

# A CROSS-SECTIONAL COMPARATIVE STUDY OF PAP SMEAR AND COLPOSCOPIC FINDINGS IN PATIENTS WITH VAGINAL DISCHARGE ATTENDING OPD IN TERTIARY CARE CENTRE.

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## **Abstract.**

### **Aim and Objective:**

To determine the prevalence of precancerous lesions in the study population, to screen patients with abnormal vaginal discharge with pap smear and colposcopy, and to screen patients with abnormal vaginal discharge with colposcopy.

### **Methods:**

The study was carried out in the Obstetrics and Gynaecology Outpatient Department of Jawahar Lal Nehru Medical College and Hospital, Bihar, India. Women in the outpatient section of Obstetrics and Gynaecology between the ages of 35 and 55 were included. A Colposcopy and a Pap smear were performed on each individual.

### **Results:**

In this study, when the cervix was seen through a speculum and a pap smear was collected, the majority of the study population- 52% (13/25)- had mucopurulent discharge. 8% (2/25) had blood-stained discharge, 16% (4/25) had greenish discharge, and 32% (8/25) had a thick, curdled-white discharge. All patients in our study had pap smears collected, and 40% (10/25) of those smears were HSIL, 28% (7/25) were LSIL, 32% (8/25) were inflammatory smears, 40% (10/25) were ASCUS, 8% (2/25) were normal, and 4% (1/25) were adenocarcinomas.

### **Conclusion:**

Colposcopy is a screening method that can be used to find precancerous lesions. Compared to a Pap smear, colposcopy offers higher sensitivity and accuracy in detecting CIN. CIN must be identified earlier. Colposcopy is a screening method that can be used to find precursor lesions for cancer. The sensitivity of colposcopy is high Pap smears lack the speed and accuracy needed to detect CIN. By combining the sensitivity of a Pap smear with colposcopy Pre-cancer lesion detection can be more precise when considerably increased.

### **Recommendation:**

Women with an abnormal Pap test should undergo a colposcopy, and those with abnormal colposcopy findings should be advised to undergo a biopsy.

**Keywords:** Cervical Cancer, Pre-cancerous, Colposcopy, PAP Smear, Cervix, Submitted: 2023-09-26, Accepted: 2023-09-26

## 1. INTRODUCTION.

The cervix, which has an exterior and internal os, is the lowest, more constrictive part of the uterus. The location of the squamocolumnar junction, which connects the squamous and glandular epithelium, varies with age and hormonal influence. The columnar epithelium is located close to the external os when young. Due to the metaplasia of the columnar epithelium after puberty, the squamous epithelium approaches the external os. Between this old and new squamocolumnar junction is a transformation zone [1].

Cervical pathology can include cervical erosion (the squamous layer of the ectocervix is replaced by glandular epithelium), cervicitis (cervical inflammation), tuberculosis of the cervix (due to ascending infection), cervical intraepithelial neoplasia (intraepithelial cellular atypia of mild to a severe degree), and frank cervix cancer (common malignancy of women with an annual incidence of 90000 in industrialized and 340000 in poor countries) may be the cause. After breast cancer, cervix cancer is the second most prevalent cancer [1, 3]. It is the main reason for cancer-related deaths. Because cervical cancer can be detected in the premalignant stage, the World Health Organisation views it as a disease that can be prevented [2].

In 1948, the idea of cervical pre-invasive illness was first proposed that this pathology can be identified clinically or even early with the affordable, noninvasive screening test known as the Pap smear, in conjunction with a colposcopy and cervical biopsy if necessary. Early management lowers the mortality and morbidity rates associated with cervical cancer [3]. Colposcopy is an optical technique that uses stereoscopic vision to view the lower genital canal in high light. It is a straightforward, non-invasive outpatient surgery. In the majority of cases, a colposcopically guided biopsy of a questionable region provides the final diagnosis confirmation. Colposcopy is typically performed as a routine procedure (as part of a gynecological exam), screening procedure (to check for

cervix cancer), and selective procedure (to check for the conditions listed below: abnormal cervical cytology, high-grade abnormality, suspicious-looking cervix, persistent LSIL for longer than 18 months, VIA, VILI positive [4]).

This study aims to investigate the prevalence of precancerous lesions in the study population and to evaluate the sensitivity and accuracy of cytology and colposcopy in detecting precancerous lesions. The objective of this study is to screen patients with abdominal vaginal discharge with pap smear and colposcopy.

## 2. MATERIAL AND METHODS.

### 2.1. Study Design and Population.

A cross-sectional study was conducted at Jawahar Lal Nehru Medical College and Hospital, Bihar, India in the duration of April 2022 to April 2023 consisting of one group of 25 patients. The prevalence of the study group is 23% and the calculated sample size was 25 patients per week. The sample size is selected by Epi info software and the formula for sample size is  $n = \frac{4pq}{E^2}$ , where, p is referred to as prevalence, q is  $100-p$  0.94 and E is the error permitted.

### 2.2. Inclusion and Exclusion Criteria.

Women in the group were 34 to 56 years of age and women attending the Gynecology Outpatient's Department with conditions such as persistent abnormal vaginal discharge, post-coital bleeding, unusual uterine bleeding, and postmenopausal bleeding. Whereas speculum examinations of the study identified women pregnant, unmarried women with a known case of carcinoma visiting the clinic were excluded from the study.

### 2.3. Procedure.

Before enrolling a patient, written informed permission was sought from them after receiving approval from the institution's human ethical committee to the books. With concentration, a thorough history was taken on age, parity, and previous menstrual cycles for intermenstrual heavy vaginal bleeding While bleeding, Periods,

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past relationships, and coital history for post usage of birth control, dyspareunia, and sex bleeding a lot of white discharge that itches and smells bad smoldering micturition. conducting a thorough investigation local examination is followed by a systemic assessment, patient lying dorsally, and illuminated the scope of Cusco.

Visualizing the cervix for any nearby both a lesion and an unusual discharge. obtained from a Pap smear Ayer's spatula and squamocolumnar junction 95% ethanol was used to fix the spread in a clean glass slide. The Smear is hydrated, air dried, then submerged after 1-2 minutes, washed with tap water, and then added hematoxylin papanicolaustain-stained.

Pap test cytology results such as cytology with normal or inflammatory alterations and unusual cytology Colposcopy, squamous cells, and dysplastic cytology findings like the typical impression and the inflammatory cervical intraepithelial neoplasia, modifications, and invasive, a carcinoma was found. A colposcopic punch with the purpose of the tissue from the biopsy is submitted for histological analysis.

#### 2.4. Statistical Analysis.

Microsoft Excel was used to enter the study's parameters, and SPSS version 20 was used to evaluate the data. P values of 0.05 or lower were used to determine statistical significance for outcomes that were expressed as percentages.

### 3. RESULTS.

A total of 25 patients were included in this study. At the initial stage, 75 patients were examined for eligibility, however, 50 patients were excluded from this study due to not being eligible. The majority of the 20 participants (about 80%) are over 49 years old (Table 1). The age group of patients older than 49 years represented the majority of those presenting with vaginal discharge and 20% (5/25) of the population were between the ages of 40 and 50.

The bulk of the women in the study's sample belonged to the lower middle socioeconomic

class. 52% (13/25) were in the upper middle socioeconomic class people, or 7%, came from lower socioeconomic backgrounds. 12% (3/25) of the population belonged to the upper socioeconomic class (Table 1). 32% (8/25) of the study group's participants had a history of thick, white vaginal discharge, while 60% (15/25) had a history of thin, watery vaginal discharge 8% of the patients experienced bloody discharge (Table 2).

64% (16/25) of the 25 study participants who had a history of vaginal discharge reported that the discharge had lasted longer than six months. In our study, 40% (10/25) of participants reported having experienced post-coital bleeding, while 8% (2/25) had never experienced such bleeding. 28% (7/25) of the women in the research group reported having experienced postmenopausal hemorrhage. 12/25, or 48%, had never experienced postmenopausal bleeding. The majority of the 25 women in the study group, 21/25 (84%), had regular menstrual cycles. 12% (3/25) of respondents reported a history of irregular menstruation. The bulk of the 25 women studied- 56% (14/25)- married while they were under 20 years old, 32% (8/25)- married when they were between 20 and 23 years old, and 8% (2/25)- married when they were over 25. Among the 25 women in our study group, the majority (17/25) were multiparous women (68%), followed by primiparous women (12%) and nulliparous women (4%). In our study, 72% (18/25) of the women had undergone sterilization.

12% (3/25) of the women used oral contraceptives, while 8% (2/25) utilized intrauterine devices. The bulk of the study group, or 88% (22/25) of them, reported no notable findings upon abdominal examination. 12% (3/25) of the abdomens exhibited palpable bulk. Examining 25% revealed soreness in 5 of the cases. When the cervix was seen through a speculum and a pap smear was collected, the majority of the study population- 52% (13/25)- had a mucopurulent discharge. 8% (2/25) had blood-stained discharge, 16% (4/25) had greenish discharge, and 32% (8/25) had a thick, curdled-white discharge. All patients in our study had pap smears collected, and 40% (10/25) of those smears were

Table 1: Demographic distribution of patients.

| Variables             | Frequency | Percentage |
|-----------------------|-----------|------------|
| Age                   |           |            |
| 39-49                 | 5         | 20         |
| >49                   | 20        | 80         |
| Socio-economic Status |           |            |
| Upper                 | 1         | 4          |
| Middle upper          | 3         | 12         |
| Middle lower          | 12        | 48         |
| Upper lower           | 9         | 36         |

Table 2: Patient distribution based on nature of vaginal discharge.

| Vaginal discharge | Frequency | Percent |
|-------------------|-----------|---------|
| Thick and curdy   | 8         | 32      |
| Thin watery       | 15        | 60      |
| Blood stained     | 2         | 8       |

HSIL, 28% (7/25) were LSIL, 32% (8/25) were inflammatory smears, 40% (10/25) were ASCUS, 8% (2/25) were normal, and 4% (1/25) were adenocarcinomas. All of the study population's participants underwent colposcopy; 3% acetic acid was applied; aceto white spots were sought after and their distinguishing characteristics were noted; lugol's iodine was then applied; and the results were noted. Based on the Modified Reid index, scores were assigned. 48% (12/25) of the study group had CIN I, 20% (5/25) had CIN I-II, and 36% (9/25) had CIN II-CIN III.

#### 4. DISCUSSION.

In the current study, 25 women who had a history of vaginal discharge and visited the OPD were assessed, and a pap smear was collected. Additionally, they underwent colposcopy, a biopsy was performed, and the outcomes of the pap smear, and colposcopic findings were compared to establish the sensitivity and accuracy of the procedure in identifying cervix pre-cancerous lesions.

According to Kushtagi et al.'s [5] study, women above the age of 30 had a greater prevalence of CIN. The majority of women with precancerous lesions belong to lower socioeconomic status, according to the distribution of study participants'

socioeconomic position. 53.5% (38/71) of the participants in the study conducted by Dhaubhadel et al. [6] revealed that the majority of CIN I (80%) and CIN II (50%) cases were associated with low socioeconomic position since poor personal cleanliness increases the risk of cervical cancer. According to the complaint, the majority of the women experienced vaginal discharge for more than 6 months that was thick in 52.1% (37/71) and thin and watery in 42.3% (31/71). Long-term excessive vaginal discharge has also been shown to increase the risk of developing cervical cancer. Of the study population's 14 percent (10/71) post-coital hemorrhage cases, 6 cases (10%) had CIN, according to the findings. A positive correlation exists between post-coital bleeding and CIN development. According to the studies conducted among post-coital bleeding women, 5.6% had CIN I, 3.6% had CIN II, or III, and 55% had invasive malignancy [7, 8].

In this study, postmenopausal bleeding was present in 22.5% (16/71) of the women, of whom 56.25% (9/16) had CIN positivity. 11/71 (15.5%) of women who experienced irregular menstruation, such as intermenstrual hemorrhage, also had CIN in 23% of cases. Early marriage, having several partners, and having sex with high-risk guys

whose wives have died from cervical cancer all raise the risk of developing CIN.

In their investigation, Mhaske et al. [9] demonstrated the link between cervical cancer and early marriage. Women with a CIN majority in our study married younger than 20 years of age. The majority of CIN-afflicted women in this study had several pregnancies. In our study, it was discovered that 5/8 (62.5%) of women who used oral contraceptive pills had a higher frequency of CIN. One-fourth (25%) of IUCD users displayed CIN characteristics. 39.2% (20/51) of women who underwent permanent sterilization had CIN. Studies conducted previously showed, there is a higher risk of developing cervical dysplasia among users of hormonal contraceptives. They added that the risk of CIN rises to a maximum of 4 increase in the number of HPV-positive women using oral contraceptive pills [10-12].

In this study, 12 of the 25 women had no relevant personal or family history of cervical cancer regarding cervical exams in a medical setting. About 76% of the women in our research had erosion, the most prevalent finding, and of those, 27% had CIN. In approximately 13.6% of the study group, hypertrophied cervix without erosion was seen, of which 2/25 were determined to have CIN. 64% (16/25) of the study population had an unhealthy, hypertrophied cervix, of which 52% (13/25) had CIN. All patients underwent Pap smears, which revealed LSIL in (27%) of the female patients, HSIL in 9/25(36%), and ASCUS in 12.7% (3/25) of the study group. It was discovered that the pap smear had limited sensitivity in detecting premalignant lesions when the pap smear report was compared to the histopathology report of the cervical biopsy. The accuracy of detecting pre-cancerous lesions was calculated, and it was discovered from the reports of colposcopy that cancerous lesions were 75.6%.

## 5. CONCLUSION.

It is thought that cervical cancer is preventable in a long pre-invasive stage, the availability of screening tools, and the efficient control of pre-incurable lesions. CIN must be identified ear-

lier. Colposcopy is a screening method that can be used to find precursor lesions for cancer. The sensitivity of colposcopy is high. Pap smears lack the speed and accuracy needed to detect CIN. By combining the sensitivity of a Pap smear with colposcopy Pre-cancer lesion detection can be more precise when considerably increased.

## 6. LIMITATIONS.

The limitations of this study include a small sample population who were included in this study. The findings of this study cannot be generalized for a larger sample population.

## 7. RECOMMENDATION.

Women with an abnormal Pap test should undergo a colposcopy, and those with abnormal colposcopy findings should be advised to undergo a biopsy.

## 8. ACKNOWLEDGEMENT.

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## 9. LIST OF ABBREVIATIONS.

- OPD- Out Patient Department
- HSIL- High-grade squamous intraepithelial lesions
- LSIL- Low-Grade Squamous Intraepithelial Lesion
- ASCUS- Atypical squamous cells of undetermined significance
- CIN- Cervical intraepithelial neoplasia
- PAP- Pulmonary alveolar proteinosis
- VIA- Visual inspection with acetic acid
- VILI- Ventilator-induced lung injury
- SPSS- Statistical Package for Social Sciences
- IUCD- intrauterine contraceptive device
- HPV- human papillomavirus

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## 11. CONFLICT OF INTEREST.

The authors report no conflicts of interest in this work.

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