

# Screening for Cervical Cancer: Experience from a University Hospital in North Western Nigeria (2007-2009)

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## ABSTRACT

**Background:** Cervical cancer is the most common gynecological cancer among women in Nigeria. The incidence is on the increase and poses a public health problem. The etiological agent is the human papilloma virus that is sexual transmitted. The cervical cancer incidence is related to lifestyle, poverty and sexual practices. Fortunately, it is a preventable disease as it is preceded by a pre-invasive phase that can be detected and treated. There is paucity of report in literature on cervical cancer screening in Sokoto North-West Nigeria. **Aim:** To determine the uptake, indications and results of cervical cancer screening in Usmanu Dan-fodiyo University Teaching Hospital (UDUTH), Sokoto. **Materials and Methods:** A 3-year descriptive study of the results of cervical cytology among women who attended the gynaecological out-patient clinic of UDUTH, Sokoto. **Results:** During the period of study, 126 cervical smears were taken and 96% (121/126) of them were considered adequate for cytological evaluation thus constituting the subjects of the study. The average annual uptake of cervical smear was 1.29%. The main indications for cytologic smears were abnormal uterine bleeding 33.9% (41/121) and suspected carcinoma of the cervix 28.1% (34/121). Cytologic study was positive for dysplastic cells in 7% (25/121) of cases. Ten percent (12/121) of them were high grade squamous intra-epithelial lesions while invasive carcinoma was seen in 3.3% (4/121) of the smears. **Conclusion:** Presence of abnormal cervical smear in 20% of the study subjects underscores the need for routine screening for cervical cancer. While organized national screening policy is awaited, opportunistic screening should be maximized.

**KEY WORDS:** Cervical cancer, cervical cytology, north-west Nigeria

## INTRODUCTION

Cervical cancer is the most common genital tract malignancy worldwide.<sup>[1-5]</sup> About 200,000 to 300,000 deaths are recorded annually as a result of cervical cancer and 500,000 new cases are diagnosed annually.<sup>[5,6]</sup> Most of the deaths occur in the developing countries where patients present with advanced stage of the disease and routine screening is either non-existent or limited.<sup>[6]</sup> In many centres in Nigeria, it is the second most common cancer (next to breast cancer) in women except in Kano where it is the leading female malignancy.<sup>[7,8]</sup> This is related to high prevalence of the risks factors (early sexual debut, poverty, high parity and multiple sexual partners) and limited availability/non-utilization of screening services which abound in Nigeria.<sup>[1,5,8]</sup>

In Sokoto, cervical cancer accounts for 61.5% of genital tract malignancies.<sup>[9]</sup> Interestingly, cervical cancer is largely

a preventable disease.<sup>[1-9]</sup> It is preceded by a detectable and preventable pre-invasive phase of about a period of 10-15 years.<sup>[1,6,8,10]</sup>

In 1941, Papanicolaou (Pap) described cervical mass screening for sexually active women for early detection of cervical cancer.<sup>[11]</sup> For many years, the conventional Pap smear has remained the common practice in cervical cancer screening.<sup>[1,10,11]</sup> In the developed countries, large scale screening programmes coupled with effective treatment of pre-invasive lesions have resulted in the decline in the incidence of invasive cervical cancer.<sup>[1-10]</sup> The reverse is the case in Nigeria where cervical cancer screening is mainly opportunistic.<sup>[10,12,13]</sup> Such opportunistic screening tends to reach groups at low risk, and miss those at high risk of developing the disease.<sup>[12,14]</sup> Presence of AIDS predisposes to cervical cancer by compromising immunological response to human papilloma viral infection.<sup>[15]</sup>

One of the limitations of Pap smear is that it only represents about 20% of the sample collected. This led to the

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development of liquid-based cytology which collects the whole sample from the sampling device in liquid medium thus reducing the proportion of inadequate smears while increasing the chances of detecting true dyskaryosis.<sup>[16]</sup> Liquid-based cytology is now the standard test used by the National Health System of the United Kingdom for cervical cancer screening programme.<sup>[16]</sup> HIV infection is strongly implicated in the genesis of pre-invasive and invasive cancer of the cervix with 99.7% detection rate in cancer of the cervix.<sup>[17]</sup> Since identification of HPV in women with high grade squamous intra-epithelial lesion (HGSIL) and low grade squamous intra-epithelial lesions (LGSIL) is pointless as vast majority will be positive, most published data refer to HPV testing as an adjunct to cytology in women with borderline lesion.<sup>[16,18,19]</sup> There are two commercially available vaccines for HPV, one a quadrivalent directed against HPV 6, 11, 16 and 18; and the second a bivalent directed against HPV 16 and 18. However, there are unanswered questions about these vaccines which include duration of their effects, when/how to administer booster doses and failure to protect against all the oncogenic HPV strains.<sup>[16]</sup>

This study is aimed at determining the uptake, indications and the results of cervical cytology in a tertiary health care centre in Sokoto, North-Western Nigeria.

## MATERIALS AND METHODS

This is a descriptive study involving cervical smears that were assessed at the Histo-pathology department of Usmanu Dan-fodio University Teaching Hospital (UDUTH), Sokoto, over a 3-year period (1<sup>st</sup> January 2007 to 31<sup>st</sup> December 2009).

The UDUTH, Sokoto, is a tertiary health institution located in the North-Western region of the country. The hospital has a residency programme in the sub-specialties like Obstetrics and Gynaecology, Surgery, Internal Medicine, public health, Histopathology, General Medicine. The hospital cases were referred from the health institutions in Sokoto metropolis and also from neighbouring states like Zamfara, Kebbi, and Niger states. It also obtains referrals from Niger republic, a country located in the northern frontiers of Nigeria.

The case notes of patients who had cervical cytology during the study period were retrieved from the medical records department. The records were traced to the Histopathology department where the cytology results were extracted and analyzed. Information obtained from the records included the patients' demographic data such as age, place of residence, occupation parity; indications for cytology, specimen adequacy and cytological diagnosis were recorded in a study proforma.

All analysis was conducted using SPSS version 15.0 (Chicago II, USA). Data were presented using relevant descriptive statistics such as percentages, means and standard deviations.

## RESULTS

During the 3-year study period, 126 cervical smears were taken for screening, out of which 5 (3.97%), were inadequate for cytological evaluation according to the Bethesda Criteria.<sup>[16]</sup> The patients' ages ranged from 20 years to 65 years with a mean of 38.5 (2.9) years. The annual uptake of cervical cytology as shown in Table 1, revealed an increasing trend. The main indications for screening as shown in Table 2 were abnormal uterine bleeding 41 (33.9%) and suspected cervical carcinoma 32 (26.5%). The Pap smear was only taken as a routine medical check-up in 26 subjects (21.5%). One of the subjects was pregnant. Cytologic smear was negative for abnormal cells in 69 cases (54.8%), while positive smears were present in 25 cases (19.8%). Invasive carcinoma was detected in 4 (3.2%) of the smears, while non-specific inflammatory lesions were seen in 17 (13.5%). *Trichomonas vaginalis* was present in 4% of the cases. Twelve (48%) of the positive smears were HGSIL (moderate and severe dysplasia), while the rest were LGSIL (mild dysplasia and changes due to HPV).

Table 3 shows the cytology result in relation to age.

HGSIL cytology was relatively common in the 30-49 years age group (10 out of 12), while LGSIL was more common in the 30-39 years group (8 out of 13). Non-specific inflammatory lesions were predominant in the 20-24 years group, while invasive carcinoma was more prevalent in 50-69 year age group (3 out of 4). One patient, aged 25 years had invasive carcinoma.

**Table 1: Annual uptake of cervical cytology**

Year	Total no. of patients registered in gynae. clinic	No. of cervical smears	Annual %
2007	2902	34	1.2
2008	3071	37	1.2
2009	3375	50	1.5
Total	9348	121	1.3

**Table 2: Indications for cervical smears**

Indications for cytologic smear	No.	%
Abnormal uterine bleeding	41	33.9
Suspected cervical cancer	32	26.5
Routine medical check-up	26	21.5
Post-coital bleeding	5	4.1
Un-stated	6	5.0
Cervicitis	4	3.3
Post-menopausal bleeding	3	2.5
Chronic PID	3	2.5
Chronic vaginal discharge	1	0.8
Total	121	100

PID – Pelvic inflammatory disease

Table 3: Results of cytologic smears

Age group	Negative smears	Positive smears (dysplasia)			Non-specific inflammatory lesions	Invasive lesion	<i>Trichomonas vaginalis</i>	Atrophic changes
		Mild	Moderate	Severe				
20-29	14	–	–	–	9	1	–	–
30-39	28	8	4	1	4	–	4	–
40-49	21	3	1	4	4	–	1	–
50-59	6	2	2	–	–	2	–	–
60-69	12	–	–	–	–	1	–	1
70-79	0	1	–	–	–	–	–	–
Total	69	13	7	5	17	4	5	1

## DISCUSSION

The average annual uptake of the Pap smear in this study (1.29%) is very low compared to other centres in Nigeria.<sup>[20,21]</sup> It may be due to ignorance and lack of awareness of the value of cervical cancer screening among the study population. However, awareness does not always translate to utilization as low utilization of cervical cytology services has been reported among health workers in the study population despite high level of awareness of the procedure.<sup>[13]</sup> Most of the indication for cervical cytology in this data was symptom based (79.4%). Routine cervical smear was performed in only 20.6% of the subjects in this study compared to 53.8% in a similar study in Ibadan.<sup>[21]</sup> All these observations underscore the need for organized national screening programme.

Despite this poor uptake of the Pap smears, the relatively high rate of positive cytology (19.8%) in this study, calls for concern. This figure is higher than that reported in Enugu (12.2%)<sup>[10]</sup> and Ibadan (9.7%).<sup>[22]</sup> It also doubled the worldwide estimate of 10%.<sup>[19]</sup> Even more disturbing is the presence of HGSIL in almost 50% of the abnormal smears and squamous cell carcinoma in 3.2% of the total smears. This can be attributed to the high prevalence of risk factors to cervical cancer (poverty, early marriage, early age of sexual debut, high parity and multiple sexual partners) in the study population.<sup>[9]</sup> In a study in Kuwait, high grade lesions were seen in only 0.2% and invasive disease in 0.1% of the population.<sup>[23]</sup> The detection of an invasive carcinoma in a 25-year old woman in this study, highlights the need for screening to begin as early as possible, at most 3 years after the initiation of sexual activity.<sup>[10]</sup>

The abnormal Pap smears in the age-range from 30 years to 45 years occurred in two-third of cases. It is not surprising because cervical cancer tends to be more prevalent within the age group of 50 years to 59 years in our centre.<sup>[9]</sup> Indeed it takes 10 years to 20 years for pre-invasive lesions to transform to malignant lesions.<sup>[1,6,8,10]</sup>

This study has demonstrated that pre-invasive lesions of cervical cancer are relatively common in the study population. However multi-centre study in the state involving a larger sample size will give better picture about the prevalent of the condition in state. The need for the

formulation and implementation of organized national screening programme cannot be over-emphasized. In the interim, opportunistic screening should be maximized.

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