

# Adequacy of PAP Smear in Females of Reproductive Age and Perimenopausal Age

Brajkishore Pandey<sup>1</sup>

## ABSTRACT

**Introduction:** The purpose of the Papanicolou (Pap) smear in the early detection and prevention of cervical cancer is well proved. However, due to lack of awareness still many women fail to undertake this test. To address the usefulness and awareness issue, we assessed the feasibility and adequacy of Pap smears in females of reproductive age and perimenopausal age. Cervical cancer is the second most severe cancer affecting women globally and mortality is not only affecting India but also the other developing nations. This study aimed to study the cervical cytology and its pattern in patients from reproductive age group and perimenopausal age group in Gynaec Outpatient Department of MGM medical college and hospital in Jamshedpur.

**Material and methods:** The procedure of clinical Pap smear includes extraction of cells from squamocolumnar junction by sweeping and then the smear was spread over glass slide and it was dipped in a small container with fixative (95% ethyl alcohol). Later on, the slides were stained (Pap stain) and observed for the cytological study according to Bethesda scoring system, 2001 for detection of cervical cancer in patients.

**Results:** Majority of the patients presented with single or combination of symptoms like white discharge per vaginum and lower abdominal pain or both. The samples extracted and evaluated from the patients through the Pap smears were put according to Bethesda scoring system, 2001; where it was found that Non-specific inflammation was 76.417%, normal cervical cytology was 14.153%, LSIL (Low grade intraepithelial lesion) was 3.77% and inadequate/unsatisfactory was 5.660%.

**Conclusion:** Pap smear testing related to cervical cancer presence drastically reduces in morbidity and mortality through early detection, diagnosis and management of cervical cancer. This cytological testing is one of the merest tools available to find the occurrence of cervical cancer.

**Keywords:** Cervical Cytology, Papanicolaou Smear, Reproductive Age Women, Perimenopausal Age Women, Cervical Cancer.

## INTRODUCTION

In all the cancer which affecting human races, the cervical cancer is the most common and stands second most severe cancer affecting women globally and mortality is not only affecting India but also the other developing nations.<sup>1-4</sup> Over the age of 45 in women, cervical cancer occurrence is 60% whereas over 65 ages the occurrence percentage is 20% approximately.<sup>5</sup>

The risk of cervical carcinoma increases at early marriage scenario, where the early childbearing increases the

tendency to acquired malignant changes of cervix. In early age relationship also an independent risk factor. Infection with HPV (Human Papilloma Virus) plays as important cervical carcinoma contributor.<sup>6</sup> Pap smear testing related to cervical cancer presence drastically reduces in morbidity and mortality through early detection, diagnosis and management of cervical cancer. This cytological testing is one of the merest tools available to find the occurrence of cervical cancer. In 1940s, Georgios Papanicolaou invented this test. Pap smear can be performed either by conventional approach or through use of preservative. From transformation zone the cells are selected through use of spatula and are directly examined under microscope in conventional method whereas the latest approach is through use of preservative for the slide after spreading the cells on slide and then examining the slide under microscope. Both the approaches are equality reliable and mostly used methods for detecting changes in cervical cytology.<sup>7-9</sup> Patients with abnormal Pap smear are subjected to colposcopy or colposcopic guided biopsy accordingly. This study focused on usefulness of Pap smear in females of reproductive age and perimenopausal age coming to outpatient department of MGM medical college and hospital in Jamshedpur.

## MATERIAL AND METHODS

The observational study was conducted on patients coming with various gynaecological symptoms from the reproductive age group and perimenopausal age groups to outpatient department of our institute (MGM medical college and hospital). There were many of the females who came for Pap smear test due to increased awareness and they were included in our study as well. The briefing of the procedure and its importance were explained to the patients in details before the test and they were suggested for regular visit and follow-ups as based on the test results.

The procedure of the Pap smear includes placing the patients in lithotomy position comfortably and introducing speculum to retract posterior vaginal wall and anterior vaginal wall

Lecturer, Department of Pathology, MGM Medical College and Hospital, Jamshedpur, Kolhan University, Jharkhand, India

**Corresponding author:** Dr. Brajkishore Pandey, P-1014, Supertech Icon, Nyay Khand-1, Indirapuram, Ghaziabad-201014. Utter Pradesh, India

**How to cite this article:** Brajkishore Pandey. Adequacy of PAP smear in females of reproductive age and perimenopausal age. International Journal of Contemporary Medical Research 2019;6(3):C5-C7.

**DOI:** <http://dx.doi.org/10.21276/ijcmr.2019.6.3.50>

Sl. No.	Age (Years)	Number of Patients	Percentage (%)
1	15-25	22	41.509
2	26-36	16	30.189
3	37-47	11	20.755
4	48-53	4	7.547
Total	Age range: 15-53 years	53	100

**Table-1:** Age-Wise Distribution of the Cases

Diagnosis	Percentage (%)
Non-specific inflammation	76.417
Normal	14.153
LSIL	3.77
Inadequate/ Unsatisfactory	5.660
Total	100

\*LSIL: Low grade squamous intraepithelial lesion

**Table-2:** Pap Smear Finding according to Bethesda Classification

was retracted by anterior vaginal wall retractor. Usages of antiseptic solution for cleaning were avoided. Wooden spatula was utilized to take cells from squamocolumnar junction by sweeping and then the smear was spread over glass slide and it was dipped in a small container with fixative (95% ethyl alcohol). Later on, the slides were stained (Pap stain) and observed for the cytological study according to Bethesda scoring system, 2001.

## RESULTS

The observational study includes data of Pap smear taken from 53 patients during the time period of Jan 2018 to Sep 2018. The patients were included for the study ranges from age of 15 years to 53 years belonged to both reproductive and primenopausal age group. Specifically, the reproductive age group was (15-45 years) and the second group was of perimenopausal age (46 - 53 years). The data were enlisted in table- 1.

Majority of the patients presented with single or combination of symptoms like white discharge per vaginam and lower abdominal pain or both. The sample taken from the patients through the Pap smears were investigated and diagnosis were put according to Bethesda scoring system, 2001; where Non-specific inflammation showed 76.417%, normal cervical cytology was 14.153%, LSIL((Low grade intraepithelial lesion) was 3.77% and inadequate/ unsatisfactory was 5.660%. The data were showed in detailed in table-2.

## DISCUSSION

The most important screening tool for identifying the cervical carcinoma is Pap smear. Cervical cancer testing and screening is important for women's health and the recent subject of debate is how and when. According to recent guidelines of American Society of Obstetricians and Gynecologists (ACOG) suggests that women should choose to go for Pap test every years from age of 21 but the frequency of test can be decreased after the age of 30 like every three years, only if patients have previous three Pap test normal

reports in continuation. The recommendation of this test refers to all women keeping their safety in consideration but there are some risk factors for cervical cancer that may make it prudent to have more frequent Pap smears test which includes any previous family history of cervical cancer, cervical cancer diagnosis or precancerous cells detection in any previous Pap smear test, HIV (human immunodeficiency virus) infection, having down immunity, sexually transmitted infections, smoking, exposure to diethylstilbestrol (DES) before birth.

In this study, majority of the women patients were of reproductive age group. Only, few patients belonged to perimenopausal age groups. Pap smear is routinely advised to the female's right from the reproductive years. The patients (99.3%) belonged to negative (-ve) for intraepithelial lesion/ malignancy group comparable to a study conducted by Manjit et al.<sup>10</sup> and in another investigation performed by Pudasaini S et al and Bamanikar S A et al showed NILM (Negative for intraepithelial lesion/malignancy) to be around 87% - 89%.<sup>11,12</sup> Out of NILM group 76.417% showed non-specific inflammation; 14.153% showed normal cytology; and inadequate/ unsatisfactory was 5.660% comparable to a study by Pudasaini S et al.<sup>11</sup>; 3.77% cases had smears showing LSIL (Low grade squamous intraepithelial lesion) comparable to studies by Hirachand et al, Yeasmin et al and Ranabhat et al.<sup>13-15</sup> The majority of the cervical cancer study and screening have focused on premenopausal women, with very small amount of information provided on the perimenopausal or postmenopausal (PMP) population. But the fact is that these women remain at higher risk for cervical cancer given that there is secondary peak in prevalence of high-risk HPV subtype in this older population.<sup>16</sup>

Along with the Pap test the wide use of Human Papiloma Virus (HPV) DNA test is usually combined which useful in the early diagnostic of intraepithelial HPV-related lesions. Study conducted by valenti et al., in 2017, used tumor markers (such as CEA, SCC-Ag, CD44) of uterine cervical cancer and made an effort to individuate cancer markers as indicator of specific cancer events. This markers can not only useful in the early detection of cervical cancer but can be fruitful in other fields of application like evaluation and monitoring of treatments to improve and advanced cure and diagnosis of cervical cancer.<sup>17</sup>

## CONCLUSION

Pap smear is an easier modality to study cervical cytology. The patients were suggested and advised for regular checkup for Pap smear so that the earlier diagnosis of metaplastic and dysplastic changes can be identified, because these are reversible in their earlier stage. The earliest detection of malignancy changes can provide the accurate medical intervention to prevent the progression of illness and increasing the survival chances. On the regular intervals Government and other agency are facilitating with the awareness of disease and implementing Pap test in developing countries to decrease the individual as well as national burden of morbidity and mortality associated with

cervical carcinoma. The right awareness and investigation will not only bring changes and reduction of mortality by cervical cancer but also in future can contribute to longevity of life for females.

## REFERENCES

1. Denny, L. Cervical cancer: prevention and treatment. *Discov Med.* 2012;14:125-31.
2. Verma, K. Early diagnosis of cancer cervix epidemiology and incidence. *J Cytol.* 2001;18:73-89.
3. Masood, S. A plea for a worldwide volunteer cervical cancer education and awareness program. A proposal from the international academy of cytology committee on cancer detection for medically underserved women. *Acta Cytol.* 1999;43:539-43.
4. Human Papillomavirus and Related Cancers. Summary Report 2010. WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre), 2010.
5. SEER. *SEER Cancer Statistics Review, 1975–2007. 2010*, [http://seer.cancer.gov/csr/1975\\_2007/](http://seer.cancer.gov/csr/1975_2007/)
6. Ko, E. M., Tambouret, R., Wilbur, D., & Goodman, A. HPV Reflex Testing in Menopausal Women. *Pathology research international*, 2011, 181870.
7. Joshi, J.M., Pandya, M.J., Pandya, J.M., et al. Study of cervical cytology in Papanicolaou smear in tertiary care centre. *J. Evolution Med. Dent. Sci.* 2017;6:6087-6089.
8. Sheikh, S.A., Mansor, M., Haque, M. Psychosocial burden differences between women of reproductive age and menopausal age due to abnormal Pap smear: A pilot study of the East Coast of Malaysia. *Arch Pharma Pract.* 2016;7:95-102.
9. Singla, A.A., and Komesaroff, P. Self-collected Pap smears may provide an acceptable and effective method of cervical cancer screening. *Health Sci Rep.* 2018;1:e33.
10. Bal, M.S., Goyal, R., Suri, A. K., et al. Detection of abnormal cervical cytology in Papanicolaou smears. *J Cytol.* 2012;29:45-7.
11. Pudasaini, S., Prasad, K.B.R., Rauniyar, S.K., et al. Cervical pap smear—a prospective study in a tertiary hospital. *Journal of Pathology of Nepal.* 2015; 5:820-3.
12. Bamanikar, S.A., Baravkar, D.S., Chandanwale, S.S., et al. Study of cervical pap smears in a tertiary hospital. *Indian Medical Gazette* 2014;250-4.
13. Hirachand, S., Bajracharya, J., Pradhanang, S., et al. Detection of abnormal cervical cytology in papanicolaou smears in a tertiary care center. *J Nepal Med Assoc.*, 2013; 52:462-5.
14. Yeasmin, S., Begum, T., Begum, L.N., et al. Pap smear study and its utility in cervical cancer screening in a tertiary care hospital in Chittagong, Bangladesh. *Chattagram Maa-O-Shishu Hospital Medical College Journal.* 2014; 13:17-9.
15. Ranabhat, S.K., Shrestha, R., Tiwari, M. Analysis of abnormal epithelial lesions in cervical pap smears in Mid-Western Nepal. *Journal of Pathology of Nepal.* 2011; 1:30-3.
16. Castle PE, Jeronimo J, Schiffman M, et al. Age-related changes of the cervix influence human papillomavirus type distribution. *Cancer Research.* 2006;66:1218–1224.

17. Valenti, G., Vitale, S.G., Tropea, A., Biondi, A., Laganà, A.S. Tumor markers of uterine cervical cancer: a new scenario to guide surgical practice? *Updates Surg.*, 2017; 69:441-449.

**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 03-02-2019; **Accepted:** 16-03-2019; **Published:** 30-03-2019