

# Study and Analysis of Two Hundred Cervical PAP Smears in Our Hospital

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## ABSTRACT

**Introduction:** Cervical cancer is one of the major cause of mortality among women worldwide. So the present research aimed to study and analyze 200 pap smear reports from women presenting with various Gynaecological indications.

**Material and Methods:** Study is carried out by taking 200 Papsmears from patients attending Gynaecology OPD at Sri Padmavathi Medical College for women, SVIMS, Tirupati from 20.07.2014 to 20.12.2015. Pap smears were taken from patients between ages 25 to 70years presenting with different Gynaecological complaints and as a routine beyond the age of 45 years using Ayres Spatula. Smears were reported as per the 2001 Bethesda system.

**Results:** Of the 200 Pap smears taken 134 smears were inflammatory. Fifteen smears showed low grade squamous intraepithelial lesion(LSIL), 13 smears showed mild to moderate dysplasia, 12 smears showed high grade squamous intraepithelial lesion(HSIL). Among routine Pap smears 8 were negative for malignancy, 2 smears showed squamous cell carcinoma after radiotherapy for carcinoma cervix.

**Conclusion:** Pap smear is easy and economical screening method to detect premalignant and malignant lesions of cervix which help in proper treatment.

**Keywords:** Pap smear, HSIL – High grade intra epithelial lesion, LSIL – Low grade intraepithelial lesion, ASCUS – Atypical squamous cells of undetermined significance, Squamous cells carcinoma, Malignant smears.

## INTRODUCTION

About one million deaths amongst world's women population are attributed to cancer cervix every year. Cervical cancer has taken a second place amongst malignancies that affects women, first leading is breast cancer.<sup>1</sup> If diagnosed and treated early morbidity may be reduced by 70% and mortality by 80%.

The Papanicolaou test also known as Pap test, Pap smear, cervical smear or smear test is a screening method used to detect potentially precancerous and cancerous processes in the cervix. Greek doctor Georgios Papanikolaou invented this test and it was named after him.<sup>2</sup>

Pap smear test is performed by opening the vaginal canal with cuscus speculum and collecting cells at the outer opening of the cervix i.e. at the transformation zone<sup>3</sup>, from posterior vaginal wall and endocervical canal. Then the collected cells are examined under a microscope. The test mainly meant to detect precancerous conditions like cervical intraepithelial neoplasia(CIN) or cervical dysplasia, squamous intraepithelial lesion system(SIL) etc.<sup>4</sup> Pap smear test is a effective, cost effective and widely used method for early detection of pre-cancer and cervical cancer.

Usually Pap smear screening test is recommended starting around 21 years of age until the age of 65 years. Can be repeated

at three years interval. In case of abnormal Pap smear report, depending on the type of abnormality the test may need to be repeated in six to twelve months. More sensitive and specific investigations like colposcopy guided cervical biopsy etc are needed to diagnose and prevent further progression to cervical cancer.<sup>5</sup>

The aim of the study was to study and analyze the pap smear reports and planning the treatment of patients accordingly.

## MATERIAL AND METHODS

This study was carried out in Gynaecology OPD at Sri Padmavathi Medical College(W) SVIMS, Tirupati, Andhra Pradesh, India from 20.07.2014 to 20.12.2015. Around 200 pap smears were taken from women between ages of 25 to 70 years presenting with different Gynaecological complaints and as a routine beyond the age of 45 years by using Ayres Spatula. Smears were reported as per the Bethesda system. We took ethical clearance to do this retrospective study.

### Inclusion criteria

- Women between 25 to 70 years of age with sexual history.

### Exclusion criteria

- Women below 25 years.
- Women without sexual exposure.
- Women above 70 years.

### Procedure

Pap smears are taken by using Ayres Spatula.

- The broad end of spatula was placed on the Cervix and rotated through 360° and the collected material was spread over a glass slide.
- The oblong relabelled narrow end of spatula was used to take smear from posterior vaginal fornix and spreaded over a second glass slide.
- The Endo cervical sample was collected using a Cyto brush and was spread over labelled third glass slide.

All the slides were labelled and immediately transferred to 95% Ethyl alcohol (Transport Medium) and sent to Pathology Department for Cytological study.

Evaluation was done by Cytology using Bethesda Classification.<sup>6</sup>

- Within normal limits
- Infection (specify organism)

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- Reactive/repairative changes
- Atypical squamous cells of undetermined significance (ASCUS)
- Atypical glandular cells of undetermined significance (AGUS)
- Low Grade Squamous intraepithelial invasion (LSIL)
- High Grade Squamous intraepithelial invasion (HSIL)
- Invasive carcinoma

#### Procedure and Follow Up

Pap smear was advisable after 21 years in women having sexual history.<sup>7</sup> Can be repeated in every 3 to 5 years if results are normal. In case of abnormal results more frequent repetition of tests like in every 6 months to 1 year are needed.

High risk group were subjected to Human Papilloma virus (HPV) DNA Testing. Negative procedure value of one HPV DNA testing and two negative cytology test was 100%.

False negative tests can be < 1% after three consecutive negative tests.

False negative reports can be due to

- Inadequacy of Sample
- Blood stained Sample
- Poor Staining
- Misinterpretation by Cytologist.

In our study age of patient, presenting symptoms, reports of

cytology were observed and analysed.

#### STATISTICAL ANALYSIS

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

#### RESULTS

In our study we analysed 200 Pap smears taken from women presenting to Gynecology OPD of Sri Padmavathi Medical College (W), SVIMS, Tirupati between 25 to 70 years presenting with different Gynaecological complaints and as routine beyond the age of 45 years.

In our study we have taken 200 women, in them 54 were between 25 to 35 years, 50 women were between 36 to 45 years, 68 women were between 46 to 55 years, women between 56 to 65 years were 23 and 5 women were above 65 years (table-1).

Among the 200 women undergoing Pap smear tests, 60 women presented with chronic white discharge. Forty six women underwent Pap smear test as part of routine gynaecological examination. Thirty one women presented with unhealthy cervix. Fourteen women underwent Pap smear test as part of post radio therapy for cervical cancer follow up. Postmenopausal women were 13. Eleven women were oral contraceptive pills users. Ten women presented with pelvic inflammatory disease. Seven women presented with post hysterectomy chronic white discharge. Four women had abnormal uterine bleeding and four women presented with intermenstrual spotting (table-2).

Among the 200 Pap smear reports analyzed, 134(67%) reports showed inflammatory smears. Fifteen smears were given as Low grade squamous intraepithelial lesion (LSIL). Mild to moderate dysplasia was seen in 13(6.5%) smears. High grade squamous intraepithelial lesion (HSIL) was seen in 12(6%) smears. Possibility of malignancy was ruled out in eight smears. Bacterial vaginosis was seen in 6(3%) smears. Post hysterectomy vault smears with normal reports were five. Atypical squamous cells of undetermined significance (ASCUS) was seen in 5(2.5%) smears. Squamous cell carcinoma was diagnosed in two(1%) smears (table-3).

#### DISCUSSION

It is accepted worldwide that early detection of precancerous lesions of cervix can be done by cytological examination of cervix by Pap smears. If not diagnosed and treated early, these precancerous lesions are likely to progress to invasive Cancers. It is proven that the cytological screening programs conducted in advanced countries played a major role in reducing mortality and morbidity due to Cancer Cervix.

Age in years	No of patients
25 - 35	54
36 - 45	50
46 - 55	68
56 - 65	23
>65	05
Total	200

**Table-1:** Distribution of patients according to age

Reasons for performing Pap smears	No of patients
Patients with chronic white discharge	60
Routine Pap smear	46
Unhealthy cervix	31
Post radio therapy follow up	14
Post menopause	13
OC pill users	11
Pelvic inflammatory disease	10
Post hysterectomy chronic white discharge	7
Abnormal uterine bleeding	4
Intermenstrual spotting	4

**Table-2:** Reasons for performing PAP smears

Pap smear analysis reports	No of patients	Percentage
Inflammatory smear	134	67%
Low grade squamous intraepithelial lesion (LSIL)	15	7.5%
Mild to moderate dysplasia	13	6.5%
High grade squamous intraepithelial lesion (HSIL)	12	6%
No evidence of malignancy or normal	08	4%
Bacterial vaginosis	06	3%
Post Hysterectomy vault smear normal report	05	2.5%
Atypical squamous cells of undetermined significance (ASCUS)	05	2.5%
Squamous cell carcinoma	02	1%
Total	200	100%

**Table-3:** PAP smear analysis reports

In our study we have taken 200 Pap smears taken from women presenting to Gynecology OPD of Sri Padmavathi Medical College(W), SVIMS, Tirupati between 25 to 70 years presenting with different Gynaecological complaints and as routine beyond the age of 45 years. In study conducted by Sunita et al<sup>8</sup> 560 Pap smear reports were analysed. Whereas in study conducted by Mandakini et al<sup>9</sup> 995 Pap smear reports were analysed.

In our study maximum number of women were between 45 to 55 years age group (34%). In study conducted by Sunita et al<sup>8</sup> maximum number of women were between 31 to 40 years age group (32.68%). In study conducted by Mandakini et al<sup>9</sup> between 15 to 30 years maximum number of women were studied.

In our study abnormal Pap smear reports were 187(93.5%), whereas in study conducted by Sunita et al<sup>8</sup> 433(77.32%) reports were abnormal. In study conducted by Mandakini et al<sup>9</sup> abnormal Pap smear reports were 689(69.2%).

Inflammatory smear reports were 134(67%) in our study, whereas in study conducted by Sunita et al<sup>8</sup> 403(71.96%) reports were inflammatory and in study conducted by Mandakini et al<sup>9</sup> inflammatory Pap smear reports were 572(57.5%).

Smears showing ASCUS (Atypical squamous cells of undetermined significance) were 5(2.5%) in our study. In study conducted by Sunita et al<sup>8</sup> 13(2.3%) reports showed ASCUS and in study conducted by Mandakini et al<sup>9</sup> reports showing ASCUS were 41(4.1%).

Smears showing LSIL (Low grade squamous intraepithelial lesion ) were 15(7.5%) in our study. In study conducted by Sunita et al<sup>8</sup> 11(1.9%) reports gave LSIL and in study conducted by Mandakini et al<sup>9</sup> reports showing LSIL were 41(0.1%).

In our study HSIL (High grade squamous intraepithelial lesion ) reports were 12(6%), whereas in study conducted by Sunita et al<sup>8</sup> 2(0.3%) reports gave HSIL. In study conducted by Mandakini et al<sup>9</sup> HSIL reports were 1(0.1%).

Smears showing squamous cell carcinoma were 2(1%) in our study. In study conducted by Sunita et al<sup>8</sup> 3(0.5%) reports gave squamous cell carcinoma and in study conducted by Mandakini et al<sup>9</sup> reports showing squamous cell carcinoma were 7(0.7%).

Though having few limitations in performing rural areas<sup>10</sup>, reports in our study like many other studies has shown the importance of Pap smear test in screening cervical cancer. By conducting health camps, increasing health awareness and performing Pap smear screening programmes the incidence of cervical carcinoma can be decreased.<sup>11,12</sup>

## CONCLUSION

Pap smear tests are inexpensive and affordable by the patients. This Procedure doesn't need experts and specialists for collection of smear. Early detection of possibility of malignancy helps in prompt treatment at early stage and prolongation of life expectancy of many women and reduce the mortality and morbidity of cancer cervix. Till today Pap smear test is the most useful screening procedure for cervical cancer.

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