

STUDY AND ANALYSIS OF ONE THOUSAND CERVICAL PAP SMEARS; EXPERIENCE OF A RURAL TERTIARY CARE CENTER IN EASTERN U.P.

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ABSTRACT

Introduction: Cancer is the leading causes of adult deaths worldwide. However there is a marked difference in the distribution of cancer sites across different regions of the world. In contrast to developed countries cervical cancer is a public health problem in developing countries like India. Cervical cancer is the fourth most frequent cancer in women with an estimation of 6.6 percent of all female cancers and representing 3.2 percent of all cancer deaths in women [1]. In India cancer cervix constitutes 14 percent of cancer incidence among women. The standardized death rate is about 6.5 per 100,000 population [2]. Infection with HPV (Human Papilloma Virus) is the primary cause of cancer of cervix and its precursor lesions [3]. Specific high risk HPV types account for about 90% of high grade intraepithelial lesions and cancer. The carcinogenic HPV strains are HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68 [4]. HPV – 16 is the most common HPV found in invasive cancer and in CIN2 & CIN3 [5]. HPV—18 is more specific for invasive tumors [4]. HPV infection usually resolves in 9-15 months in a vast majority of cases [6]. A small minority of women exposed to HPV develop persistent infection and many progress to CIN and frank invasive carcinoma later over 15-20 years [7]. This long latent period provides us the opportunity to prevent the disease and to screen and treat the disease in its pre-malignant phase only.

Material and Methods: Study is carried out by taking 1000 Pap smears from patients attending Gynecology OPD at Government Medical College & Super Facility Hospital, Chakrapanpur, Azamgarh from november 2020 to february 2022. Pap smears were taken from patients between ages 25 to 70years presenting with different Gynecological 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 1000 Pap smears taken 631 smears were inflammatory. 2 smears showed low grade squamous intraepithelial lesion(LSIL), 10 smears showed mild to moderate dysplasia, 1 smears showed high grade squamous intraepithelial lesion(HSIL). Among routine Pap smears 288 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

Globally, cervical cancer continues to be the most common cancer in incidence among women and the fourth most common cancer overall after breast, colorectal, and lung cancer. Earlier cancer cervix was the most common cancer in Indian women but now the incidence of breast cancer has surpassed cervical cancer and is leading cause of cancer death. Although cervical cancer still remains the most common in rural India. Sexually transmitted HPV has been implicated as a causative factor for >97% of all cancers of the cervix hence all sexually active women constitute the risk group. The carcinogenic HPV strains are HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59. Worldwide HPV 16&18 contributes to over 70% of all cervical cancer cases, among them most common subtype is HPV -16 and most specific is HPV – 18. Females are most commonly infected with HPV in their teens 20s or early 30s (because of active transformation and ongoing metaplasia). HPV infection usually resolves in 90 % of cases over a period of 18-24 months, only one-tenth of all infections become persistence and progresses to CIN and frank invasive carcinoma later on as long as over 15-20 years. This long latent period provides us the opportunity to prevent the disease and to screen and treat the disease in its premalignant phase only. Prophylactic HPV vaccination (of age 10-14 yrs) and avoidance of infection by lifestyle modification like safe sexual behaviour, avoidance of early marriages and high parity ect, can be used as a primary preventive strategy targeting the women before initiation of sexual activity. Whereas the most effective and realistic strategy for secondary prevention is vigorous screening of precursors of cancer cervix and treating them effectively along with continued meticulous screening even after successful treatment. There are several cervical screening methods:

1 speculoscopy

2 cervicography

3 visual inspection by lugol's iodine (VILI) or acetic acid (VIA)

4 conventional exfoliative cervicovaginal cytology i.e. cervical (pap) smear.

5 Fluid sampling technique with automated thin layer preparation (liquid based cytology)

6 HPV-DNA testing

All these screening strategies may not be enough cost effective in the developing countries due to severe restriction on the availability of infrastructure, resources and funding. Currently cervical cytology with or without HPV screen is regarded as gold standard for cervical cancer screening in all developed countries. In developing countries convention cytology (pap smear) is being used widely. According to recommendations by American cancer society (ACS) and ACOG, cervical cancer screening should be started at the age of 21 yrs or 3 yrs after vaginal sex upto the age of 65 years, to be repeated at 3 years interval and in case of abnormal Pap smear report, depending on the

type of abnormality the test needs to be repeated at six to twelve months. More sensitive and specific investigations like colposcopy and guided cervical biopsy etc. are needed to diagnose and prevent further progression to cervical cancer.(5)

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

MATERIAL AND METHODS

This study was carried out in Gynecology OPD at Government Medical College & Super Facility Hospital, Chakrapanpur, Azamgarh, Uttar Pradesh, India from year november 2020 to February 2022. Around 1000 pap smears were taken from women between ages of 25 to 70 years presenting with different Gynecological complaints and as a routine beyond the age of 35 years by using Ayres Spatula. Smears were reported as per the Bethesda system. We took ethical clearance to do this retrospective study.

INCLUSION CRITERIA -

All sexually active women aged 25-70 years, follow up cases of cervical cancer post radiotherapy, post menopausal women and post hysterectomy women with chronic white discharge attending OPD after obtaining informed consent.

EXCLUSION CRITERIA –

1. Women <25 years old
2. Women >70 years old
3. Non-sexually active women
4. Pregnant women
5. Patients not giving consent.

After detailed clinical history and clinical examination patients were subjected to conventional pap smear test.

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 relabeled narrow end of spatula was used to take smear from posterior vaginal fornix and spread over a second glass slide.
- The Endo cervical sample was collected using a Cytobrush 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.

INTERPRETATION

<p>a) Negative for intraepithelial lesion or malignancy.</p> <p>1. Organism – trichomonas vaginalis, candida, bacterial vaginosis, actinomyces , HSV infection.</p>	<p>b) Epithelial cell abnormalities:</p> <p>1. Squamous cell-</p> <ul style="list-style-type: none"> • Atypical squamous cell of undetermined significance • Atypical squamous cell- cannot exclude HSIL (ASK-H) • Low grade squamous intraepithelial lesion (LSIL) • High grade squamous intraepithelial lesion (HSIL) • Squamous cell carcinoma
<p>2. Other non-neoplastic findings: Reactive/reparative changes, glandular cell status post hysterectomy, atrophy</p>	<p>2. Glandular cell</p> <ul style="list-style-type: none"> • Atypical endo-cervical cell(NOS) • Atypical endometrial cells(NOS) • Atypical glandular cells(NOS) • Atypical endo -cervical cell, favor neoplastic • Atypical glandular cells, favor neoplastic • Endo -cervical adenocarcinoma in situ • Endo cervical adenocarcinoma • Endometrial adenocarcinoma • Extra uterine adenocarcinoma

RESULTS

In our study we analyzed 1000 Pap smears taken from women presenting Government Medical College & Super Facility Hospital, Chakrapanpur, Azamgarh between 25 to 70 years presenting with different Gynecological complaints and as routine beyond the age of 35 years.

TABLE 1 DISTRIBUTION OF PATIENTS ACCORDING TO AGE

Age in years	No of patients
25 - 35	261
36 - 45	216
46 - 55	395
56 - 65	100
>65	28
Total	1000

In this study we have taken 1000 women, out of them 261 were between 25 to 35 years, 216 women were between 36 to 45 years, 395 women were between 46 to 55 years, 100 were between 56 to 65 years and 28 women were above 65 years (table-1).

TABLE 2 DISTRIBUTION OF PATIENTS ACCORDING TO REASON FOR SCREENING

Reasons for performing Pap smears	No of patients
Patients with chronic white discharge	411
Routine Pap smear	237
Unhealthy cervix	154
Post radio therapy follow up	10
Post menopause	63
OC pill users	18
Pelvic inflammatory disease	52
Post hysterectomy chronic white discharge	13
Abnormal uterine bleeding	21
Intermenstrual spotting	21
Total	1000

Among the 1000 women undergoing Pap smear tests, 411 women presented with chronic white discharge, 237 women as part of routine gynecological examination, 154 women with unhealthy cervix, 10 women were follow up cases of cervical cancer post radio therapy , 63 women were postmenopausal , 18 women were oral contraceptive pills users, 52 women presented with pelvic inflammatory disease, 13 women presented with post hysterectomy chronic white discharge, 21 women had abnormal uterine bleeding and 21 women presented with intermenstrual spotting (table-2).

TABLE 3 PAP SMEAR ANALYSIS REPORTS

Pap smear analysis reports	No of patients	Percentage
Inflammatory smear	631	63.1%
Low grade squamous intraepithelial lesion (LSIL)	2	0.2%
Mild to moderate dysplasia	10	1%
High grade squamous intraepithelial lesion (HSIL)	1	0.1%
No evidence of malignancy or normal	288	28.8%
Bacterial vaginosis	37	3.7%
Atypical squamous cells of undetermined significance (ASCUS)	29	2.9%
Squamous cell carcinoma	2	0.2%
Total	1000	100%

Among the 1000 Pap smear reports analyzed, 631 (63.1%) reports showed inflammatory smears. 2 (0.2%) smears were given as Low grade squamous intraepithelial lesion (LSIL). 10(1.0%) smears showed mild to moderate dysplasia . 1(0.1%) smears showed high grade squamous intraepithelial lesion (HSIL). Possibility of malignancy was ruled out in 288(28.8%) smears. in 37(3.7%) smears showed bacterial vaginosis. 29(2.9%) smears showed atypical squamous cells of undetermined significance (ASCUS).2(0.2%) smears showed Squamous cell carcinoma(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 developed countries played a major role in reducing mortality and morbidity due to Cancer Cervix.

In our study we have taken 1000 Pap smears from women presenting to our OPD between 25 to 70 years presenting with different Gynaecological complaints and as routine beyond the age of 35 years. In study conducted by Sunita et al⁸ 560 Pap smear reports were analysed. Whereas in study conducted by Mandakini et al⁹ 995 Pap smear reports were analyzed.

In our study maximum number of women were between 45 to 55 years age group (39.5%). In study conducted by Sunita et al⁸ maximum number of women were between 31 to 40 years age group (32.68%). In study conducted by Mandakini et al⁹ between 15 to 30 years maximum number of women were studied.

In our study abnormal Pap smear reports were 712(71.2%), whereas in study conducted by Sunita et al⁸ 433(77.32%) reports were abnormal. In study conducted by Mandakini et al⁹ abnormal Pap smear reports were 689(69.2%).

In our study Inflammatory smear reports were 631(63.1%), whereas in study conducted by Sunita et al⁸ 403(71.96%) reports were inflammatory and in study conducted by Mandakini et al⁹ inflammatory Pap smear reports were 572(57.5%).

In our study smears showing ASCUS (Atypical squamous cells of undetermined significance) were 29(2.9%). In study conducted by Sunita et al⁸ 13(2.3%) reports showed ASCUS and in study conducted by Mandakini et al⁹ reports showing ASCUS were 41(4.1%).

In our study smears showing LSIL (Low-grade squamous intraepithelial lesion) were 2(0.2%) . In study conducted by Sunita et al⁸ 11(1.9%) reports gave LSIL and in study conducted by Mandakini et al⁹ reports showing LSIL were 41(0.1%).

In our study HSIL (High grade squamous intraepithelial lesion) reports were 1(0.1%), whereas in study conducted by Sunita et al⁸ 2(0.3%) reports gave HSIL. In study conducted by Mandakini et al⁹ HSIL reports were 1(0.1%).

In our study smears showing squamous cell carcinoma were 2(0.2%). In study conducted by Sunita et al⁸ 3(0.5%) reports gave squamous cell carcinoma and in study conducted by Mandakini et al⁹ reports showing squamous cell carcinoma were 7(0.7%).

Though having few limitations in performing rural areas¹⁰, 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 programs the incidence of cervical carcinoma can be decreased.^{11,12}

CONCLUSION

Pap smear test is simple, non invasive, less expensive and easy to perform procedure for early detection of possibility of malignancy thus helps in prompt treatment at an early stage and prolongation of life expectancy by reducing the mortality and morbidity of cancer cervix. So it should be subjected as a routine screening procedure to reduce the treatment burden, morbidity and mortality. As cancer cervix is a preventable disease there is need for spreading awareness regarding cancer cervix, its incidence, risk factors, morbidity and mortality caused by it and the screening and diagnostic procedures to the rural India so that they can understand the gravity and opt for regular screening. Those women with abnormal pap report should be further screened by HPV DNA testing and colposcopy. And those with further abnormalities should be advised for the diagnostic procedure like cervical biopsy.

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