

## Cervical Pap smear: A retrospective study on symptomatic women in a tertiary care hospital.

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### Abstract

**Background:** Cancer of the cervix is an increasing health problem and an important cause of mortality in women worldwide. Cervical cancer ranks 2<sup>nd</sup> most common visceral cancer in females and stands 3<sup>rd</sup> in causing death in women in the world. Pap smear is used as primary screening test for detection of early cervical epithelial changes, cervical epithelial neoplasia and early stage of invasive cervical cancer. Recommendations for Pap smear generally starts around 21 years of age or within 3 years of onset of sexual activity and thereafter every 3 years

**Methods:** This retrospective study was conducted on 100 patients to evaluate all previously reported cervical smears in the Department of Pathology GMC Kathua, who came with different gynaecological complaints in Gynaecological OPD at GMC Kathua, J&K. Smears were obtained with the help of Ayre's spatula and cytobrush to collect specimen from transformation zone. The cellular material is quickly spread on 2 clean glass slides and fixed immediately by immersing them in copulin jar containing 95% ethyl alcohol. The smears were stained with Papanicolaou stain. After mounting the slides with DPX and examined under light microscope, they are reported by pathologists according to Revised Bethesda System.

**Conclusion:** Pap smear test is a simple, inexpensive, non-invasive and an OPD performed to detect various premalignant and malignant lesions of cervix. By conducting health camps, increasing awareness programmes and performing Pap smears, the incidence of cervical cancer can be greatly reduced.

**Keywords:** Pap smear, cervix, screening, cervical cancer

### Introduction

Cancer of the cervix is an increasing health problem and an important cause of mortality in women worldwide. Cervical cancer ranks 2<sup>nd</sup> most common

visceral cancer in females and stands 3<sup>rd</sup> in causing death in women {breast and lung} in the world.<sup>1</sup> Due to the social and economic conditions, it accounts for 83% of mortality in developing countries.<sup>2</sup> Cervical cancer is a preventable disease as it has long preinvasive

stage. Its early detection and treatment can reduce the morbidity by 70% and mortality by 80%. For that, a robust screening has to be implemented.

George Papanicolaou had described cytological changes in cervical smears in 1928.<sup>3</sup> PAP smear is used as primary screening test for detection of early cervical epithelial changes, cervical epithelial neoplasia and early stage of invasive cervical cancer. Recommendations for PAP smear generally starts around 21 years of age or within 3 years of onset of sexual activity and thereafter every 3 years. After 30 years of age with normal PAP smear, repeat screening every 5 years. When PAP test is abnormal a colposcopy examination of vagina is performed and cervical biopsy is needed to diagnose and prevent further progression to cervical cancer.

## Materials and Methods

This retrospective study was conducted on 100 patients to evaluate all previously reported cervical smears in the Department of Pathology GMC Kathua, who came with different gynaecological complaints in Gynaecological OPD at GMC Kathua, J&K from July 2019 to June 2020. We took ethical clearance to do this retrospective study.

### Inclusion criteria:

1. Women between 21-70 years of age.

### Exclusion criteria:

1. Women below 21 years of age
2. Women without sexual exposure
3. Pregnant women
4. Women above 70 years of age

### Procedure:

Smears were obtained with the help of Ayre's spatula and cytobrush to collect specimen from transformation zone. The cellular material is quickly spread on 2 clean glass slides and fixed immediately by immersing them in copulin jar containing 95% ethyl alcohol. The smears were stained with Papanicolaou stain. After mounting the slides with DPX and examined under light microscope, they are reported by pathologists according to Revised Bethesda System, 2014.

### Statistical analysis:

Data was analysed by SPSS version 16 and descriptive statistics were presented as frequencies and percentages.

## Results and Discussion

In this study we analysed 100 PAP smears reported in department of Pathology Government Medical College Kathua. Most of the patients (33%) fall in the category of 31- 40 years of age, followed by 28% in 21- 30 years of age, 21% in 41-50 years of age, (12%) in 51-60 years of age and 6% fall in 61-70 years of age group.

Among 100 women, the most common presenting chief complaint was discharge 33%, followed by pain lower abdomen, 19% spotting 15%, pruritis 14%, menorrhagia 8%, irregular periods 6%, prolapse 2%, burning micturition 3%. Gross appearance of cervix as per speculum was analysed and cervical erosion was the most common finding with 47%, followed by hypertrophy 37% and bleeding on touch 16%. Out of 100 cases 4% were reported as unsatisfactory, either due to inadequate material or haemorrhagic smears. NILM comprise maximum number of cases were reported as epithelial cell abnormality. Out of 82%, reported as NILM, 51% show normal cytological findings, 27% were inflammatory, 2% were of bacterial vaginosis, 1% of candidiasis and 1% show atrophic changes. Among 14% reported as ECA, ASCUS was most common finding with 6% cases, followed by LSIL with 4% cases, HSIL with 2% cases and squamous cell carcinoma with 2% cases.

In our study we have taken 100 PAP smears from the women presenting with different gynaecological complaints to gynaecology OPD of GMC Kathua in the age group of 21-70 years and analysed their smears. In our study maximum number of women (33%) were between 31- 40 years of age and minimum (6%) patients were in the age group of 61-70 years. Similar observations were made by other studies.<sup>4,5,6,7</sup> Among the presenting symptoms, whitish discharge per vaginum (33%) was the most common finding as was also reported in similar studies.<sup>7,8,9</sup> In our study, per speculum examination of cervix is performed and cervical erosion (45%) was the most common finding followed by hypertrophied cervix (34%). This observation is also found in other studies.<sup>7,10</sup>

PAP smears in our study were broadly categorized as Unsatisfactory (4%), NILM (82%) and ECA (14%).

Unsatisfactory smears encompass smears having insufficient squamous component and obscuring elements covering more than 75% of epithelial cells. The unsatisfactory smears when compared to other studies show - Bukhari et al (1.8%) 11 were lower than our study, Bal et al (4.2%)<sup>12</sup> and Kapila et al (3.9%)<sup>13</sup> show similar percentage, whereas Rathore SB et al (7.4%)<sup>14</sup> and Kalyani R et al<sup>15</sup> show higher percentage of unsatisfactory smears in their studies.

This study determines 82% of NILM as the most common category. This was in accordance with other studies in literature (5,16,17,18,19). Among NILM; nonspecific finding inflammation was the most common finding (25%) and atrophic vaginal smears were the least (1%) common finding. Similar observations were made in other reported studies (7,9) also. ECA category comprise (14%) in our study. The ECA (epithelial cell abnormality) include ASCUS, AGUS, LSIL, HSIL and carcinoma. The ECA rate in various other studies range between 1.2% to 16.60%.<sup>12,20,21,22,23,24,25</sup> The most common finding in our study was found to be ASCUS, reported in ECA category, followed by LSIL -5%, HSIL -2% and squamous cell carcinoma -1%. In other studies, also ASCUS is the most commonly reported ECA. Frank malignancy was reported 1% in our study and this was comparable to other studies which reported malignancy in 0.7% of cases.<sup>26</sup> In our study the ASCUS rate is bit higher. It may be due to lack of awareness programme for Pap smear screening and people reported to hospital only when they have symptoms or are in advanced stage of disease.

Our study on Pap smear were able to classify most of inflammatory and malignant lesions and has shown the importance of Pap smear test in screening cervical cancer.

**TABLE 1: Age wise distribution of patients.**

AGE IN YEARS	NO. OF PATIENTS
21 -30	28
31-40	33
41-50	21
51-60	12
61-70	6
<b>TOTAL</b>	<b>100</b>

**TABLE 2: Distribution of presenting chief complaints of patients**

CHIEF COMPLAINTS	NO. OF PATIENTS
SPOTTING	15
WHITISH DISCHARGE	33
PAIN LOWER ABDOMEN	19
PRURITIS	14
MENORRHAGIA	8
BURNING MICTURATION	3
IRREGULAR PERIODS	6
PROLAPSE	2
<b>TOTAL</b>	<b>100</b>

**TABLE 3: PATTERN OF DIAGNOSIS OF PAP SMEAR CYTOLOGY**

DIAGNOSIS	NO. OF PATIENTS
UNSATISFACTORY	4
NILM	NORMAL -51 INFLAMMATORY - 27 VAGINOSIS - 2 CANDIDA -1 ATROPHIC - 1
ECA	14

**TABLE 4: PATTERN OF ECA IN PAP SMEAR CYTOLOGY**

CYTODIAGNOSIS	NO. OF PATIENTS
ASCUS	6
LSIL	4
HSIL	2
MALIGNANCY	2
<b>TOTAL</b>	<b>14</b>

## Conclusion

Pap Smear test is a simple, inexpensive, non -invasive and an OPD performed to detect various premalignant and malignant lesions of cervix. By conducting health camps, increasing awareness programmes and performing Pap smears, the incidence of cervical cancer can be greatly reduced.<sup>26,27</sup>

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