A Hospital-Based Analytical Cross-Sectional Study to Assess the Clinical Profile of Patients Subjected for Cervical Cytology

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Abstract:

Aim: The aim of the present study was to assess the clinical profile of patients subjected for cervical cytology.

Methods: The present hospital-based analytical cross-sectional study was conducted at Department of Pathology for the period of 12 months. 200 patients were included in the study.

Results: In the present study, 90% were home-makers and 32% had higher education. 68% belonged to rural area and 52% were above poverty line. Stage-wise distribution of cervical cancer patients shows that a very small percentage of patients (12%) were diagnosed at early stage. Majority of the patients were diagnosed with Stage 2 (36%) or 3 (44%) disease. The findings of performance status reveal that about 70% of patients were able to carry out all normal activities without restriction. Moreover, only a very small proportion (<1%) were bedridden. History of hypertension, diabetes, heart disease, AIDS (HIV+ve), hepatitis (HBsAG+ve), asthma, and chronic pulmonary diseases was considered as the presence of comorbidity. Among 200 patients, 40 were found to have abnormal cervical cytology. Moreover, 160 smears were negative for any intra-epithelial lesion or malignancy, 12 (7.5%) showed normal cytological findings. 100 (62.5%) showed nonspecific inflammation, rest 10 (6.25%) had evidence of candida, bacterial, and Trichomonas infections. Diagnosis of atypical squamous cells of undetermined significance (ASC-US) was made in 10 (6.25%) cases. Atypical glandular cells (AGC) were seen in 3 (1.25%) cases, and 2 (2.5%) patients had a low-grade squamous intraepithelial lesion (LSIL) exhibiting koilocytic atypia in most of the smears.

Conclusion: Cervical cancer is a favorable site for an effective control programme with its ease to access and a long latent period of intraepithelial neoplasia which is easily recognizable by the Pap smear. Thus, there is a need for initiation of community screening and educational programs through awareness campaigns.

Keywords: Clinical Profile, Cancer Cervix Screening, Cervical Cytology, Histopathological Examination.

Introduction

Cancer is an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of the normal tissues and persists in the same excessive manner after cessation of the stimuli which evoked the change. [1] The burden of cancer is distributed unequally between developed and developing countries, with particular cancer types exhibiting different patterns of distribution. As a consequence of growing and ageing populations, developing countries are disproportionately affected by the increasing number of cancers.

It is estimated that by the year 2020 there will be almost 20 million new cases. Worryingly, it is not only in the number of new cases that will increase but also the proportion of new cases from the developing countries like India will also rise to

around 70%. [2] The most conspicuous feature of the distribution of cancers between the sexes is the male predominance of lung cancer. Among men, the five most common sites of cancers diagnosed in 2012 were lung, prostate, colorectum, stomach and liver. Among women, the five most common sites diagnosed were breast, colorectum, lung, cervix and stomach. Thus, cervical cancer is the fourth most common cancer among women worldwide. [3] One in every 5th woman in the world suffering from cervical cancer lives in India. [4]

Cervical cancer is a multi-etiology disease, and HPV infection alone is not a sufficient cause of cervical cancer. Most HPV infections regress rapidly without causing clinically significant disease. [5,6] Cofactors such as low socioeconomic

status, tobacco smoking, sexual and reproductive factors, HIV and other sexually transmitted diseases, long-term oral contraceptive use, certain micronutrient deficiencies and genetic susceptibility have been suggested as determinants. [7,8] The exact cause of cervical cancer remains unknown. However, it is now well recognized that cervical cancer is more common among women living in poor conditions, with low-income levels and lack of education. There are abundant studies on risk factors related with cervical cancer. In addition to human papillomavirus, there are various risk factors associated with cervical cancer such as early age at marriage, early age at first sexual intercourse, more number of sexual partners, high parity, and smoking. [9-12]

The aim of the present study was to assess the clinical profile of patients subjected for cervical cytology.

Materials and Methods

The present hospital-based analytical cross-sectional study was conducted at Department of Pathology, Narayan Medical College and hospital, Sasaram, Bihar India for the period of 12 months. 200 patients were included in the study.

Study Population

Women who gave consent for being part of the study. Samples of consented women were taken from the age of 30–65 (25 onwards with HIV) years old sexually active irrespective of their marital status and presented with abnormal vaginal discharge, post- menopausal bleeding, post-coital bleeding, multiple sexual partners, intermenstrual bleeding, unhealthy-looking cervix, a lesion that bleeds on touch, smokers, dyspareunia, pain in the lower abdomen.9,10

Women who are not willing to participate in the study, with known cases of cancer cervix, with previously treated cases of cancer cervix, pregnant women, inadequate material, and atrophic smears were not included in the present study.

Brief Procedure

Under the proper aseptic condition, after obtaining proper consent, the study participants were kept in a dorsal lithotomy position. In order to visualize the cervix, a Cusco's bivalve speculum was inserted through the vagina. Ayre's spatula's longer projection was inserted into the cervix close to the squamocolumnar junction and rotated 360°. The cellular substance thus obtained was immediately and gently smeared on a clean glass slide. In a Coplin jar, the glass slide was immediately placed and the smear was fixed with 95% ethyl alcohol. The smears were prepared, and they were stained using Papanicolaou's method. The New 2014 Bethesda system was used to analyze the smear's cytological data. A pilot-tested, face- validated structured semi-structured questionnaire was used to gather information. It was prepared based on the review of literature and discussion with experts on the subject.

Study Variables

Sociodemographic details (age, background, occupation, education, socioeconomic status, marital status); Age at menarche; Age at first pregnancy; Hygiene; Family history of cervical cancer; Chief complaint; Parity; Substance use; Use of contraceptives; History of multiple sexual partners; and HPV vaccination.

Statistical Analysis

Data generated were tested for completeness and were analyzed using the Statistical Package for Social Studies (SPSS) v25.0. The Chi- square test is performed to examine and compares the observed and expected results in the tested population.

Results

Table 1: Sociodemographic details

Characteristics	n (%) / Mean (SD)
Age in mean (SD)	36.4 (7.3)
Occupation	
Homemaker	180 (90)
Skilled worker	16 (8)
Unskilled worker	4 (2)
Education	
Illiterate	20 (10)
Primary	24 (12)
Middle	58 (29)
Higher	64 (32)
Graduate	34 (17)
Residence	
Urban	64 (32)
Rural	136 (68)
Socioeconomic status	

BPL	96 (48)
APL	104 (52)

In the present study, 90% were home-makers and 32% had higher education. 68% belonged to rural area and 52% were above poverty line.

Table 2: Clinical profile

Clinical profile	N%
Stage	
Stage I	24 (12)
Stage II	72 (36)
Stage III	88 (44)
Stage IV	16 (8)
Histology	
Squamous	180 (90)
Nonsquamous	20 (10)
Performance status (score)	
Normal, asymptomatic (0)	140 (70)
Symptomatic, ambulatory (1)	24 (12)
Symptomatic, limited work (2)	4 (2)
Symptomatic, in bed ($\geq$3)	2 (1)
Unknown	30 (15)
Comorbid condition	
Hypertension	30 (15)
Diabetes	10 (5)
Heart disease	4 (2)
AIDS/HIV+ve	6 (3)
Hepatitis/HBsAg+ve	4 (2)
Others	8 (4)

Stage-wise distribution of cervical cancer patients shows that a very small percentage of patients (12%) were diagnosed at early stage. Majority of the patients were diagnosed with Stage 2 (36%) or 3 (44%) disease. The findings of performance status reveal that about 70% of patients were able to carry out all normal activities without restriction.

Moreover, only a very small proportion (<1%) were bedridden. History of hypertension, diabetes, heart disease, AIDS (HIV+ve), hepatitis (HBsAG+ve), asthma, and chronic pulmonary diseases was considered as the presence of comorbidity.

Table 3: Categorization of cytodiagnosis

Characteristics	n (%)
NILM (n = 160)	
(a) Normal	12 (7.5)
(b) Inflammatory	
Bacteria	10 (6.25)
Candida	10 (6.25)
Trichomonas	2 (1.25)
Non-specific	100 (62.5)
ASCUS	10 (6.25)
AGC	2 (1.25)
LSIL	4 (2.5)

Among 200 patients, 40 were found to have abnormal cervical cytology. Moreover, 160 smears were negative for any intra-epithelial lesion or malignancy, 12 (7.5%) showed normal cytological findings. 100 (62.5%) showed nonspecific inflammation, rest 10 (6.25%) had evidence of candida, bacterial, and Trichomonas infections. Diagnosis of atypical squamous cells of undetermined significance (ASC-US) was made in

10 (6.25%) cases. Atypical glandular cells (AGC) were seen in 3 (1.25%) cases, and 2 (2.5%) patients had a low-grade squamous intraepithelial lesion (LSIL) exhibiting koilocytic atypia in most of the smears.

Discussion

In developing countries compared to developed countries cervical cancer is more prevalent. After

breast cancer, cervical cancer is the second most common cancer in India. [13] It is the fourth most prevalent form of cancer in women worldwide, it accounts for 6.9% of newly diagnosed cases with an estimated 34,2000 deaths and 60,4000 patients in 2020.14 According to the cervical cancer profile WHO, India contributes to approximately 6–29% of all cancers in women. In the last 5 years, less than 1 in 10 women have been screened for cervical cancer. [14]

In the present study, 90% were home-makers and 32% had higher education. 68% belonged to rural area and 52% were above poverty line. The median age of cervical cancer patients in our study was 54 years, which is similar (54.7 years) to the average age reported by Sankaranarayanan et al[8] in his study of 452 cervical cancer patients in Kerala. The average age of patients in our study was found to be slightly higher than average reported by other researchers in Western literature. [15] This older age indicates a relative lack of awareness and nonavailability of screening facilities for about cervical cancer in our country. [16,17]

Stage-wise distribution of cervical cancer patients shows that a very small percentage of patients (12%) were diagnosed at early stage. Similar stage-wise distribution has been reported by Nandakumar et al [17] in their population cancer registry-based study conducted in Bengaluru and Shrivastava et al. in their retrospective study of 6234 patients. [18] Majority of the patients were diagnosed with Stage 2 (36%) or 3 (44%) disease. The findings of performance status reveal that about 70% of patients were able to carry out all normal activities without restriction. Moreover, only a very small proportion (<1%) were bedridden. History of hypertension, diabetes, heart disease, AIDS (HIV+ve), hepatitis (HBsAG+ve), asthma, and chronic pulmonary diseases was considered as the presence of comorbidity. Among 200 patients, 40 were found to have abnormal cervical cytology. Moreover, 160 smears were negative for any intra-epithelial lesion or malignancy, 12 (7.5%) showed normal cytological findings. 100 (62.5%) showed nonspecific inflammation, rest 10 (6.25%) had evidence of candida, bacterial, and Trichomonas infections. Diagnosis of atypical squamous cells of undetermined significance (ASC-US) was made in 10 (6.25%) cases. Atypical glandular cells (AGC) were seen in 3 (1.25%) cases, and 2 (2.5%) patients had a low-grade squamous intraepithelial lesion (LSIL) exhibiting koilocytic atypia in most of the smears.

PL Sachan et al [19] conducted a study on a total of 1650 women who were sexually active and found that white discharge was the most common symptom (36.96%) followed by abdominal pain (25.63%) and irregular menses (12.78%) in their study. The most common presenting symptoms in our study were also white discharge from the vagina in 50% of cases followed by abdominal pain in 48.2% of cases, and irregular menstrual pattern in 16.8% of patients. However, the slight difference between both results may be due to different inclusion and exclusion criteria. Bal et al [20] conducted the study on 300 women and found the mean age of cases with a LSIL was 32.3 and those with a high-grade squamous intraepithelial lesion (HSIL) were 40.5 years. In our study also Among 26 patients with epithelial abnormality, the maximum positive cases were observed in ages between 30 and 40 years, i.e., 20/26 (76.9%) followed by 40–50, i.e., 4/26 (15.38%).

The possible reasons for the high incidence in the current study could be due to the lower educational and economic status, early marriage, increased fertility, and improper hygiene. As explained earlier participants with increased duration of sexual activity and more childbearing are associated with HPV infection and cause cervical cytology abnormalities and ultimately cancer cervix.

Conclusion

Cervical cancer is a favorable site for an effective control programme with its ease to access and a long latent period of intraepithelial neoplasia which is easily recognizable by the Pap smear. Thus, there is a need for initiation of community screening and educational programs through awareness campaigns. In India, there are very few studies describing profile of cancer patients visiting health-care facilities. This basic information on profile of patients can help to plan and ensure efficient utilization of hospital services in resource-poor countries like India. Further, the scope of studying sociodemographic factors is not limited to hospital services, and this information can also be utilized while making public health policies and implementation of cervical cancer control programs.

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