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Outcome of retroviral screening among patients undergoing ear, nose, throat, head and neck surgery, at the University of Benin Teaching Hospital, Nigeria

Paul R. O. C. Adobamen*, Johnson Ediale

Department of Ear Nose and Throat, University of Benin Teaching Hospital, Benin City, Nigeria

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*Correspondence:

Dr. Paul R. O. C. Adobamen,

E-mail: brotherpaulchima@yahoo.com

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ABSTRACT

Background: In Nigeria it has been estimated that 3.6% of the population are living with HIV/AIDS. Patients with different social, family, occupational and epidemiological background present for ear, nose, throat, head and neck (ENTH&N) surgeries in our hospital. The aims of the study were to determine the prevalence of HIV infection among patients for ENTH&N surgeries and to document the ENTH&N conditions that were associated with HIV infection.

Methods: This was a prospective study that was carried out in the ENTH&N Surgery department of UBTH, Benin City, Nigeria, between January, 2009 and December, 2010. All patients that were worked up for surgeries were enrolled into the study. Appropriate data were retrieved from the patients who gave informed consent for surgery and had retroviral screening and confirmatory tests by ELISA and Western blot methods respectively. The retroviral status of all the patients and the indications for the surgical procedures done were documented.

Results: There were 173 patients; 100 males and 73 females, with a male to female ratio of 1.37:1. Ages ranged from 0.83 years to 72 years, with an average age of 26.82 years. Out of a total of 168 patients screened for HIV infection in this study, 6 patients were retroviral positive. This gives a prevalence of 0.036%. Out of the 6 patients that were retroviral positive, 3 patients had chronic tonsillitis, 1 patient had chronic tonsillitis and otitis media with effusion, while the other 2 patients had submandibular gland and nasopharyngeal tumours respectively.

Conclusions: A prevalence of 0.036% of HIV infection was found in patients for ENTH&N surgeries. Chronic tonsillitis was the commonest presentation of HIV infection, equally followed by OME, nasopharyngeal and submandibular gland tumours.

Keywords: Outcome, Retroviral screening, Booked, Ear, Nose, Throat, Head and neck surgeries, Nigeria

INTRODUCTION

Human immunodeficiency virus (HIV) was first isolated by Popovic and his fellow researchers in the United States of America in 1983 followed by Barre and coworkers in Paris in 1992.¹ HIV leads to the damage of the immunological make-up (especially T4 lymphocytes) of the individual, which if not tackled may lead to the development of acquired immuno-deficiency syndrome (AIDS).² Serological kits for the diagnosis of HIV infection was introduced in 1985.³ It was estimated in 1997 that about 22.6 million (0.4%) of the world's 5.5 billion population were living with HIV/AIDS. Specifically, an estimated 3.1 million new HIV infections occurred in 1996 alone (an estimated 8000 to 9000 infections per day).³ It is therefore in the interest of physicians world-wide to ensure that every single case of HIV infection is detected as early as possible for appropriate treatment to be given to the individual and more importantly prevention of the spread of the infection to contacts.

Although significant progress has been made in understanding the epidemiology of HIV/AIDS worldwide, the epidemic in Africa has continued to grow with disastrous consequences, erasing decades of health, social and economic progress as it has reduced life expectancy and deepened poverty. Africa with only 10% of the world's population, carries well above 75% of the burden of the epidemic; which is spread through unprotected heterosexual relationships and mother-to-child transmission. 4,5

In Nigeria it has been estimated that 3.6% of the population are living with HIV/AIDS.⁶ Although HIV prevalence is much lower in Nigeria than in other African countries, with a Nigeria's population of 162.5 million, it was estimated that as at 2009, there were an estimated 3.3 million people living with HIV.^{7,8} It was estimated that in 2009, an approximately 220,000 people died from AIDS in Nigeria.⁹ With AIDS claiming so many lives, Nigeria's life expectancy has declined significantly from 54 years for women and 53 years for men in 1991 to an overall life expectancy of 52 years in 2010.^{10,11}

The HIV prevalence, among patients undergoing, or about to undergo surgery was estimated using data from HIV surveys conducted in Glasgow between 1992 and 1997. On the basis of a surgeon sustaining three percutaneous injuries over 12 months for example and not taking post-exposure prophylaxis (PEP) after each, the annual risks ranged from 1 in 2 million for urological/renal surgeons to 1 in 200 thousand for those performing general/ENT/gynaecological procedures. The use of PEP after each injury would reduce the rates to 1 in 10 million and 1 in 1 million respectively. 12

Patients with different social, family, occupational and epidemiological background present for ear, nose, throat, head and neck (ENTH&N) surgeries in the University of Benin Teaching Hospital (UBTH), Benin City, Nigeria. In the absence of a mandatory HIV screening programme

for all Nigerians, it became necessary to screen all patients for ENTH&N surgeries for easy identification of those with HIV infection. This is necessary for treatment of the patients and for prophylactic protection of the surgeons, nurses, other health workers, the patients' family members and the general public. This study was therefore carried out with the aim of determining the prevalence of HIV infection among patients for ENTH&N surgeries and to document the ENTH&N conditions that were associated with HIV infection.

METHODS

This was a prospective study carried out in the ENTH&N Surgery department of UBTH, Benin City, Nigeria, between January, 2009 and December, 2010. All patients that were worked up for ENTH&N surgeries were enrolled into the study. Data retrieved from the patients included age, sex, diagnosis and the planned surgery. All patients were then counselled on the need to know their HIV status and those patients that gave informed consent had retroviral tests done using the ELISA method for the screening and Western blot as confirmatory test in the HIV laboratory of UBTH, Benin City. The patients that tested positive to both the initial screening and confirmatory tests had their retroviral status documented. All the patients that were fit for surgery subsequently had their respective surgical procedures done. The retroviral positive patients that had surgery were evaluated for the outcome of their surgical procedures. The data were recorded in an adopted format and analyzed using descriptive methods and results presented in tabular formats.

RESULTS

There were 173 patients that were involved in the study, made up of 100 males and 73 females, with a male to female ratio of 1.37:1.

Table 1: Outcome of retroviral screening for patients.

Status	Retroviral negative		Retroviral positive		Total
Gender	Males	Females	Males	Females	
Number	96	66	2	4	168
Percentage (%)	57.14	39.29	1.19	2.38	100.00

Table 2: Details of patients who were retroviral positive.

Case	Sex	Age	Diagnosis	Planned surgery	Outcome
1	M	29	Chronic tonsillitis	Tonsillectomy	Deferred due to uncontrolled hypertension, pericardial cyst and pericardial effusion.
2	F	26	Chronic tonsillitis	Tonsillectomy	Deferred due to low PCV. Patient defaulted
3	F	29	Chronic tonsillitis	Tonsillectomy	Deferred due to low PCV. Patient defaulted
4	M	39	Bilateral otitis media with effusion, Chronic tonsillitis	Bilateral myringotomy+Grommet insertion+tonsillectomy under GA	Successful surgery

Continued.

Case	Sex	Age	Diagnosis	Planned surgery	Outcome
5	F	38	(R) submandibular gland tumour	Excision of (R) submandibular gland under GA.	Successful surgery
6	F	48	Nasopharyngeal tumour	EUA nasopharynx and biopsy under GA.	Successful surgery

Ages ranged from 0.83 years to 72 years, with an average age of 26.82 years.

Table 1 showed the outcome of retroviral screening for the patients, while Table 2 showed the details of the patients that were retroviral positive.

DISCUSSION

It may be rational to think that the risk of surgeons acquiring HIV occupationally in a country with high prevalence of HIV infection is significant, hence we believe that this study is worthwhile so that surgeons can have a rough guide as to the prevalence of HIV infection in patients been worked up for ENTH&N surgeries. Various surgeries were carried out in the ear, nose, throat, head and neck regions for patients during the study period. Out of a total of 168 patients screened for HIV infection in this study, 6 patients were retroviral positive. This gives a prevalence of 0.036%. This is quite low when compared with the overall prevalence of 3.6% of Nigerians living with HIV/AIDS and when compared with 5.4% in a similar study in Nigeria. 6,13 The difference in prevalence may be due to the differences in local prevalence, differences in the periods of study, the effect of preventive measures and methods of selecting study subjects. A higher prevalence would be expected if this study was carried out in the HIV clinic of UBTH, Benin

Despite a male to female ratio of 1.37 to 1 of patients in this study, 4 females were retroviral positive as against 2 males in this study. Although previous workers have demonstrated male preponderance in Otorhinolaryngological patients with HIV infection, in the overall prevalence of Nigerians 15 years and above living with HIV in 2009, women accounted for 56%. This finding which is reflective of the general HIV pattern in Nigeria, is in contrast with the findings of the workers mentioned above. This difference in the gender ratio in previous studies compared to recent studies and this study may be likely due to the changing epidemiology of the epidemic; from an initial male preponderance to a female one.

It is believed that the level of health information among young married women as regard HIV/AIDS is quite low and with the relatively young age that women get married, they may not be wise enough to be extra careful as they tend to erroneously believe that they are low-risk for becoming infected with HIV infection. This probably accounts for the higher prevalence of HIV infection in females. This was corroborated by the fact

that the average age of the female patients that were HIV positive was 34 years.

Four of the 6 patients that were retroviral positive had diagnosis of chronic tonsillitis; which has been copiously documented in similar studies with Imogu having 35.7%, Bakari and co-workers 9.4%, Nwaorgu and co 50% and Mgbor and co 25%. ^{13,14,18} Qualitative and quantitative humoral defects, likely predispose HIV-infected patients to chronic tonsillitis. Ig-E mediated allergic disease is more prevalent in HIV-infected patients than in non-infected individuals and can cause mucosal oedema and blockage of the tonsillar crypts, causing a secondary bacterial infection.

Other pathologies that were associated with HIV infection in this study included otitis media with effusion, submandibular gland tumour and nasopharyngeal tumour. Previous workers in Nigeria, did not encounter otitis media with effusion, but the occurrence of salivary gland tumours were documented by Imogu and Bakari and coworkers. ^{13-15,18} Ezeanolue in a study at the UNTH, Enugu, found 6 patients with upper airway obstruction who later tested to be retroviral positive.¹⁹ No similar finding of upper airway obstruction was noted with HIV infected patients in this study. Similar studies in the USA, Spain and Brazil identified oropharyngeal candidiasis and sarcoma as the commonest primary manifestations of HIV/AIDS in the head and neck region.²⁰⁻²² This is at variant with our finding of chronic tonsillitis as the commonest ENTH&N condition that is associated with HIV infection.

An Otorhinolaryngologist may be the first physician to examine a retroviral positive patient, hence it is important that ENTH&N conditions that are associated with HIV infection should be well known to give a high index of suspicion as earlier alluded to by Bakari and Lucente. ^{14,23} Although the first 3 cases in table 2 could not have their surgeries because of the listed challenges, the other patients had successful surgeries, with the employment of universal precautionary measures against HIV infection and hepatitis cross infection. ²⁴ All the HIV infected patients were appropriately counselled and referred to physicians for medical treatment of their retroviral status.

It therefore follows that a prior knowledge of the retroviral status of a patients in need of an ENTH&N procedure gives the surgeon more confidence and needed prophylactic and therapeutic preparation in the advent of any adversity. The need for surgeons and physicians to ascertain the retroviral status of their patients for a more holistic management and for the institution of

prophylactic measures to safeguard other stakeholders in the health sector cannot be overemphasized.

We however advocate that future researchers in this regard should endeavour to link the marital status of the patients and family history of HIV infection to their retroviral status. It will also be necessary to delve into the social/occupational history of the patients to ascertain whether they are commercial sex workers; as this category of workers usually have a very high prevalence of retroviral infection. ²⁵⁻²⁹

CONCLUSION

A prevalence of 0.036% of HIV infection was found in patients that were worked up for ENTH&N surgeries. Chronic tonsillitis was the commonest presentation of HIV infection, equally followed by OME, nasopharyngeal and submandibular gland tumours.

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Institutional Ethics Committee

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