

Correlation of Visual Inspection With Acetic Acid (VIA) and Colposcopy Findings With Papsmear in Evaluation of Unhealthy Cervix

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Abstract

Aim and objective: To correlate the findings of an unhealthy cervix in Visual inspection acetic acid (VIA), colposcopy and pap smear. **Materials and methods:** Present study is a hospital based study on women of age 21-65 years with abnormal symptoms and clinical findings of an unhealthy cervix and was carried out in Department of Obstetrics & Gynaecology. Ethical clearance was obtained for this study from the institution. **Results:** The sensitivity and specificity of Pap smear were found to be 34% and 94%. Simultaneously, colposcopy has high sensitivity and low specificity, i.e., 92% and 28%, respectively. On the other hand, the sensitivity and specificity of VIA and VILI are comparable, i.e., 64% and 68% and 42% and 40%, respectively. Although it shows a low sensitivity, Pap smear shows a high positive predictive value, i.e., 85% compared to colposcopy (56.1%) and visual inspection methods (55%). Colposcopy alone has the highest diagnostic accuracy (65%) over all other screening methods performed alone or in combination. **Conclusion:** We should combine Pap smear, a screening test, and colposcopic examination, which is used in suspected cases. In case of any abnormal findings, a colposcopic directed biopsy should be taken. Combined methods always lead to an increase in the sensitivity and hence maximizes the detection rate.

Keywords: Acetowhite, comparison with colposcopy

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Introduction

Carcinoma cervix is the most frequent (80%) of all the genital tract cancers. In India, cancer cervix is the most common genital malignancy. It is the third most common cancer globally. Over 5,00,000 new invasive cervical cancer cases are diagnosed annually worldwide^{1,2}.

Cancer cervix is the most common cause of cancer death among women in developing countries³. In India, 96,922 women are diagnosed with cervical cancer, and 60,078 die from this disease every year. In India, it is the second-most common cancer in women aged 15-44 years⁴.

The preinvasive disease of the cervix, which denotes changes that are confined to the cervical epithelial cells, was introduced in 1947. Cancer cervix has a long phase of the preinvasive disease that progresses from cellular atypia to various grades of dysplasia or Cervical Intraepithelial Neoplasia before progressing to invasive cancer.

Factors like easy accessibility of the cervix, the propensity of cervical epithelial cells to exfoliate, the rapid turnover of epithelial cells, a wide spectrum of histopathological changes, the prolonged natural history of disease provide the best potential for control of the progression of the disease by the screening of the population.

Cytological evaluation of the cervix by Pap smear, visual inspection of the cervix with acetic acid and Lugol's iodine, colposcopy, and

colposcopically directed biopsies are the methods by which the cervix can be studied for evidence of premalignant changes⁵.

Cytological abnormality can be confirmed by histopathology of Colposcopically biopsied lesions⁶.

The major risk factors for cervical carcinoma are exposure to an oncogenic group of human papillomavirus (HPV). The other risk factors for cervical disease cancer are early age at marriage, exposure to other STDs (sexually transmitted diseases) such as human immunodeficiency virus (HIV) and Chlamydia, multiple sex partners, smoking, and oral contraceptive pills⁷.

The cervix's easy accessibility for clinical examination, application of Cytology, and tissue sampling procedures had led to extensive screening programs for early detection and treatment of the disease. The liberal use of Pap smear and colposcopy in the developed countries has caused a shift to preinvasive disease from invasive disease, thereby reducing mortality⁸.

Type of Study

Prospective study conducted in ASRAM, during the period from September 2018 to September 2020. Study was conducted to correlate the findings of an unhealthy cervix on Visual Inspection with Acetic Acid (VIA), Colposcopy and Papsmear

Study group: 100 patients

Inclusion Criteria

- Age-21-65 years.
- Women with symptoms like abnormal vaginal discharge, post-coital bleeding, and inter-menstrual bleeding.
- Women with a clinically unhealthy cervix (erosion, bulky cervix, bleeding on touch, ulcer, simple leukoplakia, keratinization).
- Women with PAP smear showing dysplasia.

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Exclusion Criteria

- Women with bleeding per vagina at the time of examination.
- Women with frank invasive cancer.
- Women underwent hysterectomy.
- Pregnant women.
- Women on oral contraceptive pills.
- Non-co-operative patients.
- Unmarried women

Method

Basic steps of examination include:

1. Written informed consent and counseling
2. History

3. Physical examination
4. Local examination of the vulva
5. Speculum examination of cervix and vagina
6. Pap smear – Conventional method using Ayre's spatula and fixed using 95%alcohol
7. Normal saline colposcopy
8. Inspection of the cervix after application of 5% acetic acid
9. Examination through the green filter
10. Staining the cervix with Lugol's iodine
11. Colposcope directed biopsy using a cervical punch biopsy forceps
12. Application of Monsel's paste for hemostasis.

Results**Table 1: Age Distribution**

Age Group	Number	Percentage
21-29 years	15	15%
30-39 years	39	39%
40-49 years	33	33%
>50 years	15	15%

Most patients in this study belong to the age group of 30-50 yrs.

Table 2: Socio-Economic Status

SES	Number	Percentage
Upper -I	5	5%
Upper - middle II	14	14%
Lower- Middle III	24	24%
Upper Lower IV	48	48%
Lower V	9	9%

The greater percentage belonged to the upper lower class I.e 48%

Table 3: Symptoms

Symptoms	Number	Percentage
White discharge	70	70%
Pain abdomen	26	26%

70% presented with white discharge, 36% with backache abdominal pain, 5% with a history of menorrhagia, and 8% with post-coital bleeding.

Table 4: Speculum Findings

Colour of Liquor	Number	Percentage
Hypertrophied cervix	62	62%
Bleeds on touch	33	33%
Erosion of cervix	31	31%

Out of 100 patients, hypertrophied cervix was seen in 62% cases, 33 patients had bleeding on touch, 31 patients had erosion of the cervix, and congested cervix was seen in 12 patients. 4 patients had a growth on the cervix.

Table 5: Colposcopy Findings

Colposcopy	Number	Percentage
Normal	18	18%
Abnormal	82	82%
A) Acetowhite areas	45	45%
B) Mosaic	13	13%
C) Punctations	21	21%
D) Atypical vessels	3	3%

In my study, 18% showed normal findings, and 82% showed abnormal findings.

The sensitivity and specificity of Pap smear were found to be 34% and 94%. Simultaneously, colposcopy has high sensitivity and low specificity, i.e., 92% and 28%, respectively. On the other hand, the sensitivity and specificity of VIA and VILI are comparable, i.e., 64% and 68% and 42% and 40%, respectively. Although it shows a low sensitivity, Pap smear shows a high positive predictive value, i.e., 85% compared to colposcopy (56.1%) and visual inspection methods (55%). Colposcopy alone has the highest diagnostic accuracy (65%) over all other screening methods performed alone or in combination.

Discussion

The GLOBOCAN 2018 estimates that approximately 5,70,000 new cases and 3,11,000 deaths occurred from cervical cancer worldwide. Of the new cases detected, 86% occur in developing countries and

14% in developed countries There are almost 96,922 new cases in India. Nearly one-fourth of the world's cervical cancer deaths were in India⁵⁸ accounting for 60,000.57 Globally, the average age at diagnosis of cancer Cervix was 53 years, and the average age at death due to cervical cancer was 59 years. The incidence peaked at ages 50–54 years at the global level⁹. In a study by Rekha et al., the mean age of the study population was 42.68±11.69 years¹⁰ In a study conducted by Mohanty et al. had 55%¹¹. Ashmita D had 46.11% of women from low socioeconomic class. Thus, low income favors an increase in cervical cancer¹². In a study by Vaidya et al., Excessive vaginal white discharge was proved to be a risk factor in CIN's development¹³. In 2020, Rashmi et al. studied that Whitish discharge was the most common presenting complaint (54%)¹⁴. In a study by Durdi GS et al.,

out of 254 patients having abnormal colposcopic findings, 29.8% were CIN I, 1.9% CIN II and 7.4% CIN III¹⁵. In a study by PapaDasari, the incidence of CIN I was 13%, and that of CIN 2/3 was 11%¹⁶. In 2010, Pimple SA et al. made an evaluation of colposcopy vs. cytology as a secondary test to triage women who were found positive on visual inspection test. The colposcopic impression was CIN I changes in 33.8% of cases, CIN II-III in 8.6% cases, and invasive carcinoma in 2.7% cases. Histopathology findings were reported as follows: benign in 81.6%, and CIN I in 5.8% cases, CIN II in 2.9% cases, CIN III in 2.6% cases, and 53 invasive carcinomas in 2.9% cases. The sensitivity estimates for low- and high- threshold Colposcopies were 58% and 74.5%, respectively, and those of specificity was 57.5% and 92.9%, respectively¹⁷. In a study conducted by Ramesh G. et al., the sensitivity of colposcopy was 83.33%¹⁸, and that of Malur PR et al. was 80%¹⁹. Moss EL et al., in 2009, in a study to determine whether colposcopy is reliable in diagnosing cervical intraepithelial neoplasia in women who underwent a previous cervical excision biopsy conducted on 469 patients, reported the sensitivity and the specificity of colposcopy for any cervical disease were 93.9% and 51.9%, respectively²⁰. In a meta-analysis conducted by Mustafa et al. in 2016, colposcopy's diagnostic accuracy had a sensitivity from 29% to 100% and specificity from 12% to 88%²¹

Conclusion

- The main aim is to screen by simpler techniques before the invasive cancer because it has a long preinvasive stage.
- Visual inspection of the cervix by simple speculum examination is an essential step in detecting an unhealthy cervix.
- VIA and VILI are of low cost and are more sensitive.
- Cytology is an easy and simple method of cancer screening and can be used for mass screening.
- Colposcopy is an effective cancer detection method with higher sensitivity, but time-consuming, needs special training and requires expensive equipment. Hence cannot be used for mass screening.
- The colposcopic scoring system is essential to increase specificity and decrease the false-positive rate of colposcopy and decide the necessity of performing biopsy on a pathological colposcopic result to reduce unnecessary biopsies.
- Hence, we should combine Pap smear, a screening test, and colposcopic examination, which is used in suspected cases. In case of any abnormal findings, a colposcopic directed biopsy should be taken.
- Combined methods always lead to an increase in the sensitivity and hence maximizes the detection rate.
- Colposcopy at present is placed between pap smear and colposcopic directed biopsy, and it is complementary to a pap smear for detection of early preinvasive lesions of carcinoma cervix.
- From this study, we conclude that there is a need to adopt alternative strategies that are more effective, practical, feasible, and whose results are immediately available for symptomatic and patients having unhealthy cervix.

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