



■ Original Research Article

Pathological Pattern of Cervical Smears in A Tertiary Hospital in Northeastern Nigeria.

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Abstract

Background: Cervical intraepithelial neoplasia (CIN) is a premalignant lesion of the cervix that progresses into cervical cancer if untreated. An early diagnosis which determines the treatment of CIN is a preventive measure of cervical cancer. Diagnosis in a developing setting like Nigeria lacks screening programmes which may affect early detection of the disease.

Objectives: The study is aimed at determining the prevalence and pattern of cervical cytology of smears received in the Department of Pathology, Modibbo Adama University Teaching Hospital, Yola. **Methods:** A retrospective study of all cervical smears received, processed and reported at the Department of Pathology, Modibbo Adama University Teaching Hospital, Yola between January 2015 to December 2019. Classification was by the Bethesda system and analysis was by simple statistical methods.

Results: The overall prevalence of CIN was 12% during the study period, While the percentage of normal smears was 74.5%, Unsatisfactory smears 11.4% and the percentage of cytological abnormality was ASC-US 4.6%, AG-US: 4.6%, LGSIL 44.4%, HGSIL 31.8% and 14.6% for Invasive lesions. 33.3% of women aged 35-44 years had CIN, which was the highest age group. **Conclusion:** Premalignant lesion are common, and a need for regular cervical screening programme to identify and monitor women with these lesions is recommended for early treatment.

Keywords: Cervical intraepithelial neoplasia, Atypical squamous cells, Atypical glandular cells MAUTH, Yola

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Abbreviations:

AGUS: Atypical glandular cells of undetermined significance; **ASC-US:** Atypical squamous cells of undetermined significance; **CIN:** Cervical intraepithelial neoplasia; **HSIL:** High grade squamous intraepithelial lesion; **LSIL:** Low grade squamous intraepithelial lesion; **MAUTHY:** Modibbo Adama University Teaching Hospital, Yola

Introduction:

Cervical cancer is the 4th most common cancer among women worldwide¹. It is the commonest malignancy in the developing world² and the second leading cause of gynecological cancer deaths in Nigeria³. The premalignant phase is detected by studying the cellular characteristics of the exfoliated cells and therefore vital in reducing cervical cancer³. Cervical intraepithelial neoplasms (CIN) are characterized by abnormal cellular proliferation, maturation and chromatin distribution⁴. It is a premalignant precursor of cervical cancer requiring treatment to prevent and control the development of cervical cancer⁵. The study therefore aimed at determining the prevalence and pattern of cervical smear cytology among women in our region.

Methodology

Study design

This is a retrospective study of all cervical smears received and processed at the Department of Pathology, Modibbo Adama University Teaching Hospital, Yola over a five- year period (1STJanuary 2015 and 31STDecember 2019).

Study Area

The study was conducted at the Modibbo Adama University Teaching Hospital (MAUTH), Nigeria. The hospital is located in Yola, the capital of Adamawa state; one of the states in north-eastern Nigeria. The hospital renders tertiary health care services to the populace of the entire region and neighbouring states and Cameroon.

Study population

This study included all women who had cervical Papanicolaou (PAP) smears done and reported by Pathologist within the study period. Their bio data and diagnosis were retrieved and classified using 2014 Bethesda classification.

Sample analysis

Specimen adequacy was properly assessed based on presence of endocervical cells and/or metaplastic cells as well as adequate number of squamous epithelial cells i.e. more than 10% of the slide contain squamous cells. The slides were reported according to the 2014 Bethesda System for reporting Pap smear results. This adopts descriptive diagnoses, including - Benign cellular reactive changes including infections, inflammation, atrophy (Negative) and finally

epithelia cell abnormalities which are classified as atypical squamous cells of undetermined significance (ASCUS); Low-grade squamous intraepithelial lesion (LSIL); High-grade squamous intraepithelial lesion (HSIL); atypical glandular cells of undetermined significance (AGUS) and invasive carcinoma.

Statistical Analysis

Frequencies were determined according to normal and abnormal smears as well as age groups. Percentages were calculated and the prevalence of cervical intraepithelial neoplasia reported. The data were analysed using IBM Statistical Package for Social Sciences (SPSS) package version 22.0, April 2020 (SPSS 22.0, IBM, United States of America).

Results

The total number of pap smears received was 1251. One hundred and forty- three (11.4%) were unsatisfactory. The prevalence of abnormal cervical epithelial neoplasia was 151 (12.1%).

Table 1. The ages of patients whose samples were reviewed

Age group	Frequency	Percentage
15-24	63	5.0
25-34	314	25.1
35-44	451	36.1
45-54	289	23.1
55-64	89	7.1
65-74	32	2.6
≥75	13	1.0
Total	1251	100

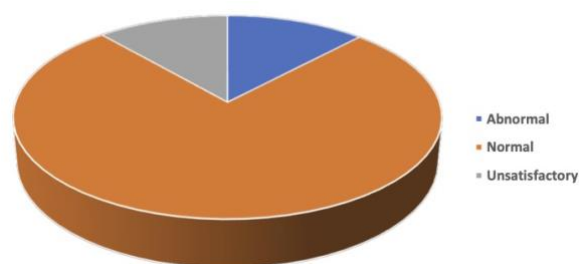


Figure 1. Pie chart showing the Pattern of Cervical smears according to pathological diagnosis

Table 2: Prevalence of Cervical abnormalities

Lesion	Frequency	Percentage
ASCUS	7	4.6
AGUS	7	4.6
HSIL	48	31.8
LSIL	67	44.4
INVASIVE	22	14.6
TOTAL	151	100

The age range of the women screened were between 15years and 89years. The largest number of smears was between ages 35- 44years (33.3%).

Majority of the smears were normal 957 (76.5%) and regarded as negative smears while 143 (11.4%) were unsatisfactory. Abnormal smears were seen in 151 (12.1%).

These abnormal epithelial changes were made of ASCUS 7 (4.6%), AGUS 7 (4.6%), LSIL 67 (44.4%), HSIL was found in 48 (31.8%) while invasive carcinoma was found in 22 (14.6%) patients.

Discussion

Cervical intraepithelial neoplasia are precursor lesions for cervical cancer, need to be identified early and treated to prevent its development into cervical cancer.

This study indicates that the prevalence of cervical cytological abnormalities is 11.4%. It is significantly less than 13% reported in Ibadan⁶, while 12.2%, 17.9% and 39.7% were reported from Enugu⁷, Gombe⁸ and Jos⁹.

Majority (76.5%) 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 the United State of America¹⁰. However, is also higher than the 36.5% reported from Lagos were cancer mortality among patients admitted were observed¹¹. This may be due to the large sample size in this study. The high rate of the abnormal smear in this study shows the need for routine cervical smear screening among our women which is vital for reduction of cervical cancer in our environment¹².

Abnormal cervical smears occurred mostly in women over the age 25 years, with a 40-44 years age range being the most common. The age group with the highest prevalence of CIN (36.1%) was 35-44 years followed by 25-34 years (25.1%). CIN prevalence was seen in age group 40-49 years, with a mean age of 37.6 years¹³ in Zaria. This similar to our study.

In this study, we observed that ASC-US and AGUS were both 4.6% of the abnormal smears which is less than reported in Benin (30.8%)¹⁴. During monitoring of women with ASC-US lesions, 10-30% of LGSIL and HGSIL were reportedly diagnosed¹⁵. In view of these findings, Barcelos' study of analysis of ASC-US and cytologic criteria, advocates for serious monitoring of patients with ASC-US lesions¹⁶.

The overall distribution pattern of the precursor lesions shows LGSIL (44.4%), HSIL (31.8%) and invasive carcinoma (14.6%). This specific distribution pattern is similar to the findings found in another Nigerian study¹⁷.

Several studies in Nigeria and other parts of the world reported LGSIL as the commonest premalignant cervical abnormality observed in women studied^{5,18,19}. Contrary to the present finding, Duru et al., found HGSIL as the commonest abnormality among the women studied²⁰. LGSIL is a precancerous lesion characterized by a shorter and less observable clinical course, with cell changes associated with HPV. Several studies suggest that LGSIL is mainly caused by low-risk HPV infection²¹. While LGSIL may regress spontaneously in a significant number of patients, HGSIL progresses to invasive cancer if left untreated^{5,22}.

The present finding shows that risk of premalignant changes and consequently cervical cancer increases with age with the highest prevalence among 35-44 years followed by 25-34 years. Women can develop CIN at any age, however, women generally develop it between the ages of 25 to 35 years^{5,23}.

Conclusion

More than 12% of the women studied had abnormal Papanicolaou (PAP) smears. These findings underscore the need for well-organized cervical cancer screening programs so that more women can be detected earlier and treated to avoid progression to cervical cancer.

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Conflict of interest: We declare no conflict of interest by any of authors.

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