | 13.5 |

PCV-Packed Cell Volume, Hb-Haemoglobin concentration, ESR-Erythrocyte Sedimentation rate, TWBC-Total white blood cell *coun*

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