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Original Research Article

## Prospective comparative study between colposcopy and histopathology for diagnosis of CIN and carcinoma cervix

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### ABSTRACT

**Background:** Cervical cancer develops from precursor lesions and detection of these lesions is of utmost importance. The detection of precancerous lesions is made with help of screening tests most important include PAP smear and colposcopy. So we conducted this study to understand the role of colposcopy in down staging of Carcinoma cervix.

**Methods:** We performed a prospective study between Jan 2018 to Dec 2018 on 180 subjects chosen from patients who sought consultation for various gynaecological complaints between age group of 18-60 years. A Pap smear followed by a colposcopy was performed and colposcopic directed biopsies were taken and subjected to histopathological examination.

**Results:** Colposcopy had a sensitivity of 83.3%, specificity of 78.5%, PPV of 68.9% for CIN 1. It had a sensitivity of 90.9%, specificity of 95.2%, PPV of 83.33% for CIN 2 and 3 when correlated with gold standard histopathology which is much higher as compared to Pap smear.

**Conclusions:** Colposcopy is an effective tool in down staging of Carcinoma cervix.

**Keywords:** Carcinoma cervix, Cervical biopsy, CIN, Colposcopy, Pap smear

### INTRODUCTION

Cervical cancer is the fourth most common cancer in the world and the fourth most common cause of death from cancer in the world.<sup>1</sup> Almost 70% of global burden occurs in less developed countries where it is the second most commonly diagnosed cancer and the third leading cause of death among women.<sup>2-4</sup> Because recent studies clearly substantiate the view that cervical cancer develops from well defined pre invasive lesion and Carcinoma cervix is preventable and curable if detected early or in pre invasive stages. The detection of this pre cancerous lesion is of utmost importance.

Pre malignant lesions are abnormal cells or epithelium in area surrounding the transformation zone of uterine

cervix. They progress through cellular atypia to various grades of dysplasia of CIN, before progressing to invasive cancer.<sup>5</sup> The basic principle of screening is to sort out from large group of healthy person those likely to have the disease or at increased risk of disease under study and to bring those who are 'apparently abnormal' under medical supervision and treatment.

The long pre-clinical stage of Carcinoma cervix during which the precursor lesions can be treated conservatively and successfully makes cervical cancer an ideal target for screening and treatment. India accounts of world's one sixth of population and bears one fifth burden of Ca cervix. There are 1, 30, 000 new cases of Ca cervix every year and the disease is responsible for 20% of all female death.<sup>6</sup>

In India every 7<sup>th</sup> minute a female dies of cervical cancer and these Figures are expected to double by 2020 if no action is taken.<sup>7</sup> The Pap smear is the primary screening tool for cervical cancer which has a low sensitivity and specificity. The simultaneous use of cytological studies and screening colposcopy has shown to increase the rate of the cervical cancer detection. A colposcopic evaluation and guided biopsy remains a critical diagnostic step for women with squamous intraepithelial lesions in order to identify the women who require treatment. Hence there is obvious need to subject women with clinically unhealthy cervix to colposcopy and directed biopsy. The study was done to evaluate the role of colposcopy in down staging of Ca cervix.

Objectives of this study were to identify unhealthy cervix and pre invasive lesions by colposcopy based on Reid's index. To correlate colposcopic findings with histopathological findings. And to detect carcinoma cervix in early stage.

## METHODS

This was a prospective study conducted at Smt. Kashibai Navale Medical College and General Hospital, Narhe, Pune, Maharashtra from January 2018 to December 2018.

Totally enrolled were 180 eligible women who visited gynaecological OPD fulfilling the inclusion criteria.

A routine Pap smear was taken of all 180 subjects followed by colposcopic examination. Pap smear was examined by expert pathologist in department of pathology in Smt. Kashibai Navale Medical College, Narhe, Pune. A colposcopic impression was created on COLpro 222DX-OZ VIEW based on Reid's index and colposcopic directed biopsies were taken which were later subjected to histopathological examination. All the tests were done free of cost. No sponsorship was taken.

### Inclusion criteria

- Patient between age group 18-60 years who came for various gynaecological complaints.
- Patient willing to participate in the study.

### Exclusion criteria

- Women who were previously diagnosed with carcinoma cervix
- Menstruating women
- Pregnant females
- Patient not willing to participate.

## RESULTS

Colposcopy was performed on all 180 women out of which 84 showed abnormal findings. Colposcopic findings were reported positive according to modified

Reid's score if revealed lesions of CIN 1 and above (Table 1).

**Table 1: Colposcopy score.**

Reid's score	Impression	Total	Percentage
Up to 4	CIN 1 and 2	58	32.2%
5-8	CIN 3	24	13.33%
	Ca cervix	2	1.1%
	Benign lesions	19	10.5%
	Normal	77	42.7%
<b>Total</b>		<b>180</b>	

Colposcopy directed biopsies were taken which revealed the following results (Table 2).

**Table 2: Biopsy findings.**

Biopsy findings	Total	Percentage
Mild dysplasia	48	26.66%
Moderate to severe dysplasia	22	12.22%
Squamous cell carcinoma	2	1.1%
Benign	36	20%
Normal	72	40%
<b>Total</b>	<b>180</b>	

It was found that the sensitivity of colposcopy for CIN 1 was 83.33%, specificity was 78.57%, PPV of 68.96%.

For CIN 2 and 3, the sensitivity to diagnose was 90.9%, specificity was 95.2%, PPV of 83.33% which is far better than Pap smear results in all studies.

## DISCUSSION

Data obtained confirmed that colposcopy performed well in differentiating low grade lesion with high grade lesion with a PPV of 68.96%. It comparatively poorly differentiated between normal and low grade lesions.

It gave a few falsely positive results giving a specificity of 78.57% which is much higher than the routine Pap smear. Sensitivity was 83%.

Moss EL et al, in a study on 469 patients to determine whether colposcopy is reliable in diagnosing Cervical intraepithelial lesions in women who have undergone a previous excision biopsy the sensitivity and specificity of colposcopy for any cervical disease were 93.9%.<sup>8</sup>

Boonlikit S, a 100 patient study the correlation between Reid's colposcopic result and histological result from the biopsy, the correlation was around 89%.<sup>9</sup>

While interpreting values from different studies we might take into consideration that the performance of colposcopy largely depends on training, experience and skills of colposcopist and accuracy of cytology requires laboratory services and skilled cytologists.

Limitations of the study was to it requires a gynaecologist to interpret the results. Costly as compared to Pap smear and acetowhite staining.

Non availability at PHCs and CHCs and unavailable for economically and socially backward women who are most prone to Ca cervix.

## CONCLUSION

This study demonstrated high accuracy and correlation between colposcopy and histopathology comparable with other studies in past.

It also proved beneficial in differentiating low grade lesions from high grade lesion and hence is an effective tool for downstaging of Ca cervix.

It has an advantage of being an office procedure and giving a spot diagnosis and treatment modalities like cryotherapy can be offered in the same sitting.

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