

## Cytopathological Study of Cervical Smear: A Hospital Based Retrospective Study

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### Abstract

**Background:** Cervical cancer is the most prevalent gynaecological cancer in developing nations and the main cause of mortality and morbidity among women worldwide. The Papanicolaou test is a simple and cost-effective cervical cancer screening method. The purpose of the present study was to examine the Pap smear for cytopathological evaluation in a tertiary care center.

**Materials and Methods:** A retrospective study was conducted at department of pathology, Viswabharathi Medical college & Hospital from June 2020 and May 2021. The Pap smears were obtained by using conventional technique and were evaluated using The Bethesda system (2014). A total of 200 cases were analyzed. The prevalence of epithelial abnormalities was calculated in percentages.

**Results:** Out of total 200 patients, 8 (4%) cases revealed epithelial abnormalities. The most frequent epithelial cell abnormality was Low grade Squamous Intraepithelial Lesion. The most common age group in this study was (31-40years)

**Conclusion:** In developing nations, cervical cancer is the most frequent gynaecological malignancy. The abnormal epithelial lining of the cervix can be detected by a simple screening test such as the cervical Papanicolaou smear (Pap).

**Keyword:** Pap smear, Bethesda System, Cervical Cancer, Low-Grade Squamous Intraepithelial Lesion.

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### Background

After breast, colorectal, and lung cancers, cervical cancer affects women the most commonly in the globe. With an estimated incidence of about 23.29 percent, India, the second most populated nation in the world, is responsible for about 25% of cervical cancer deaths [1]. In India, cervical cancer is the second leading cause of cancer in

women [2]. Cervical cancer screening is predicated on the idea that early identification may enable early treatment. It is well knowledge that cytology-based screening programmes have significantly decreased the incidence and death of invasive cervical cancer in various nations throughout the world [3]. The lack of

efficient screening systems is partly to blame for the high prevalence of cervical cancer in poor nations [3,4].

Reporting pap smears using the revised Bethesda System has consolidated multiple overlapping terminologies and established a standardised framework for laboratory reports, which includes a descriptive diagnosis and an evaluation of specimen adequacy [5]. The purpose of this study is to examine the pattern of pap smear cytology using the revised Bethesda System and to determine the incidence of epithelial cell abnormalities.

### Materials and Methods

This was a retrospective study done in the department of Pathology, Viswabharathi Medical College, Kurnool for a period of one year from June 2020 to May 2021. This study was done after getting approval from the Institutional ethics committee. All cases

received in the department of pathology during that period were included in the study. A total of 200 cases were reviewed.

After inserting a bivalve vaginal speculum, an Ayers' spatula was used in each case to remove the cervical smear from the endocervix and the squamous-columnar junction. These samples were spread out on glass slides; one was preserved with 100% methanol, while the other was sent to the pathology department for analysis. After fixing, Pap, H&E, and Giemsa stains were applied to all cervical smears. The samples were analysed and reported after staining. The Bethesda system was used for the cytopathological analysis (2014). All the data were manually collected and subsequently analyzed.

### Results

A total of 200 pap smears were analyzed during the study period.

**Table 1: Age distribution of participants**

Age of the woman	Frequency (n)	Percentage (%)
<20 years	2	1
21-30	44	22
31-40	70	35
41-50	54	27
51-60	26	13
>60 years	4	2

The age of the patients ranged from 18 to 76 years. The majority (84.7%) of the pap smears were from the age group of 31-40 years, followed by 41-50 years.

**Table 2: Symptoms of the participants**

Chief complaints	Frequency (n)	Percentage (%)
PV discharge	90	45
Routine screening	52	26
pain	28	14
Postmenopausal bleeding	6	3
other	24	12

The chief complaint for attending the OPD services was PV discharge (45%). Routine screening was also an important reason (26%) for attending the OPD services. Postmenopausal bleeding was another reason observed in 3% of total women. The pain was another important symptom, seen in 14% of total women. 12 % of women attended the OPD services for another reason.

**Table 3: Evaluation of cervical Pap smear and pattern of ECA**

Cases	Frequency (n)	Percentage (%)
Total cases	200	100
ASC-US	2	1
LSIL	4	2
HSIL	1	0.5
SCC	1	0.5
NILM	192	96

Out of 200 Pap smears, 192 (96%) smears were negative for intraepithelial lesion/malignancy (NILM), and 8 (4%) Pap smears showed features of ECA. Among these 8 cases, maximum cases (4, 02%) were of Low-grade squamous intraepithelial cell lesion (LSIL). There were 2 cases (1%) of atypical squamous cell of undetermined significance (ASC-US), 1 case (0.5%) of high-grade squamous intraepithelial cell lesion (HSIL), and 1 case of squamous cell carcinoma (SCC)

### Discussion

Cervical cancer and breast cancer are the leading cause of mortality in developing countries like India [6]. Cervical cancer is the most common cancer for which a sensitive screening Pap test and screening guidelines are available. Many research studies have demonstrated that in the population screened with a cervical pap test, the rate of invasive carcinoma cervix is significantly lower [7,8].

In the present study, symptoms suggestive of reproductive tract infections were reported by the females, which included abnormal vaginal discharge. This finding is in agreement with the previous study [9].

In different parts of India, the prevalence of abnormal epithelial cells ranges from 1.32 to 11.95 percent, with our study being 4 percent. The causes for this discrepancy may be related to variations in the diagnosis' inclusion criteria, the quality controls applied, the sample size, and inherent variations in the population under study, such as the prevalence of risk factors. In comparison to us, studies by Mulay et al. [10], Sadhana Kothari et al. [11], and

Geetha Katheit et al. [12] reveal a lower rate.

The research's most prevalent age range was 31 to 40 years old and Bamanikar et al study. [13] found comparable results. LSIL was the most prevalent epithelial abnormality in our study when all lesions were taken into account. According to a research by Gupta et al. [14], LSIL is the most typical ECA.

### Conclusion

Suitable procedures for early detection of cervical cancer, such as Pap smear testing, should be made more widely available. The Pap smear is a simple, inexpensive, safe, and practical diagnostic tool for early diagnosis of cervical cancer in high-risk populations, and it should be made a routine screening technique.

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