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Research Article

DISTRIBUTION PATTERN OF CERVICAL EPITHELIAL DYSPLASIA AMONGST HIV SERO-POSITIVE PREGNANT MOTHERS ATTENDING THE PREVENTION FROM MOTHER TO CHILD TRANSMISSION (PMTCT) CLINIC AT NNAMDI AZIKIWE UNIVERSITY TEACHING HOSPITAL NNEWI-NIGERIA

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ABSTRACT

Background: Cervical epithelial dysplasia refers to abnormal changes in the epithelial cells of the cervix which may transform to cervical cancer if not detected and treated. Risk factors include multiple sexual partners and HIV sero-positivity. Early detection through regular Pap smear tests enables early intervention which may reverse progression to malignant lesion.
Objective: To evaluate the prevalence and distribution pattern of cervical epithelial dysplasia amongst HIV sero- positive pregnant mothers attending the prevention from mother to child transmission (PMTCT) clinic at Nnamdi Azikiwe University Teaching Hospital Nnewi-Nigeria
Methods: Fifty nine subjects (59) with no history of malignancy were recruited by simple random sampling. Cervical smears were obtained, processed, stained by Papanicolaou staining method and each slide examined under optical microscope.
Results: Results obtained showed epithelial cell dysplasia in 79.5% of the smears. Atypical cells of undetermined significance (ASCUS) were 22.0%, atypical squamous cells (cannot rule out high grade squamous intraepithelial lesion) (ASC-H) were 12.0%, low grade squamous intraepithelial lesions (LSIL) were 23.7% and high grade squamous intraepithelial lesions (HSIL) were 21.8%.
Conclusion: It could be concluded that there is high prevalence of cervical epithelial dysplasia amongst the study population. Regular Pap smear test therefore is recommended.

INTRODUCTION

Cervical cancer is the most prevalent cancer of the female genital tract and one of the leading causes of mortality amongst the female population[1]. It is the fifth common cancers worldwide with 80% of affected population found in developing countries. Cervical cancer is the most common cancer of the Nigerian female population, with an incidence of 250/100,000 [1, 2]. The high incidence of course may be due to lack of screening programme and early intervention of any sort. Most often, cervical epithelial dysplasia is caused by infection with high risk human papillomavirus (HPV). HPV, a sexually transmitted infection is considered as the primary underlying etiologic agent of cervical cancer. Most infections with HPV resolve spontaneously but a few persist to cause cervical dysplasia and cancer. Cervical dysplasia may take about 10-20 years to develop to invasive cancer [3]. Invasive cervical cancer is a progression from premalignant stages called cervical epithelial cell dysplasia.

Cervical epithelial dysplasia also known as cervical intra – epithelial neoplasia (CIN) or cervical interstitial neoplasia refers to abnormal changes in the epithelial cells of the cervix most often caused by infection with human papilloma virus (HPV). It is the potentially premalignant transformation of squamous cells on the surface of the cervix [4]. Cervical dysplasia is not malignat and is usually curable with most cases remaining stable or is eliminated by the host's immune system without intervention. Possible risk factors of cervical dysplasia and cervical cancer include, sex at early age (below 16 years),

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infection with high risk HPV (HPV 16 and 18), Multiple sexual partners, immune-suppression, infection with herpes virus, smoking, low socioeconomic status, use of contraceptive pills and exposure to diethylstilbestrol (DES). Effective intervention, through early detection by cervical (PAP) smear screening, possibly prevents progression from cervical dysplasia to invasive cancer. Unfortunately, about 95% of women in developing countries have never been screened resulting in about 80% of women being diagnosed annually with late stage cervical cancer [3].

This study therefore, sought to elucidate the prevalence and distribution pattern of cervical epithelial cell dysplasia amongst this high risk study group.

MATERIALS AND METHODS

Study Site

The study was carried out at Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi-Nigeria.

Study Design

This is a cross sectional study.

Study Population/Subject Recruitment

The study population comprised of HIV sero positive pregnant mothers attending Prevention from Mother to Child Transmission (PMTCT) clinic of NAUTH Nnewi. Fifty nine (59) volunteers were randomly selected. The minimum sample size was determined by Yaro Yamane formula as used by Ogenyi *et al* [5].

Ethical approval was obtained from the Ethics Committee of Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi-Nigeria. Written informed consent of each participant was sought and obtained from each participant.

Sample Collection

Blood: Two milliliters (2ml) of venous blood was collected from each subject into ethylene diamine tetracetic acid (EDTA) bottles. The blood samples were tested to confirm HIV sero positivity using the National HIV testing algorithm [6].

Cervical Smear: Cervical smear of each participant was collected, processed and stained according to a method described by Ogenyi *et al*., [5]. With the aid of disposable speculum, the vagina was dilated and using wooden Ayre spatula, cervical smear was obtained at the transformation zone of the cervix. Conventional smear was made on pre-labelled grease-free microscope slides and were inserted immediately into a jar of 95% ethyl alcohol fixative for 15 minutes. Slides were there after stained by the Papanicolaou method.

Microscopy*:* Stained slides were examined using a bio systems digital optical microscope and cells categorized according to Bethesda system of reporting cervical cytology 2001.

RESULTS

Cervical epithelial cell dysplasia of varied grades was observed in 79.5% (50) of the subjects while 20.5% (19) showed normal cells. Atypical squamous cells of undetermined significance (ASCUS) were 22.0%, atypical squamous cells (cannot rule out high grade squamous intraepithelial lesion) (ASC-H) were 12.0%, low grade squamous intraepithelial lesions (LSIL) were 23.7% and high grade squamous intraepithelial lesions (HSIL) were 21.8%. Mean age of patients with diagnosis of LSIL and ASC-H was 31years and that in HSIL was 30 years (Figure 1). Fifty three (53%) of patients diagnosed with HSIL had multiple sexual partners prior to marriage (Figure 2). The cyto-morphologic features of the cells are as shown in figure 3.

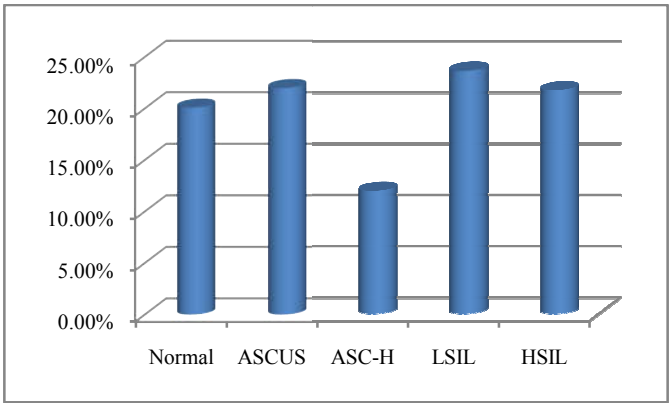

Figure 1 Distribution pattern of cervical epithelial dysplasia amongst the study group

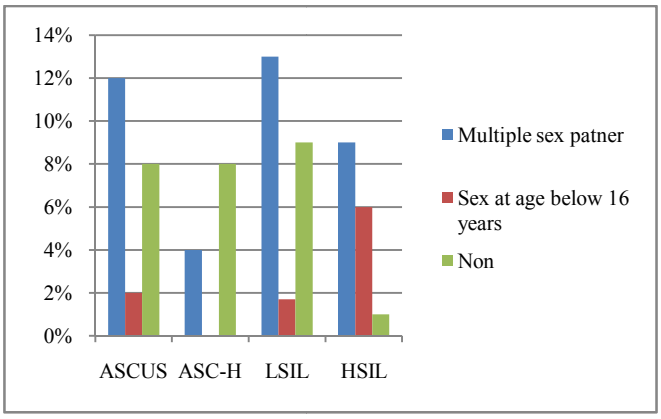

Figure 2 Risk factor distribution pattern of cervical epithelial dysplasia amongst the study group

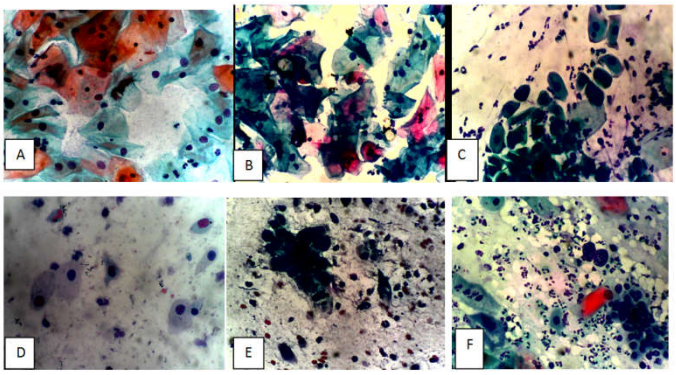

Figure 3 (A-F): Morphological pattern of cervical epithelial dysplasia amongst the study group (PAP X 400) (A): Normal, (B): ASCUS, (C): ASC-H, (D): LSIL, (E&F): HSIL

DISCUSSION

Studies on the Prevalence and distribution pattern of cervical epithelial dysplasia amongst HIV sero- positive pregnant mothers have been carried out by various authors [7, 8, 9, 10]. The high prevalence (79.5%) of cervical epithelial dysplasia reported in this study agrees with earlier studies [7, 8, 9, 10].

Agida *et al* [7] reported higher prevalence of cervical dysplasia in HIV positive women (56.3%) relative to HIV negative women (12.6%) in a study carried out in north central Nigeria. High grade intraepithelial lesion (HSIL) and invasive cervical cancer have been associated with HIV infection [8, 9, 10]. The report of these earlier studies corroborated with the result of this present study.

This is not unlikely in the highly vulnerable study population. The study population comprised not only immunocompromised subjects but those who may have been exposed to high risk factors of cervical cancer. The high prevalence of both high and low grade intraepithelial neoplasm could also attributed to inability of the dysplastic cells to spontaneously reverse to normal cells because low immunological response of the already compromised immune system. Multiple sexual partners and early exposure to sex could also have lead to the high prevalence of cervical epithelial dysplasia.

Cervical cell dysplasia is considered a premalignant cervical lesion, most often progressing to invasive cancer, especially in immunocompromised subjects, if no intervention is administered. This study further affirms the vulnerability of HIV sero positive subjects in general and pregnant mothers in particular to cervical dysplasia which may likely progress to cancer without early intervention. It may also be affirmed from this study that immuno- suppression and multiple sexual partners are high risk factors of cervical epithelial dysplasia vis-à-vis cervical cancer.

CONCLUSION

Sequel to the findings of this study, one could conclude that this already troubled population are at high risk of developing cervical cancer. Therefore, regular Pap smear test for HIV sero-positive pregnant mothers and non positive mothers alike is recommended, for prompt detection of pre malignant lesions and early intervention.

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