CERVICAL EPITHELIAL CHANGES IN A TERTIARY HOSPITAL IN NORTHERN NIGERIA

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ABSTRACT

Introduction: Cervical cancer is the commonest gynaecological malignancy in Nigeria, accounting for most deaths from cancers in women. Screening remains one of the best ways to prevent this catastrophe.

Methodology: This was a cross sectional study conducted among patients that presented for cervical cancer screening at the Jos University Teaching Hospital, Jos, Plateau State, North Central Nigeria over a Five-year period (1st August, 2006-31st July, 2011). Data was analyzed for frequencies using EPI Info 3.5.1, CDC, Atlanta, USA.

Results: During the period of study (74.5%) of the 7863 women screened were normal. Inflammatory changes, LSIL and HSIL, were the commonest abnormalities. Eight point four percent (8.4.%) were either ASC-US or ASC-H, 35 (0.4%) were AGUS or AGUS-N. LSIL and HSIL were 547 (7.0%) and 193 (2.4%) respectively. One thousand, six hundred and seventy two (21.2%) were inflammation changes, bacterial infection, or trichomoniasis. Thirty two (0.4%) cases of suspected invasive carcinoma were seen.

Conclusion: The abnormal cytological abnormality rate was high. More effort needs to be put in place to ensure that women have access to screening to reduce the burden of cervical cancer in this environment.

Keywords: Paps smear, intraepithelial changes, cervical cancer, Jos University Teaching Hospital.

INTRODUCTION

Cervical carcinoma has assumed tremendous public health importance globally and is the commonest cancer in women in the developing world [1]. It is second only to the breast as the commonest malignancy in women, the commonest gynaecological malignancy, and the leading cause of gynaecological deaths in Nigeria[2,3].

It presents significant management problems for the gynaecologist in this environment as most women affected present with the advanced stages of the disease when cure is unrealizable, hence HPV vaccination and screening offer

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hope for control[4,5].

Cervical screening has emerged as a very effective method for the prevention of cervical carcinoma. This is because the uterine cervix is anatomically accessible. The prolonged, premalignant phase has a treatable pre-invasive stage, which can be detected by studying the cellular characteristics of the exfoliated cells (Papaniculaou smear). Studies of cervical intraepithelial changes are therefore vital in the pursuit of reducing the burden of cervical cancer globally, and Nigeria in particular[2,3,6].

The purpose of this study is aimed at reporting the pattern of cytological changes seen at the Cervical Cancer Screening Unit of the Department of Obstetrics and Gynaecology, Jos University Teaching Hospital, Jos, Plateau State.

METHODOLOGY

This was a cross sectional study conducted among patients that presented for cervical cancer screening at the Cervical Cancer Unit (CCU) of Jos University Teaching Hospital, Jos, Plateau State, North Central Nigeria, over a five-year period (1st August, 2006-31st July 2011).

The Cervical Cancer Unit was established in 2006 as collaboration between the Jos University Teaching Hospital, and the Operation Stop Cervical Cancer in Nigeria Project (OSCCN). The OSCCN was a joint program between MD Anderson Cancer Centre, and grant funded by Exxon-Mobil Foundation.

The clients were either self referred, or were referred from the various clinics in JUTH, or other clinics/health facilities around Jos, and its environs.

Trained interviewers questioned each client that consented to be part of this study. The data was entered into a structured pre tested questionnaire that was transferred into File Maker Pro, version 8. The data was analyzed for frequencies using EPI Info 3.5.1, CDC, Atlanta, USA.

After clinical and gynaecological examinations were performed, cervical smears were obtained using bi-valve Graves's speculum to gain access to the cervix. Ayres spatula was used to obtain specimen from the ecto-cervix, and endocervix. Where the endocervix is inaccessible to the Ayre's spatula, a cyto-brush was used.

Smears were made on two points on glass slides, and then fixed immediately in 95% (v/v) alcohol in coupling jars. These were then stained with Papanicolau reagent, and then read by the Cytopathologist.

The slides were reported as normal, inflammatory, Atypical squamous cells of undetermined significance (ASC-US), Atypical glandular cells of undetermined significance (AGC-US), Low-grade squamous intraepithelial lesion (LSIL), or High-grade squamous intraepithelial lesion (HSIL)

Approval was obtained from the Ethics Committee of the Jos University Teaching Hospital, Jos, Nigeria.

Data analysis: Data was analyzed for frequencies using EPI Info 3.5.1, CDC, Atlanta, USA.

RESULTS

The socio-demographics of the patients showed that screening occurred among the 20-50 year age group (84.6%) high parity, as well as in the numerous ethnicities present on the Jos Plateau (Table 1).

Fifty one point one percent had tertiary education, 82.4% were married, and 7% were single. Forty-four% of the screening occurred among the Civil Servants, Teachers,

Businesswomen, and House wives (Table 1)

Risk factors studied showed that 5020 (63.8%) had their sexual debut between 15-20 years, 78 (1%) smoked cigarettes, 568 (7.2%) consumed alcohol, while 667 (78.8% of infections) had HIV (Table 2).

During the period of study 4743 (60.3%) of the 7863 women screened were normal, while 3120 (39.7%) were abnormal. LSIL and HSIL were the commonest abnormalities.

Six hundred and fifty three (8.4%) were either ASC-US or ASC-H, 35(0.4%) were AGUS or AGUS-N. LSIL and HSIL were 547 (7.0%) and 193(2.4%) respectively.

One thousand six hundred and seventy two (21.2%) were inflammation changes, bacterial infection, or trichomoniasis. Thirty-two (0.4%) cases of suspected invasive carcinoma were seen (table 2).

Most of the LSIL, and HSIL occurred in the age range of 40 to 64 (Table 3).

The mean ages of the patients and the cytological abnormalities are as shown in table 3.

DISCUSSION

This study indicates that the prevalence of cervical cytological abnormality is 39.7%. This is more than the 13% reported from Ibadan and the 29% reported among HIV positive women from this Centre[1,2].

Different cytological cervical epithelial changes are detectable using the Paps smear cervical screening [7]. Several cytological abnormalities were seen.

Majority 4743 (60.3%) of the women in this study had normal smear. This is within the reported range worldwide but higher than the reported normal smear rates of 71% in U.S.A and in an earlier study in Jos[1, 2.] However, the normal smear rate of 60.3% in this study is higher than the 36.5% reported in Lagos, but is lower than the 86% in Jos [2, 3]. This may be due to the large sample size in this study.

The abnormal cervical smear rate of 39.7% in this study may be a clear indication for the need for routine cervical smear screening among our women. This is vital in the reduction of cervical cancer in our environment [2,3, 8]. The pattern of cervical epithelial changes in this study is at variance with most studies. In this study, 7.0% had LSIL. This represented majority (7.0%) of the abnormal cervical epithelial changes outside inflammatory changes, in these women. This is lower than the 22.2% reported from Jos, but similar to the 7.6% from Okenne in Nigeria [9,10,]. This difference may be because of differences in the populations studied, and the fact that JUTH is a referral Centre for other facilities in the zone.

ASC-US changes were the second commonest (6.4%) of the abnormal changes seen. However, in an earlier study in Jos, the bulk (57.7%) of the abnormal cytology was ASC-US [11].

Two point four percent (2.4%) of the abnormal changes were from HSIL. This is lower than the 20.2% of earlier study in Jos but more than 0.5% reported in Okenne[10, 11,]. In this study, 0.3% had lesions that favour Neoplasia, which is similar to that (0.44%) observed in Ibadan [8]. This may be so because both Ibadan, and Jos are major centres for screening for cervical pre-malignancy in the South, and North of Nigeria, hence patients may preferentially gravitate to these Centres.

Twenty one point two percent (21.2%) of the total women screened had non- specific inflammatory changes. This is important as it may justify antibiotic treatment and repeat testing in this group of women. In addition, some

of these observations may be HPV changes.[7, 13]

There were more abnormal changes in the older age group. The mean age for the normal smear was 37.3 years, while it was 48.7%, 46.8% and 48.2% for LSIL, HSIL and Carcinoma in situ respectively. The result from this study justifies the view that age is a factor in the development of abnormal cervical changes.

It is also important to note that 6.7% and 4.8% of those with LSIL and HSIL respectively were below 30 years of age. This finding supports cervical screening for all sexually active women, though more frequent screening may be indicated in the older age group [8-14].

Because these women availed and utilized the screening services in this Centre, those with abnormalities were promptly managed appropriately, thereby averting the unpleasant outcomes.

Cervical screening targeted towards the entire population of reproductive age women has been highly successful in the developed world [8-10]. This is not the case in the developing world where adult married women largely utilize screening programs. This is as a result of cultural barriers preventing unmarried and young women from accessing the various entry points to reproductive health services. The result is a large population of sexually active young women with poor knowledge and utilization of cervical screening that may ultimately lead to the development of cervical cancer[1]

Cytological screening for epithelial abnormalities is a valuable intervention for prevention of cervical cancer. Globally, most abnormalities detected from cervical smears are ASC-US and low-grade lesions. In the developed, world where awareness and uptake of screening cuts across the reproductive age-groups, cytological abnormalities are more prevalent among adolescents compared to adult women. In this Centre, uptake of screening by the older aged-women was much more than the younger women, and abnormalities were seen more in the 5th decade of life. Cervical cytological abnormality rate of 39.7% was seen.

ACKNOWLEDGEMENT

The Jos University Teaching Hospital and the Operation Stop Cervical Cancer In Nigeria Project supported this study.

DISCLOSURE

Conflict of Interest

We declare no conflict of interest by any of the Authors.

Tables

Table 1 **Socio-Demographic Factors**

Variable	Frequency	Percentage (%)
Age		
<20	37	0.4
20-30	1962	25
31-40	2546	32.3
41-50	2149	27.3
51-60	658	8.5
61-70	146	1.8
71-80	22	0.3
Don't Know	343	4.4
Total	7863	100
Parity		
1-4	4036	51.3
5-10	2157	27.5
>10	80	1.0
Not stated	1590	20.2
Total	7863	100
Ethnic Group		
Hausa	579	7.4
Igbo	632	8.0
Yoruba	515	6.5
Others	6137	78.1
Total	7863	100
Education		
Primary	1069	13.6
Secondary	1857	23.6
Tertiary	4019	51.1
None	918	11.7
Total	7863	100

Marital Status		
Married	6479	82.4
Single	542	6.9
Widowed	523	6.8
Divorced	52	0.6
Separated	52	0.6
Not stated	215	2.7
Total	7863	100
Occupation		
Media	82	1.0
Professionals	191	2.4
Applicant	197	2.5
Banking	199	2.5
Armed Force	253	3.2
Hospital Aid	274	3.5
Farmer	490	6.2
Artisan	507	6.3
Student	550	7.0
Trader	637	8.1
Hospital Professional	831	10.7
House wife	862	11.0
Business	886	11.3
Teacher	886	11.3
Civil Servant	1018	13.0
Total	7863	100

Table 2 **Risk Factors and Cytology**

Variable	Number	Percentage (%)
Age at Coitache		
Age		
<10	8	0.1
10-15	772	9.8
16-20	4248	54.0
21-30	2616	33.3
31-40	76	1.0
=41	1	0.0
Not stated	142	1.8
Total	7863	100
Cigarettes		
Smoke		
No	7718	98.2
Yes	78	1.0
Not stated	67	0.8
Total	7863	100
Alcohol Consumption		
No	7209	91.7
Yes	568	7.2
Not stated	86	1.1
Total	7863	100
STIs		
HIV	667	73.8
Gonorrhoea	41	4.5
Genital Warts	25	2.7
Others	171	19
Total	904	100
Cytology		
Normal	4743	60.3
Inflammatory	1672	21.2
AGUS	23	0.3
AGUS Favour Neoplasia	12	0.1
ASC-US	501	6.4
ASC-H	152	2.0
LSIL	547	7.0
HSIL	193	2.4
HSIL Suspicion for Invasion	20	0.3
Total	7863	100

Table 3 **Mean Ages Of Various Cytological Changes**

Cytological changes	Mean age (years)
Negative	37.3
ASC-US	41.4
ASC-H	44.3
AGUS	41.6
AGUS-N	43.5
LSIL	48.7
HSIL	46.8
Suspected Carcinoma	48.2
Others	39.2

Note: ASC-US, atypical squamous cells of undetermined significance; ASC-H, atypical squamous cells, cannot exclude HSIL; AGUS - atypical glandular cells of undetermined significance; AGUS–N, atypical glandular cells of undetermined significance, cannot exclude neoplasia; LSIL, low-grade squamous intraepithelial lesion; HSIL, high-grade squamous intraepithelial lesion.

★ Others – acute inflammation, bacterial infection, trichomoniasis, atrophy, and no diagnosis rendered

Overall mean age = 39.8 years

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