

## A Comparative Study of Colposcopy and Histopathological Findings of Unhealthy Cervix in Tertiary Care Hospital

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Received: 17-04-2022 / Revised: 21-05-2022 / Accepted: 25-06-2022

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Conflict of interest: Nil

### Abstract

**Background:** Cervical cancer is common worldwide and ranks third among all the malignancies for women. Performing colposcopy with more accuracy using standardized scoring system, taking a colposcopy directed punch biopsy, and sending it for histopathological diagnosis would result in a better diagnosis of premalignant and malignant diseases. The study was conducted to compare colposcopy and histopathological findings of unhealthy cervix in tertiary care hospital.

**Methods:** The present comparative cross-sectional study was carried among women who presented with various gynaecological complaints at Department of Obstetrics and Gynaecology of tertiary care centre during November 2019 to October 2020. Sample sizes of 112 participants were enrolled in study. The collected data were analyzed with proper statistical methods using MS excel 2016.

**Results:** The majority of participants were in age group 31-40 years (58.04%) with mean age of  $37.48 \pm 8.03$  years and white discharge (74.10%) as the commonest complaint. Colposcopy shows sensitivity of 84%, specificity of 70.27% with accuracy of 79.46% when compared to histological findings.

**Conclusions:** The high specificity and sensitivity of colposcopy indicated that colposcopy has an important role in the diagnosis of cervical intraepithelial neoplasia.

**Keywords:** Colposcopy, Histopathological Findings, Unhealthy Cervix

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### Background

Cervical cancer is common worldwide and ranks third among all the malignancies for women [1]. In 2020, an estimated 604 000 women were diagnosed with cervical cancer worldwide and about 342 000 women died from the disease [2]. In general, higher incidence is found in developing countries, and these countries contribute 85% of the reported cases annually. Economically advantaged countries have significantly lower cervical cancer rates and add to only 3.6% of new

cancers. This incidence disparity highlights success achieved by cervical cancer screening programmes in which Pap smear is regularly obtained [2].

Prevention of invasive cancer by early detection and treatment of cervical intra epithelial neoplasm (CIN) currently offers the most cost-effective long-term strategy for cervical cancer control [3]. The goal of screening of carcinoma cervix is to diagnose and treat it in early preinvasive

state, which makes the disease ideal for screening procedures. Performing colposcopy with more accuracy using standardized scoring system, taking a colposcopy directed punch biopsy, and sending it for histopathological diagnosis would result in a better diagnosis of premalignant and malignant diseases [4].

Therefore, the present study was conducted to compare colposcopy and histopathological findings of unhealthy cervix in tertiary care hospital.

### Objectives

- To study the effectiveness of colposcopy findings.
- To correlate Colposcopy and Histopathological findings of unhealthy cervix.

### Methodology

The present comparative cross-sectional study was carried among women who presented with various gynaecological complaints. The study was carried out at Department of Obstetrics and Gynaecology of tertiary care centre during November 2019 to October 2020. The study was

conducted after obtaining clearance from the Ethical Committee of the institute. Colposcopy was performed on all those women who had recurrent vaginal discharge, postcoital or intermenstrual bleeding and unhealthy cervix on pelvic examination. The patients already diagnosed or treated for cervical cancer were excluded. Sample size was calculated using Power Analysis & Sample Size (PASS) software based on sample size determination technique mentioned in this resulted in a sample size of 112. Colposcopy findings and histopathology reports were entered in a specially-designed proforma. Colposcopy was considered abnormal when there was presence of acetowhite areas and abnormal vessels irrespective of the grade of these changes. Biopsies were taken in all the women for histopathological analysis. The histopathological changes were classified as normal, CIN1, CIN2, CIN3 or invasive carcinoma. There were no patients with borderline or HPV changes. The collected data were analysed with proper statistical methods using MS excel 2016. Data was summarized in percentages and proportions.

### Results

**Table 1: Age distribution among patients:**

Age group (years)	No. of Patients	Percentage
≤30	07	06.25
31-40	65	58.04
41-50	26	23.21
51-60	10	08.93
>60	04	03.57
Total	112	100

The table no. 1 describes age profile of the patients. Among 112 patients, majority were in age group 31-40 years (58.04%) with mean age of  $37.48 \pm 8.03$  years.

**Table 2: Symptoms among patients**

Clinical symptoms	Frequency (n=112)	Percentage
White discharge	83	74.10
Intermenstrual bleeding	11	09.82
Post-coital bleeding	09	08.03
Post-menopausal bleeding	07	06.25
Pelvic pain	06	05.36

(\*Multiple response present)

The majority of patients had underlying disorder of white discharge i.e. 74.10%, followed by intermenstrual bleeding (9.82%), Post-coital bleeding (8.03%) and Post-menopausal bleeding. (6.25%)

**Table 3: Correlation of Colposcopy and histopathological findings:**

Colposcopy findings	Histopathological findings		P value
	Abnormal (%)	Normal (%)	
Abnormal	63 (84.0)	11 (29.7)	X <sup>2</sup> =32.55 P<0.0001
Normal	12 (16.0)	26 (70.3)	
Total	75 (100)	37 (100)	

The correlation between colposcopy and histological findings shows statistical significance. (P<0.0001)

**Table 4: Effectiveness of Colposcopy findings**

Colposcopy findings	Percentage
Sensitivity	84%
Specificity	70.27%
PPV	85.14%
NPV	68.42%
Accuracy	79.46%

The table no. 4 shows that, the colposcopy shows sensitivity of 84%, specificity of 70.27% with accuracy of 79.46% when compared to histological findings.

### Discussion

The incidence of cervical cancer can be reduced by as much as 80% if the quality, coverage and follow-up of screening methods are of high standard. Cytology based screening programs have achieved very limited success in developing countries like India due to lack of trained personnel, laboratory facilities, equipment's, high cost of services and poor follow-up. It has become necessary to find out alternative screening procedure to cytology which has high sensitivity and specificity.

In the present study, among 112 patients, majority were in age group 31-40 years (58.04%) with mean age of 37.48± 8.03 years.

Similar findings were observed in Upadhyay J et al[5] study, the age of patients ranged from 20 to 70 years with the mean age of 36.4 years. The results of our study were also comparable to study by

Joshi C et al[6] where the age range was 20 to 65 years, Similar distribution of patients has been observed in other studies also [7,8].

In the present study, the majority of patients had underlying disorder of white discharge i.e. 74.10%, followed by intermenstrual bleeding (9.82%), Post-coital bleeding (8.03%) and Post-menopausal bleeding. (6.25%)

Upadhyay J et al[5] also observed white discharge per vagina was the most common symptom with 37(74%) cases, which was comparable to studies done by Chaudhary RD et al [9] and Bhalerao A et al [10].

The present study shows, the correlation between colposcopy and histological findings statistical significance (P<0.0001) with sensitivity of 84%, specificity of 70.27% with accuracy of 79.46% of colposcopy when compared to histological findings.

T. S. Savitha et al[11] in a study observed sensitivity and specificity of colposcopy was 85% and 83.75% respectively. This finding was in accordance to present study. Upadhyay J et al[5] also observed

sensitivity of colposcopy was 94.1% and specificity was 87.8%. The accuracy of colposcopy in the present study was lower than findings of Maziah et al [12] (94%) and Ashmita et al [13] (86.54%).

The abnormal colposcopic findings showed a good correlation to histopathology than the correlation of cytology with histopathological findings. Thus, it is suggested that although the colposcopy served mainly to find the best place to proceed to biopsy, it also helped to improve the diagnosis of cervical intraepithelial lesions.

More studies that allow the determination of sensitivity and specificity of colposcopy are needed for a better assessment of the importance of colposcopy as a method of detecting cervical intraepithelial neoplasia and not just as a resource for locating the best site for biopsy.

### Conclusion

The high specificity and sensitivity of colposcopy indicated that colposcopy has an important role in the diagnosis of cervical intraepithelial neoplasia.

### References

1. Dasari P. A grossly abnormal cervix: Evidence for using colposcopy in the absence of a squamous intraepithelial lesion by the conventional Papanicolaou's test. *Journal of Gynecologic Surgery*. 2011 March; 27(1).
2. WHO. International Agency for Research of Cancer (IARC) marks Cervical Cancer Awareness Month 2022. [www.iarc.who.int](http://www.iarc.who.int)
3. Singh SL, Dastur NA, Nanavat MS. A comparison of colposcopy and the Papanicolaou smear: sensitivity, specificity and predictive value. *Bombay Hospital Journal*. 2000 July; 42 (3).
4. Pimple SA, Amin G, Goswami S, Shastri SS. Evaluation of colposcopy vs cytology as a secondary test in triage women was found to be positive on the visual inspection tests. *Indian J Cancer*. 2010 Jul-Sep; 47(3):308-13.
5. Upadhyay J, Garg S. Correlation of Pap smear and colposcopic finding with directed biopsy in detection of cervical neoplasm. *Pathology Update: Trop J Path Micro* 2017;3(4):396-400.
6. Joshi C, Kujur P, Thakur N. Correlation of Pap Smear and Colposcopy in Relation to Histopathological Findings in Detection of Premalignant Lesions of Cervix in A Tertiary Care Centre. *Int J Sci Stud* 2015; 3:55-60.
7. Pimple SA, Amin G, Goswami S, Shastri SS. Evaluation of colposcopy vs cytology as secondary test to triage women found positive on visual inspection test. *Indian J Cancer*. 2010 Jul-Sep; 47 (3): 308-13.
8. Boicea A, Pătrașcu A, Surlin V, Iliescu D, Schenker M, Chiuțu L. Correlations between colposcopy and histologic results from colposcopically directed biopsy in cervical precancerous lesions. *Rom J Morphol Embryol*. 2012; 53 (3 Suppl): 735-41.
9. Chaudhary RD, Inamdar SA, Hariharan C. Correlation of diagnostic efficacy of unhealthy cervix by cytology, colposcopy and histopathology in women of rural areas. *Int J Reprod Contracept Obstet Gynecol* 2014; 3:213-218.
10. Bhalerao A, Kulkarni S, Ghike S, Kawthalkar A, Joshi S. Correlation of pap smear, colposcopy and histopathology in women with unhealthy cervix. *J South Asian Feder Obst Gynae* 2012; 4:97- 98.
11. Savitha TS, Sapna W. A comparison of pap smear, colposcopy and colposcopy directed biopsy in evaluation of unhealthy cervix. *Journal of Evolution of Medical and Dental Sciences*. 2015 Mar 12;4(21):3639-48.
12. Maziah AM, Sharifah NA, Yahya A. Comparative study of cytologic and colposcopic findings in preclinical

- cervical cancer. Malays J Pathol 1991; 13:105-108.
13. Ashmita D, Shakuntala PN, Rao SR, et al. Comparison and Correlation of Pap smear, Colposcopy and Histopathology in Symptomatic Women and Suspicious Looking Cervix in a Tertiary Hospital Care Centre. Int J Health Sci Res 2013; 3:50-59.