Prevalence and of abnormal cervical cytology in federal teaching hospital Gombe.

ABSTRACT

INTRODUCTION-Cervical cancer continues to be a significant public health concern, ranking as the fourth most common cancer among women globally, with approximately 604,000 new cases and 342,000 deaths reported in 2020 (World Health Organization, 2020). The burden of cervical cancer disproportionately affects women in low- and middle-income countries (LMICs), where access to effective screening and treatment options is often limited. Early detection and treatment of cervical premalignant lesions are crucial in reducing the incidence and mortality associated with this preventable disease.

OBJECTIVE-The aim of this study was to determine the prevalence of abnormal cervical cytology among patients attending the Gynaecology/postnatal clinic of Federal Teaching Hospital, Gombe State, Nigeria.

METHODS-A retrospective study of all cervical smears received and processed at the Pathology laboratory of Federal Teaching Hospital between January 2022 and December 2022.

RESULTS- The records of 596 smears of women between the ages of 20 and 65 years were retrieved and analyzed. Negative smears were predominant (62.6%) while 8.7% were inflammatory smears. Dys-karyotic smears were found in 155 smears (26.0%); this was made up atypical glandular cells of undetermined significance (AGCUS) in 1.8%, Atypical squamous cells of undetermined significance (ASCUS) in 10.23%, Low grade squamous intraepithelial lesion (LSIL) in 10.6% and High grade squamous intraepithelial lesion (HSIL) in 3.6%. Malignant cells were found in 0.5% of the smears while the remaining 2.1% were unsatisfactory.

CONCLUSION-The relatively high frequency of dyskaryosis in this study lends credence to the need for us to widen our cervical screening coverage in order to achieve the highest possible coverage rate. This can be achieved through the use of public education by means of various media, women and religious organizations.

INTRODUCTION

Cancer of the uterine cervix is a major reproductive health problem and a preventable disease of significant public health concern[1]. It is the fourth most common malignancy in women worldwide and the leading cancer in women in developing countries[2]. About 604,000 women acquire the disease annually and about 75% are from developing countries[1,3]. In developing countries, the incidence of the disease may be up to six times higher than in developed countries, with 80% of cases presenting at an advanced stage[1]. Cervical cancer is the most common female cancer in Northern Nigeriaand second to breast cancer in the southern part of the country[4,5]. The number of deaths from cervical cancer worldwide is estimated to be more than 300 000 per year[3,6].

The incidence of invasive cervical cancer, its morbidity and mortality have declined in developed countries because of the availability of well-organized screening programmes for the detection of the pre-invasive disease[7]. The incidence of cervical cancer can be reduced by as much as 80% if the quality of coverage and follow-up of screening is high[8]. The incidence in any population will not decrease if less than 70% of the population is screened[8]. .In Nigeria there is no such established programme and together with a lack of awareness of cancer of the cervix has led to a high prevalence of the invasive disease, which often presents late[9,10]. Screening is opportunistic and is restricted to a few urban and research centres. Consequently, there are only few available reports on results of cervical cancer screening in this country[11,12]. The incidence of positive cervical screening test for abnormal cytology is11.8% in Ibadan[12], 9.8% in Kano[13], 10.8% in Enugu[14].

Cancer of the cervix is the only gynaecologic cancer that is amenable to extensive screening; this is because the organ involved is easily accessible, exfoliative cells can easily be obtained from it and the disease passes through a well defined preclinical stage, cervical intraepithelial neoplasia (C.I.N)[15]. When cervical cancer is diagnosed and treated in the preinvasive stage, 5-year survival probabilities approach 100%[16]. Cervical intraepithelial neoplasia (CIN) describes a histological condition where part or the whole thickness of the cervical squamous epithelium is replaced by cells showing varying degrees of atypia[17]. It precedes the invasive disease by about 10-15 years[2].

Cervical cytology (pap smear) is an effective screening tool for the detection of the pre-invasive stages, giving the opportunity for prompt and effective treatment before the emergence of the invasive disease[18]. Pap smear was developed by George Papanicolaou in 1943 and since then it has been the gold standard for the detection of premalignant and indeed early malignant lesion of the cervix[3]. It is simple, cheap, easy to administer and fairly well tolerated by patients[3]. It is also a very specific test but its sensitivity is only moderate[3]. A recent meta-analysis found that cervical cytology had an overall sensitivity of 51 percent and a specificity of 98 percent[3]. The efficacy of cervical smear has been improved by the implementation of liquid based cervical cytology[8]. Also HPV DNA testing is now used as an adjunct to cervical cytology for women aged 30 years and older[8]. Another approach to screening for premalignant lesion of the cervix is by using visual inspection of the cervix with acetic acid (V.I.A)[3]. It is simple easy to perform, cheap and acceptable to the clients. Nurses, midwives and even paramedicals can be taught to do it. Also there is no need for histopathological confirmation of the premalignant lesion before treatment[3].

In most developed countries, women are advised to have their first smear test soon after becoming sexually active and subsequently once every 1-3 years. A number of National guidelines are currently moving towards less frequent smear tests (once every 3-5 years) since the cervical lesions develop fairly slowly after several years[19]. However it has been recommended by the consensus conference on cervical cancer screening and management (CCCCSM) that in developing countries with limited resources screening should aim to target high risk women and commenced at age 30 to 35 years and continue till about 60 years of age to reduce excessive expenditure in screening low risk women[20]. The new ACOG guidelines recommend that cervical cancer screening begin approximately three years after a woman's first sexual intercourse or by age 21, whichever comes first and subsequent annual screening up to age thirty[21]. Women who have negative results on three consecutive annual tests can be rescreened every two to three years[21].

At Federal Teaching Hospital pap smear examination was commenced in 2003 as part of the routine laboratory services of the hospital aimed at detecting premalignant lesions of the cervix. Women who attend the postnatal and gynaecologic clinic are screened routinely. The aim of this

study was to determine the prevalence of abnormal cervical cytology among patients attending the gynaecology/postnatal clinic of Federal Teaching Hospital Gombe.

MATERIALS AND METHODS

This is a retrospective study of all cervical smears received and processed at the pathology laboratory of Federal Teaching Hospital Gombe between January 2022 to December 2022. The smears were collected mainly from patients presenting for consultation at the gynaecological, postnatal, family planning and sexually transmitted diseases clinic of Federal Teaching Hospital Gombe. The records of all the subjects were obtained from the pathology laboratory records register. The case files of the patients were retrieved from the medical records library of the hospital. Information on the age, marital status, occupational status, parity and other relevant information were extracted. The data obtained was analyzed using EPI Info statistical package, version 7.2 and presented as tables. Mean, mode and standard deviation were employed where applicable.

RESULTS

During the period under review 596 smears were recorded. Of the 596 smears, 570 case folders were retrieved giving a retrieval rate of 95.3%. Dyskaryotic smears were found in 155cases (20.6%).

TABLE I: SOCIODEMOGRAPHIC CHARACTERISTICS

AGE RANGE	FREQUENCY	PERCENTAGE
20-29	50	8.4
30-39	240	40.2
40-49	200	33.6
50-59	50	8.4
60-65	56	9.4

TOTAL	596	100
MARITAL STATUS	**FREQUENCY**	**PERCENTAGE**
Single	40	6.7
Married	540	90.6
Divorced	10	1.7
Widowed	6	1.0
Total	596	100.0
OCCUPATION	**FREQUENCY**	**PERCENT**
Skilled	41	6.9
Semi skilled	45	7.6
Unskilled	110	18.5
Unemployed	300	50.3
Student	100	16.8
TOTAL	596	100.0

Table I shows the sociodemographic characteristics of the subjects. The age range was between 20 to 65 years with a median age of 34 years and a peak age range between 30-39 years. Majority (50.3%) were unemployed, while 41(6.9%), 45(7.6%) and 110(18.5%) were in the skilled, semi-skilled and unskilled occupation categories, respectively.

TABLE II: PARITY

PARITY	**FREQUENCY**	**PERCENT**
0	20	3.4

1	49	8.2
2	66	11.1
3	56	9.4
4	200	33.5
>5	205	34.4

Table II shows the parity of the subjects; majority (34.4%) had 5 or more deliveries. Only 3.4% were nulliparous.

TABLE III: FINDINGS AT CERVICAL CYTOLOGY

FINDINGS	**FREQU ENCY**	**PERCENT**
Negative	373	62.6
LSIL	63	10.6
ASCUS	61	10.2
INFLAMMATORY	52	8.7
HSIL	20	3.4
Unsatisfactory	13	2.2
AGCUS	11	1.8
Malignant	3	0.5
TOTAL	596	100.0

Table III shows the distribution of cytological smears by cytological findings. 373 (62.6%) were normal or negative smears, while 52(8.7%) were inflammatory smears. Dyskaryotic smears were found in 155 (26.0%); this was made up AGCUS in 11(1.8%), ASCUS in 61 (10.2%), LSIL in

63(10.6%) and HSIL(3.4%). Malignant cells were found in 3 (0.5%) smears while the remaining 13(2.2%) were unsatisfactory that is unsuitable for cytological assessment.

TABLE IV: SYMPTOMS

SYMPTOMS	FREQUENCY	PERCENT
Abnormal vaginal bleeding	68	11.4
Postcoital bleeding	64	10.7
Postmenopausal bleeding	54	9.1
Vaginal discharge	90	15.2
Asymptomatic	320	53.6
Total	596	100

Table IV shows the symptoms present in some of the subjects. Majority, 320 (53.6%) were asymptomatic. However most of the asymptomatic subjects have negative or inflammatory smears.

DISCUSSION

The prevalence rate of 26.0% for dyskaryosis in this study was not higher than the findings of Obafenwa et al in Jos [11], where the prevalence rate was 11.8%. However it was higher than that obtained in the southern part of Nigeria; Lagos 4.1%[6] and Ibadan 7.1%[12]. This may be due to the

fact that early marriage and early age at first childbearing, both aetiological factors for carcinoma of the cervix are very common in Northern Nigeria[4].

Preinvasive disease of the cervix appears predominantly during the third and fourth decades of life[22,23]. This was similar in this study as 56.2% of the subjects in this study were in the 3rd and 4th decades of life. It was also similar to what was obtained in other studies[6,13]. It has been recommended by the consensus conference on cervical cancer screening and management (CCCCSM) that in developing countries with limited resources screening should aim to target high risk women and commenced at age 30 to 35 years and continue till about 60 years of age to reduce excessive expenditure in screening low risk women[20]. The mean age of 34 years in this study is in keeping with this recommendation. Majority (34%) of the patients in this study had 5 or more deliveries; this is similar to other studies done in Nigeria[6,16,22]. There were statistically significant associations between previous conception, previous child birth and increasing number of deliveries with CIN[22].

Wilson et al found that of 11 cases of dysplasia detected on colposcopy and confirmed by biopsy, eight had inflammatory cytology in the initial smears[25]. Inflammatory smears are also associated with multiple reproductive tract infections[26]. The high prevalence of inflammatory smears found in this study and other studies in Nigeria[6,12,13] is therefore not surprising because, as in other developing countries, reproductive tract infection is endemic. Patients with inflammatory smears, especially in those areas where reproductive tract infections are common, need to be thoroughly investigated and properly followed-up.

Among the dyskaryotic smears seen in this study LSIL was the most common (10.6%). This was different from what was obtained in Jos[11] andkano[22] but similar to what was obtained in Okene[16] where ASCUS was the most common (4.5%). Perhaps the type of population studied may have been responsible for the difference between our studies and that of Okene; the Okene study was community-based, while our own was hospital-based. Sociocultural differences may also have been responsible for the difference.

The prevalence of dyskaryosis in this study was more common in women who were symptomatic. It has been found that there is higher incidence of cervical dysplasia and malignancy in women who were symptomatic than in those who were asymptomatic[6]. The need

for cervical smears in women with symptoms of genital tract disease has been demonstrated clearly in this study.

The prevalence of abnormal cervical smear in this study is consistent with reports from other part of Nigeria and Africa. The relatively high frequency of dyskaryosis in this study lends credence to the need for us to widen our cervical screening coverage in order to achieve the highest possible coverage rate. This can be achieved through the use of public education by means of various media, women and religious organisations. Members of the community see health care workers as models, therefore their attitudes and actions are predictors of societal health behaviour.There is therefore a need for continuing education to improve uptake of these services by health professionals so as to serve as a motivating factor for the public. In the long term there is need for government to set up national cervical cancer screening programme as recommended by the CCCCSM.

REFERENCES

1. Anorlu RI. Viral causes of cervical cancer. New detection techniques available. World Health Organisation (WHO I997) .WorldMedical Journal1997, 43, 29–30
2. Anorlu RI. Tumours of the cervix uteri. In: Agboola A, Textbook of obstetrics and gynecology for medical students, 2nd edition, Heinemann educational books (Nig) plc. 2006;167-82
3. Kwame-Aryee R. Carcinoma of the cervix. In: Kwakume EY, EmuveyanEE(eds). Comprehensive gynecology in the tropics. 1st edition, Graphic packaging, Accra,2005: 412-428
4. Rafindadi AH, Ifenne DI, Shittu SO, Bako AU, Olasinde TA. A study of some aetiological factors in 41 cases of cancer of the cervix uteri in Zaria. Nigerian Quarterly Journal of Medicine1999, 9: 87–89.
5. Adelusola KA, Fadiran OA, Adesunkanmi ARK, Odesanmi WO. Breast cancer in Nigerian women in Ile-life. Nigerian Medical Practitioner1996, 31, 17–20.
6. Anorlu RI, Abdul-kareem FB, Abudu OO, Oyekan TO. Cervical cytology in an urban population in Lagos, Nigeria. J ObstetGynaecolo 2003. 23(3), 285–88

7. World Health Organisation (WHO) (1986). Control of cancer of cervix uteri. Bulletin World HeathOrganisation, 63,607–618.

8. Camilleri G, Blundell R. Preinvasive cervical disease and cervical carcinoma. Resarch J Med Sci, 2009:4-11

9. Edozien LC, Adewole IF. Cervical carcinoma in Nigeria: a need for early detection. African Journal of Medicine and Medical Sciences,1993. 22: 87–92.

10. Anorlu RI, Banjo AAF, Odoemelum C, Eghale ME. Abudu OO. Cervical cancer screening: level of awareness in women attending a primary healthcare facility in Lagos, Nigeria. Nigerian Postgraduate Medical Journal, 2000. 7:25–28.

11. Obafenwa JO, Sagay AS, Otubu JAM. Prevalence of cervical intraepithelial neoplasia. Tropical Journal of Obstetrics and Gynaecology1991.9:18–17.

12. Ayinde AE, Adewole IF, Babarinsa IA. Trends in cervical cancer screening in Ibadan, Nigeria: a 4-year review. West Afr J Med 1998, 17: 25–30.

13. Mohammed AZ, Galadanchi HS, Ochicha O, Omale AE, Jido TA. Cytopathological findings on cervical smears in Aminu Kano Teaching Hospital, Kano. Journal of Medical women's Association. 2003; 1(1): 51-53.

14. Okeke TA., Okafor U, Akpala CO. Epidemiological studies of cervical cancer screening programme population. Sahel Med J. 1999; 2: 30-33.

15. Ayinde AE, Adewole IF., Babarinsa I.A., Trends in Cervical Cancer Screening in Ibadan, Nigeria. A four year Review. West Afri J Med. 1998, 17(1): 25-30.

16. Peter F, Schnatz DO, Natalia V, Danielle H, Sriniva SR et al. The Prevalence of Cervical HPV and CytologicalAbnormalities in Association with ReproductiveFactors of Rural Nigerian Women. J of women's health 2008. 17(2): 279-85.

17. Biggs JB. Treatment of cervical intraepithelial Neoplasia. In: progress in Obstetrics and Gynaecology.Edingburh: Churchill Livingstone 1993; 359-375.

18. Thomas JO, Babarinsa IA, Ajayi IO, Fawole O, Ojemakinde KO, Omigbodun AO. Mobilization for cervical cancer screening: lessons from a poor-urban Yoruba community in Nigeria.Afr J Med Med Sci. 2005. 34(1):81-5.

19. Christina H, Jacquiline Sherris. Cervical cancer screening. In : Planning apprppriate cervical cancer prevention and programmes, 2nd edition, 2000: 11-13.

20. Miller AB, Nazeer S, Fonn S, Lukanow A et al. Report on concensus conference on cervical screening and management; 1999: 1-6

21. American College of Obstetricians and Gynecologists. Cervical Cytology Screening. ACOG Practice Bulletin No.45. Washington, DC: ACOG; 2003.

22. Audu BM, Elnafaty AU, Pindiga HU.Prevalence of Abnormal Cervical Smears from Sporadic Screening in a Gynaecological Clinic. The Nigerian Medical Practitioner Vol. 51 (6) 2007: pp. 114-118

23. Muia PN, Mwalali PN, Mbujua SE, Sekkade-Kigandu C, Mati JKG. Cervical cytology in a Kenyan rural population. J obstetGynaecol East and central Afr. 1984, 4:167-170

24. Morris M, Tortolero-Luna G, Malpica A, Baker VV, Cook E, Johnson E, Follen MM. Cervical intraepithelial neoplasia and cervical cancer. Obstetrics and Gynecology Clinics of North America,1996. 23: 347–410.

25. Wilson D, Robinson AJ, Kinghorn SA, Hicks DA. Implications of inflammatory changes on cervical cytology. British Medical Journal1990, 300: 638–640.

26. Parashari A, Singh V, Guptel MM., Satyanarayana L, Chattopadhya D., Sodhani PS () Significance of inflammatory smear. Acta PathologicaMicrobiologica et Immunologica Scandinavica, 1998. 103, 273–278.