

# Comparison of Methods Used For Screening of Cervical Preinvasive Lesions

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**Objectives** – To compare the sensitivity and specificity of various screening methods used for the diagnosis of cervical preinvasive lesions keeping colposcopic directed cervical biopsy as the gold standard. **Methods** – One hundred and fifty OPD patients who had suggestive history and clinical suspicion were subjected to Pap smear test and visual inspection of the cervix after application of acetic acid. All patients were subjected to colposcopy. Colposcopic directed cervical biopsy was done in cases with abnormal areas on colposcopy. **Results** – The sensitivity and specificity of Pap smear test was found to be 75% and 99.3% respectively. The sensitivity and specificity of visual inspection after application of acetic acid was found to be 100% and 87%. There were 13 cases with colposcopic abnormalities like punctations and mosaicism, out of which 12 showed preinvasive changes on biopsy (92.3%). **Other** cases which mainly had acetowhite areas on colposcopy, had inflammatory pathology on biopsy. **Conclusions** – Visual inspection after application of acetic acid had better sensitivity than Pap smear but specificity was not as good. The cases that had only acetowhite areas without any other colposcopic abnormality usually revealed inflammatory pathology on biopsy.

**Key words** : Pap smear, colposcopy, acetic acid test.

## Introduction

Cancer of the cervix is one of the leading causes of cancer deaths in women in the world<sup>1</sup>. In India it is the commonest cancer accounting for 26.1 – 43.8% of all cases<sup>2</sup>. Cervical cancer has been known to take years to progress from preinvasive to invasive stage if it does progress at all. The disease has very good chances of cure if detected early.

So there has always been a search for a test which would effectively diagnose this disease in early stages. Aim of our study was to compare the sensitivity and specificity of the various screening methods available to us for the screening of preinvasive lesions of the cervix.

## Materials and Methods

One hundred and fifty patients from the Out Patient department with complaints of recurrent episodes of profuse vaginal discharge, blood stained discharge, postcoital bleeding or intermenstrual bleeding with a suspicious looking cervix on per speculum examination were included in the study.

Pap smear test was done in all patients. This was followed by visual inspection of the cervix after application of 5% acetic acid and the test was considered to be positive if acetowhite areas were seen.

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Colposcopy was then done on all patients by the same colposcopist. Colposcopic directed cervical punch biopsy was taken from abnormal areas seen if any, seen on colposcopy and was sent for histopathology.

All cytological and histopathological specimens were analysed by the same pathologist. All results were then compiled and sensitivity and specificity of the test determined.

## Results

The sensitivity and specificity of Pap smear test was determined to be 75% and 99.3% respectively (Table I).

**Table I : The results of Pap Smear Test (N = 150)**

	Preinvasive lesion present on colposcopic directed biopsy	Preinvasive lesion absent on colposcopic and directed biopsy
Pap smear positive for preinvasive disease	8	1
Pap smear negative for preinvasive disease	4	137

**Table II : The results of Visual Inspection after Application of acetic acid (VIA) (N = 150)**

	Preinvasive lesion present on biopsy	Preinvasive lesion absent on biopsy
VIA positive	12	18
VIA negative	0	120

The sensitivity and specificity of visual inspection after application of acetic acid was determined to be 100% and 87% respectively (Table II).

Colposcopy was positive in only 30 cases, all of which also had acetowhite areas. Biopsy was done in these 30 cases only. The other 120 cases had no colposcopic abnormality and biopsy was not done in them (Table III).

**Table III : Findings on Colposcopy and Biopsy (N = 30)**

Findings	Number of Patients	Biopsy diagnosis
Acetowhite areas only	11	Chronic cervicitis in 11
Acetowhite areas s/o HPV infection	6	Chronic cervicitis with condylomata in 4, chronic cervicitis in 2
Acetowhite areas with punctations	8	Chronic cervicitis with condylomata in 1, preinvasive disease in 7
Acetowhite areas with mosaicism	5	Preinvasive disease in 5

There were 13 cases that has colposcopic findings like punctations and mosaicism suggestive of preinvasive disease. Out of them 12 cases showed preinvasive disease on histopathology of the biopsy. Thus 92.3% of the cases with colposcopic findings suggestive of preinvasive disease actually had preinvasive disease on biopsy. Most of the other cases with only acetowhite areas of HPV changes on colposcopy had inflammatory pathology on biopsy. (Table III and IV).

**Table IV : Findings on Biopsy (N = 30)**

Findings	Number of patients
Chronic cervicitis	13
Chronic cervicitis with condylomata	5
Mild dysplasia	9
Moderate dysplasia	0
Severe dysplasia	3

### Discussion

The most widely used test as of today is the Pap smear test and it is very simple and acceptable, but it has

been found to have high false negative results ranging from 10 – 20%<sup>3</sup>. It has a high specificity of 99% but sensitivity is about 80%. This limits its use as a diagnostic test<sup>4</sup>.

Visual inspection after application of acetic acid is a safe, easy and effective technique that can be easily taught to paramedical workers. It can be used along with Pap smear and has been shown to detect changes otherwise missed by Pap smear test<sup>5</sup>. A study by Londhe et al<sup>6</sup> reported that it has a higher sensitivity than Pap smear test but its specificity was 54% only as compared to 96% of Pap smear test. Colposcopy has been known to have excellent correlation with histopathology<sup>7</sup>. Colposcopy picked up 97% of the cases of CIN<sup>8</sup> and had a false positive rate of only 11%<sup>9</sup>.

Colposcopy improves diagnostic accuracy and precludes the need of cone biopsies as it localizes abnormal areas which need to be biopsied.

### References

1. WHO (1986) Control of cancer of cervix uteri, A WHO meeting – *Bulletin of WHO* 1986; 64: 607 – 18.
2. National Cancer Registry Programme. *Biennial report (1988 – 1989) ICMR. New Delhi* 1992.
3. Ollayos C.W.: Update of Papanicolaou smear - New issues for the 1990s. *Mil. Med.* Aug 1997; 162 521 – 3.
4. Di Bonita L, Falconieri G, et al. Cervical cytopathology – An evaluation of its accuracy based on cytohistologic comparison. *Cancer* 1993 72: 3002 – 6.
5. Le LV, Bracklurzen F, Janzer Steele R et al. Acetic acid visualization of cervix to detect cervical dysplasia. *Obstet Gynecol* 1993; 81: 293 – 5.
6. Londhe M, George S, Seshadri L: Acetic acid fo detection of cervical intraepithelial Neoplasia. *In: Cancer.* 1997; 34: 88 – 91.
7. Davison JM, Marty JJ: Detecting premalignant cervical lesions: Contribution of screening colposcopy to cytology. *J. Reprod. Med.* 1994; 39: 338 – 92.
8. Milla Villeda RH, Alvard G, Sanchez AL: Colposcopy and cervical biopsy in patients with routine Pap smear. *Cervical Obst. Mek.* 1997; 65: 235 – 8.
9. Staffl A, Mattingly R: Colposcopic diagnosis c cervical neoplasia. *Obstet Gynecol* 1973; 41: 168.