



PAP SMEAR'S POSITIVITY IN GYNECOLOGY OPD OF A SINGLE UNIT AT TERTIARY CARE HOSPITAL

Obstetrics & Gynaecology

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ABSTRACT

Aim: - To find out Pap smear's positivity as a screening tool for Ca cervix in population of varied socio-demographic strata in a defined time period.

Methodology: - A cross sectional study for screening of Ca cervix over a period of 1 year (1 Jan. 2023 to 31 December 2023) in a single unit of Gynecology OPD of a tertiary care hospital in the Hadoti region. A total of 649 participants in which Pap test performed and data collected which is segregated into following categories: Age, Religion, Educational status, socio-economic background and clinical complaints. Pap smears were examined and reported by pathology department. **Results:** - During this study period 649 women were screened, out of whom 37(5.70%) were Inadequate for examination, 563(86.74%) were NILM and 49(7.55%) Pap smears were positive. Amongst whom 5(0.77%) were LSIL, 5(0.77%) were HSIL, 23(3.54%) were ASC-US, 11(1.69%) were ASC-H and 5(0.77%) were SCC. The positive results were further classified on the basis of socio-demographic backgrounds like age 8(4.57%) 21-30 years, 12(5.52%) 31-40 years, 19(14.96%) 41-50 years and 10(7.69%) more than 50 years. Religion 37(13.80%) Hindu, 9(4.54%) Muslims, 3(1.63%) others. Education 19(10.49%) Illiterate, 30(6.41%) literates. Socio-economic status 10(6.84%) Upper class, 11(13.41%) Upper middle class, 6(7.50%) Middle class, 6(2.09%) Upper lower, 16(29.09%) Lower class. Clinical complaints 14(4.84%) had pain lower abdomen alone, 18(8.53%) white vaginal discharge alone, 17(11.40%) pain lower abdomen with white vaginal discharge. **Conclusion:** - In the present study Pap smear positivity rate is 7.5%. Pap smear positivity is higher in 41-50 years age group, Hindu population, illiterate, low socio-economic and pain lower abdomen with white vaginal discharge group.

KEYWORDS

Pap smear CA Cervix Socio-demographic

BACKGROUND

Cervical carcinoma is one of the most common cancer and dreaded disease of women, cases in India account for 16 percent of total cervical cancer cases in the world (1). The situation is more alarming in the rural area where majority of population are illiterate and ignorant with low income and poor sanitation. Some screening programs are going on to overcome this problem like village health and sanitation, Siksha Plus and cervical cancer screening by cytology at PHC, CHC, District hospital and tertiary care centers. Because many patients are detected positive in pap smear screening test for precancerous lesions their confirmatory diagnosis and early treatment is possible. Screening by pap smear is feasible, easy to perform and easy to report makes it first choice of screening tool for carcinoma cervix.

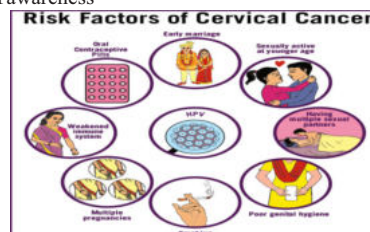
INTRODUCTION

Worldwide cervical carcinoma continues to be a significant health care problem. In developing countries like India, where health care resources are limited, Ca Cervix is the 2nd most frequent cause of cancer deaths in women, approximately 1,20,000 women in India develop this disease (2). Although the incidence of Ca Cervix has declined in the urban population in contrast to rural areas where it continues to be highly prevalent (3). Despite existence of national guidelines, the screening coverage in India is appallingly low, as a result the diagnosis of Ca Cervix is based on opportunistic screening or after the onset of symptoms. Regular cervical cytological examination of all sexually active women can prevent the occurrence of this disease (4). In urban areas awareness for genital hygiene and visiting hospitals at preclinical stage are the contributory factors for the prevention and control of Ca Cervix. In rural areas we need to regulate and encourage sex education, sanitation, awareness of STDs, establishment of outreach camping of cytological screening and reporting and drive away the fear of cancer.

Risk Factors: -

1. Human papillomavirus infection
2. Early age of marriage
3. Multiple pregnancies
4. Multiple sexual partners
5. Smoking
6. Sexually transmitted diseases

7. Poor nutrition
8. Poverty
9. Illiteracy
10. Poor genital hygiene
11. Low socio-economical class
12. Lack of awareness



<https://www.indiancancersociety.org/cervical-cancer/img/pic-risk-factors-of-cervical-cancer.jpg>

Cervical cancer screening is an important tool for prevention and early treatment because of opportunity during the long-lasting pathogenesis of the cervical cancer (5). Cervical cancer results from a persistent infection by high-risk subset of human papillomavirus (6). Amongst these, HPV 16 infection is not a very specific finding and can be found in 16 percent of women with low grade lesion and 14 percent of women with normal cytology. HPV type 18 is found in 23 percent of women with invasive cancer, 5% of women with CIN 2 and CIN 3, 5% of women with HPV and CIN 1, fewer than 2% of women with negative findings, therefore HPV 18 is more specific than HPV 16 for invasive tumours. Usually, HPV infections are typically transient and those who persists may remain latent for many years. Most women who are exposed and have no clinical evidence of disease and the infection is eventually suppressed or clean up in 9- 15 months (7). Traditionally Pap smear has remained cornerstone of cervical screening programs globally and in India uptill now. As per data collected from developed countries Pap smears efficacy was found high and resulted in definitive decrease in overall burden of disease. But from developing countries specially in Indian context the efficacy varies from village-to-village screening programs, health center to health center screening

techniques, studies to studies data collection variability, resources, demographic, socioeconomic myth and taboos (8).

The standard method of reporting cytology findings of Pap smear is by the Bethesda 3 system (2001).

The Bethesda 3 system (2001) of Pap smear reporting: -

According to system potentially premalignant squamous lesions fall into specific categories:

A: Atypical Squamous Cells (ASC)

B: Low grade Squamous Intraepithelial Lesions (LSIL)

C: High Grade Squamous Intraepithelial Lesions (HSIL) (8)

The ASC category subdivided into: those of unknown significance (ASC- US) and those in which high grade lesions must be excluded (ASC-H). LSIL Includes CIN 1 (mild dysplasia) and the changes of HPV, termed koilocytotic atypia. The HSIL includes CIN 2 and CIN 3 (moderate dysplasia, severe dysplasia and carcinoma in situ). AGUS (Atypical glandular cells of undetermined significance) was developed to characterize evidence of non-squamous glandular neoplasia originating in cervix.

MATERIAL AND METHODS.

All women attending Gynaecology OPD from JAN 2023 – DEC. 2023 who were fulfilling the inclusion criteria were included in the study after taking informed consent. Each of them subjected to detailed history, demographic profile and meticulous clinical examination. Demographic profile includes age, socio economic status, literacy and religion. The study protocol was reviewed and approved by institutional review and ethics committees.

Design of study: Prospective cross-sectional study

Study duration: JAN 2023-DEC. 2023 (1 Year study).

Study population: Women in gynaecology OPD of a single unit those fulfilled following criteria.

Inclusion Criteria:

- Age 21-60 yrs.
- Sexually active for ≥ 3 yrs
- Women with symptoms such as white discharge, post coital bleeding.

Exclusion Criteria:

- Women < 21 year and > 60 years.
- Women without sexual exposure.
- Women who underwent hysterectomy.
- Women who have pregnancy.

After the detailed examination, pap smear taken with Ayer's spatula and two slides immediately fixed in 95% ethyl alcohol in Koplin's jar. Reporting was done by department of pathology GMC Kota.

OBSERVATIONS AND RESULTS

Table 1: Bethesda 3rd system 2001 reporting.

Cytological Class	Reported numbers	Total sample	%
Sample inadequate	37	649	5.70
NILM	563		86.74
LSIL	5		0.77
HSIL	5		0.77
ASC- US	23		3.54
ASC- H	11		1.69
SCC	5		0.77
Total	649	649	100

Total patients screened were 649 (100%), Sample inadequate for evaluation 37 (5.70%). No abnormality detected (NILM) in 563 (86.74%). Positive Pap smears (LSIL, HSIL, ASC-US, ASC-H and SCC) 49 (7.55%).

Table 2: Distribution of study population according to age.

AGE	WOMEN SCREENED (n=649)	WOMEN SCREENED (%)	POSITIVE (%)
21-30	175	26.96	8 (4.57)
31-40	217	33.43	12 (5.52)
41-50	127	19.56	19 (14.96)
51- 60	130	20.03	10 (7.69)
TOTAL	649	100	49

Maximum women belonged to age group – 31-40 years -217 (33.43%) followed by 21-30 years – 175 (26.96%); 51-60 years – 130 (20.03%) and 41-50 years – 127 (19.56%) respectively. However positive smears were found maximum in 41-50 years age group i.e. 19 (14.9%) followed by 51-60 years – 10 (7.6%); 31-40 years 12 (5.5%) and 21-30 years 8 (4.5%) respectively.

Table 3: Distribution of study population according to religion.

Religion	Women screened (n=649)	Women screened (%)	Positive n (%)
Hindu	268	41.29	37 (13.80)
Muslim	198	30.50	9 (4.54)
others	183	28.19	3 (1.63)
Total	649	100	49

Positive Pap smears were more commonly found in Hindu women 37 (13.80%) out of the total 268 (41.29%) Hindu women screened.

Table 4: Distribution on the basis of education

Education status	Women screened (n=649)	Women screened (%)	Positive n (%)
Literate	468	72.11	30 (6.41)
Illiterate	181	27.88	19 (10.49)
Total	649	100	49

Study group consisted of 468 (72.11%) literate women and 181 (27.88%) illiterate women. Pap smear positivity was higher in illiterate women 19 (10.49%) as compared to literate 30 (6.41%).

Table 5: Distribution of the study population according to socio economic background.

Socio economical class (modified Kuppuswami scale)	Women screened (n=649)	Women screened (%)	Positive n (%)
Upper class	146	22.49	10 (6.84)
Upper middle	82	12.63	11 (13.41)
Lower Middle class	80	12.32	6 (7.50)
Upper Lower class	286	44.04	6 (2.09)
Lower class	55	8.47	16 (29.09)
Total	649	100	49

Maximum number of women screened by Pap smear 286 (44.04%) belonged to upper lower class; followed by upper class 146 (22.49%) whereas the Pap smear positivity was maximum in lower class 16 (29.10%) followed by upper middle class 11 (13.40%).

Table 6: Distribution of the study population according to clinical symptoms.

Clinical symptoms	Women screened(n=649)	Women screened (%)	Positive n (%)
Lower abdominal pain	289	44.53	14 (4.84)
White vaginal discharge	211	32.51	18 (8.53)
Lower abdominal pain with white vaginal discharge	149	22.95	17 (11.40)
Total	649	100	49

Maximum participants had lower abdominal pain 289 (44.53%) in which positivity rate was low 14 (4.84%) in comparison to white vaginal discharge (32.51%) with positivity rate 18 (8.53%) and lower abdominal pain with white vaginal discharge 149 (22.95%) with maximum positivity rate 17 (11.40%).

Data Analysis

Data were registered in a hard cover bind register and later analyzed using Microsoft excel. Categorical variables were presented as frequency (n), percentage (%) in tables.

DISCUSSION

The incidence of cervical cancer is quite high because prevention programs are either nonexistent or poorly implemented. The pap smear test used as a screening method to detect cervical cancer is an effective way to prevent the development of cervical cancer, but awareness within the community about pap smear test is very low.

According to the American cancer society (2012), the pap smear test should be done every 3 years and pap smear test with HPV DNA test is used every 5 years.

1. 649 women coming to gynaecology OPD of a single unit at tertiary care center were screened in which 86.74% reported as NILM in sample of 649 women. Among 751 women who had routine pap test over the 6 years period, most (92.8%) had a normal/negative cervical screening outcome in the study of Olowolaju S, Kassabian S, et al (15). In a study by Arun R, Singh JP, et al. (14) NILM were 96.36% from sample size of 550. In a study by Verma S et al (9) showed 56% NILM from sample size of 200. A study conducted by Sachan PL, Singh M et al. (12). NILM were 48.84% in sample size of 1650.

2. The overall positivity rate was 7.5% in the present study which is aligned with the study of Makuza JD et al (10). In a study of Olowolaju S, Kassabian S, et al. (15) the overall positivity rate was 7.2% (n=54/751) which is very similar to the present study. In the study of Sachan PL, Singh M et al. (12) the positivity rate of pap smear test was similar (8.4%) to present study. An hospital-based study carried out by Hegde et al. (13) in Karnataka showed very high Pap smear positivity rate 11.5%. This may be due to the regional variations, differences in methodology, and differences in age group taken. This study similar to the study by Divya H et al., (17) which showed 11.7% pap smear positivity. A study carried out by Niyodusenga A, Musoni E et al. (16) pap smear was positive in 39.89% of the 198 cases. It is very high, may be due to the lesser sample size or study conducted in a referral hospital. It was done on hospital-based population in which high risk cases were screened. In a study of Singh K et al., (18) in 2010 showed 5.2% cases of positive pap smear and a study of 550 participants which is conducted by Arun R, Singh JP, et al. (14) the pap smear positivity rate was 3.6%.

3. In the present study, most of the abnormal cytology was detected in the age group between 41 and 60 years which is 11.28%. Study of Niyodusenga A, Musoni E et al. (16) showed the increasing trend of pap smear test positivity 21-60 years age and most of the positive cases (24.7%) were found between 41- and 60-year age. In a study by Sachan PL, Singh M et al (12) showed 19.96 % positive case in 41-60 years age group in a sample size of 1650. In a study of Arun R, Singh JP, et al. (14) the maximum positivity 4.0% showed between the age 41 and 60 years. Similar results were also found in Bhattacharya et al., (19) and Makuza JD et al (10) study. The positive cases (30/751) from 40–59-year age in the study of Olowolaju S, Kassabian S, et al. (15) have 3.99% positivity rate.

4. In this study positivity rates were higher (13.8%) in Hindus than (4.5%) in Muslim population. Similar results were found in the study conducted by A Ruchi, Singh JP et al (11) in which Hindus were high (9.8%) positive for pap test as compare to Muslims (2.9%). It may be due to majority of this population in India, due to rituals of circumcision in males among Muslims and may be fewer Muslim women came to the hospital because of their religion, shyness or they were unaware of the cervical cancer screening programs.

5. In this study maximum fraction of participants belong to upper lower class (44.04%) whereas Pap smear positivity was found maximum in lower class (29.1%) followed by upper middle (13.4%), lower middle class (7.5%), upper class (6.8%) and least in upper lower class (2.1%). The study of A Ruchi, Singh JP et al (11) there were few participants in upper class with a high pap smear positivity rate of (25%) and similar observation has been found in Mhaske et al. (20) study in which the pap smear positivity rate was high (33.3%) in upper class socioeconomic status.

SUMMARY AND CONCLUSION

- Pap smear is a simple easy to perform screening test but as yet it is not an integral part of routine Gynaecological examination of each woman attending OBG, OPD due to heavy patient load and needs motivation of obstetrician Gynaecologists to perform it in maximum routine OPD women in order to identify Ca cervix in initial stage.

Limitations

- Women did not return for follow up after the test and they had to be called when there was positive smear in order to treat them.
- Some women did not give consent for Pap smears because Pap smears were taking by male Gynecologist and fear of instruments.

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Nil.

Conflicts Of Interest

There are no conflicts of interest.

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