



ORIGINAL ARTICLE

Prevalence of Transmissible Infections Among Breast Cancer Patients in Calabar, Nigeria

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Submitted: 20-02-2023

Accepted: 20-03-2023

Published: 31-03-2023

Abstract

Introduction: Transmissible infections including those of human immunodeficiency virus, hepatitis B virus, hepatitis C virus and syphilis remain public health challenges. The co-existence of these infections with other disease conditions of medical importance can be quite challenging, particularly if there is no prior knowledge of the infection status. Apart from the direct impact on the affected patient, there is also the concern of safety for care givers as well as the risk of nosocomial transmission to other patients. This study focused on pre-operative screening of breast cancer patients to determine the prevalence of human immunodeficiency virus, hepatitis B virus, hepatitis C virus and syphilis infections.

Materials and Methods: This study was conducted among breast cancer patients in Calabar, Cross River State of Nigeria. A structured questionnaire was administered by two trained interviewers to obtain biodata and socio-demographic characteristics. Screening for antibodies to HIV, HBV, HCV and Syphilis were performed by standard serological techniques.

Results: General prevalence for all the screened infections was 18%. Distribution of specific infections revealed hepatitis B viral infection to be highest (8%), followed by HIV infection (6%). Hepatitis C virus infection and syphilis were the least with 2% rates each. Among participants living with these infections, 33% had previous knowledge of their status, while the remaining 67% had no prior knowledge.

Conclusion: Hepatitis B virus had the highest prevalence while the lowest were HCV and syphilis. Greater percentage of infected subjects were not aware of their status prior to the pre-operative screening.

Key words: Breast cancer, transmissible infections, prevalence

Introduction

Transmissible infections including those of human immunodeficiency virus, hepatitis B virus, hepatitis C virus and syphilis remain public health challenges^{1,2}. However, emerging pandemics have taken over global health attention, thus relegating some of these infections to sub-regional concerns. Declining awareness campaigns and poor health-seeking behaviour have not also helped to reverse the doldrums. There persists a level of undetected infections occurring in our local population despite the progress made so far. A previous study in the same geographical axis as the present study reported that as high as 63% of transmissible infections among pregnant women occurs undetected³. The researchers attributed this finding to inadequate antenatal care coverage. It has also been previously reported that, for HIV infection in particular, detection is mostly occasioned by mandatory screening for some medical care such antenatal care and blood donation screening as against individual inquiry for mere knowledge of status^{4,5}.

Factors such as low educational level and income together with dwindling funding of campaigns and free voluntary testing have been observed to drive poor health-seeking behaviour and persistence of transmissible infections within local populations⁶⁻⁸. Unfortunately, undetected infections can limit the expected progress towards eradication by increasing transmission risks. The infected persons with no knowledge of status also suffer from rapid health deterioration in the absence of timely medical intervention³. Moreover, the co-existence of these infections with other disease conditions of medical importance can be quite challenging, particularly if there is no prior knowledge of the infection status. Apart from the direct impact on the affected patient, there is also the concern of safety for care givers as well as the risk of nosocomial transmission to other

patients^{9,10}. It is for these reasons that pre-surgical screening for transmissible infection is ensured for better patient management and adequate safety precautions. This study focused on determining the prevalence of human immunodeficiency virus, hepatitis B virus, hepatitis C virus and syphilis infections among breast cancer patients during pre-operative assessment.

Materials and Methods

This cross-sectional descriptive study enrolled 50 breast cancer patients going for surgical operation at University of Calabar Teaching Hospital, Calabar. Ethical approval was received from hospital's Ethics and Health Research Committee, while informed consent was obtained from each enrolled subject.

A structured questionnaire was administered by three trained interviewers to obtain biodata and socio-demographic characteristics. Each subject's serum was screened for the presence of HIV antibodies using Alere Determine (Abbott Laboratories, Tokyo, Japan) and Uni-Gold (Trinity Biotech, Ireland). Antibodies to HBV and HCV and V D R L were detected using immunochromatographic methods (Clinotech Diagnostics, Richmond, Canada). Data processing was carried out using SPSS version 22.0. Results are presented as numbers and percentages.

Results

The participants of this study were all adult female with the highest participation from age 41 years and above. They were mostly married (86%) and had attained at least secondary school level of education (Table 1). Single infection of any one of the four screened infections (HIV, HBV, HCV and Syphilis infections) was observed to be 16%, while co-infection (HIV and HBV only) was 2%. Thus, general prevalence for all the screened

infections was 18% as shown in Figure 1.

Distribution of specific infections revealed hepatitis B viral infection to be highest (8%), followed by HIV infection (6%). Hepatitis C virus infection and syphilis were the least with 2% rates each (Figure 2). Among

participants living with these infections, 33% had previous knowledge of their status, while the remaining 67% had no prior knowledge (Figure 3).

Table 1: Characteristics observed among all study participants

Variables	Number (50)	Percentage (100)
Age range		
≤40 years	16	32
>40 years	34	68
Marital status		
Married	43	86
Single	7	14
Highest Level of Education		
Secondary	29	58
Tertiary	21	42

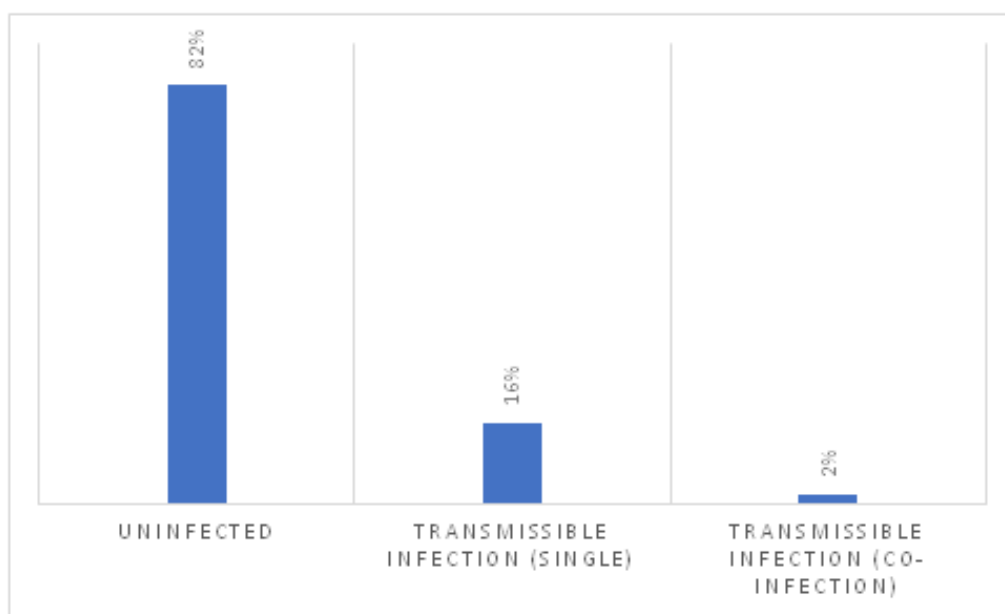


Fig 1. Prevalence of Transmissible Infections

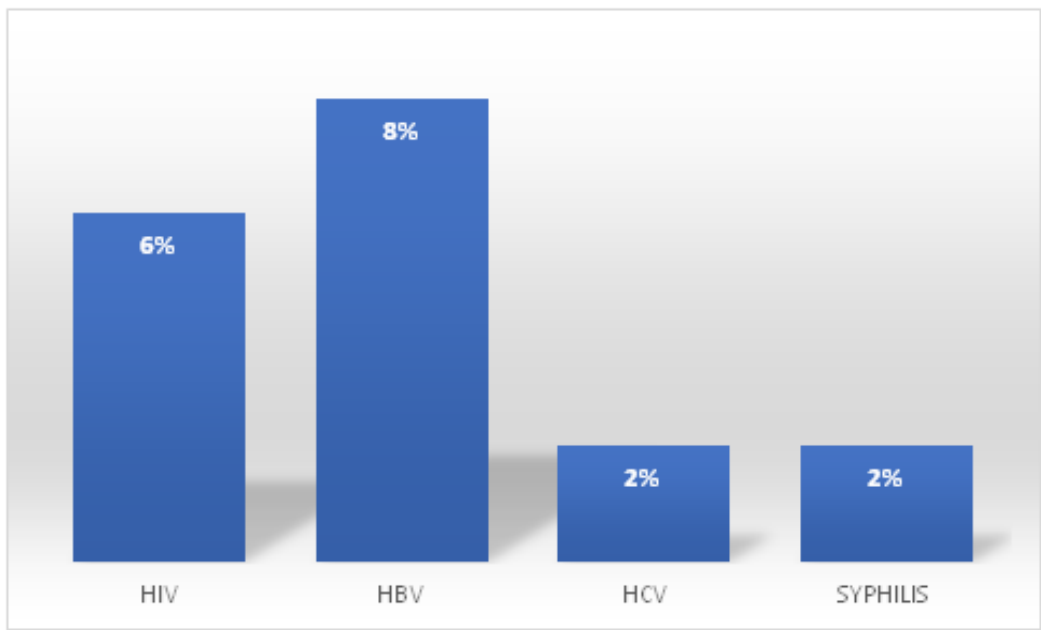


Fig 2. Distribution of infection types

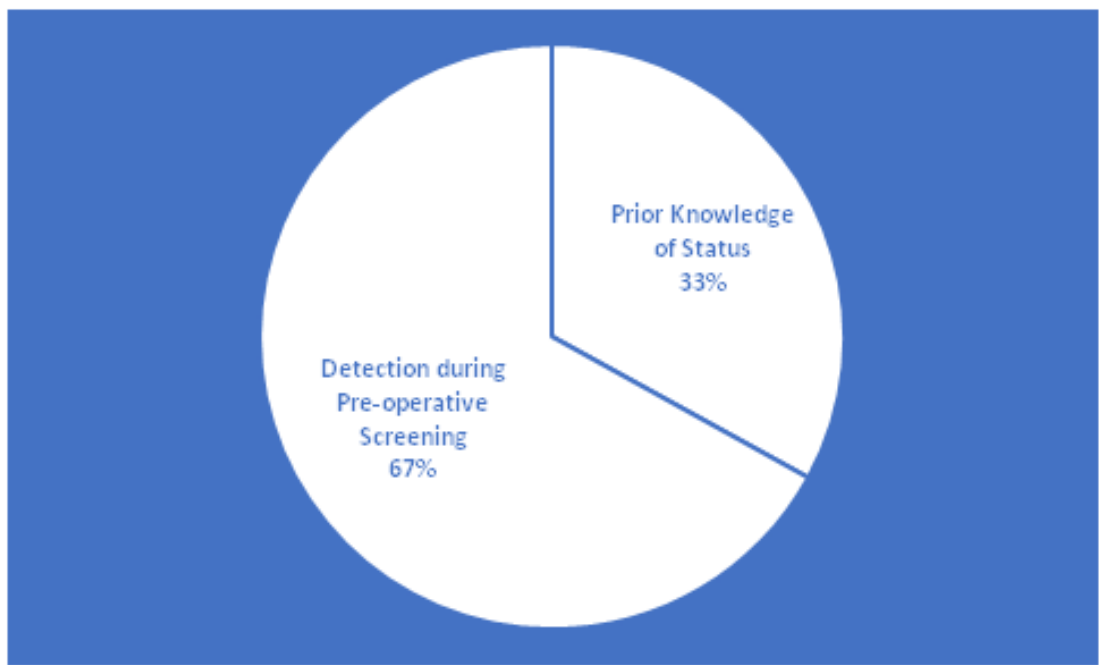


Fig 3. Prior knowledge of status among persons living with transmissible infections

Discussion

This study on prevalence of transmissible infections was conducted among breast cancer patients undergoing pre-operative assessment for the surgical removal of malignant breast tumour. The participants were all adult female with the highest participation from age 41 years and above. They were mostly married (86%) and had attained at least secondary school level of education. Among these enrolled subjects, 18% had at least one of the screened transmissible infections. Only one person had both infections of hepatitis B virus and hepatitis C virus making co-infection rate to be 2%. For the individual infections, HBV had the highest prevalence of 8% followed by HIV at 6%, while 2% each was recorded for both HCV and syphilis. Occurrence of these infections and breast cancer does not necessarily speak to predisposition as breast cancer is not among the malignancies that define their disease progression neither are breast cancer patients reported to be prone to these infections¹¹⁻¹⁵. The relevance of these finding, however, is in the area of medical preparedness towards effective management of co-morbidity as well as precautionary measures against possible transmission during the invasive procedures of surgery. Nosocomial transmission of transmissible infections has been reported previously^{9,10}.

Considering those participants living with transmissible infections, two-third of them were not aware of their status prior to the pre-operative screening; implying that these infections would have remained undetected but for the exercise. This observation is similar to the 63% lack of status awareness earlier reported among pregnant women in neighboring Akwa Ibom State³. Late reporting for medical care remains a major challenge in tackling several health conditions affecting women within the study locality as observed in previous studies¹⁶⁻¹⁸. Sustainability of campaigns and intervention programmes are needed for consolidation of the gains made so far. The unabating presence of these infections has the potential of sustaining transmission and increasing healthcare burden.

Conclusion

Hepatitis B virus was observed to be the most prevalent transmissible infection among participating breast cancer patients, while Hepatitis C virus and Syphilis were the least. Greater percentage of infected subjects were not aware of their status prior to the pre-operative screening.

Conflict of Interest: The authors declare no conflict of interest.

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How to cite this paper: Udosen JE, Akwiwu EC, Felix U-A, Akpotuzor DU, Akpotuzor JO. Prevalence of Transmissible Infections Among Breast Cancer Patients in Calabar,

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