



COMPARISON BETWEEN VISUAL INSPECTION OF CERVIX WITH ACETIC ACID (VIA) AND COLPOSCOPY IN SCREENING OF CERVICAL CANCER IN RURAL SETUP

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Article Received on 21/05/2017

Article Revised on 11/06/2017

Article Accepted on 01/07/2017

ABSTRACT

Introduction: In developing country like India cervical malignancy is a common, preventable and curable cause of morbidity and mortality. Worldwide VIA after PAP smear is the most commonly used screening test for cervical lesions. Colposcopy guided biopsy has been defined to be the gold standard method in diagnosing precancerous lesions of the cervix & used in evaluation and management of cervical lesions. In present study we compare clinical performance of Visual Inspection With acetic acid (VIA) and colposcopy, in the screening for cancer cervix in low resource settings. **Method:** A cross sectional study was conducted in a tertiary care referral institute in 100 symptomatic women of 30-70 years. Colposcopy and VIA was done for all 100 women who came with complaints of white discharge per vagina, intermenstrual, or postcoital bleeding, etc. Final correlation of the colposcopy and VIA were based on biopsy reports. **Result:** VIA and colposcopy has almost equal sensitivity (95.24%) & (90.48%) but VIA has low specificity than colposcopy (44.19%) & (67.44%). **Conclusion:** It is evident that colposcopy is definitely more sensitive and accurate than VIA. By combining colposcopy with VIA, we can maximize the sensitivity and specificity of cancer cervix screening.

KEYWORDS: Malignancy, VIA, colposcopy, Biopsy.

INTRODUCTION

With changes in lifestyle and demographic profile non communicable diseases are emerging to be an important healthy problem that demands appropriate control programme before they assume epidemic proportion. Cervical cancer is one of them.^[1]

Cervical cancer usually kills women at prime of their life. For a family, cervical cancer is a tragedy. For nation, the disease is a serious health and economic burden. India faces a huge toll of death due to cancer as majority of patients are diagnosed with cancer very late and report for treatment at very advanced stage. Even though we have effective screening technique for early detection and diagnosis of cervical cancer, there are no organised screening programmes at national level.

Worldwide, cervical cancer is both the fourth-most common cause of cancer and the fourth-most common cause of death from cancer in women.^[2] There are an estimated 528,000 cases of cervical cancer, with 266,000 deaths. This is about 8% of the total cases and total deaths from cancer.^[3] About 70% of cervical cancers occur in developing countries. In low-income countries, it is

the most common cause of cancer death. In developed countries, the widespread use of cervical screening programs has dramatically reduced rates of cervical cancer. In India, cervical cancer is the most common woman-related cancer, followed by breast cancer. 80% of the new cervical cancer cases occur in developing countries, like India, which reports approximately one fourth of the world's cases of cervical cancer each year.

Cervical cancer is preceded by a long phase of premalignant cytological changes, known as cervical intraepithelial neoplasia (CIN) which takes a period of 15-20 years for the invasive cancer to develop. The pathological changes in CIN are microscopically a spectrum of events progressing from cellular atypia to various grades of dysplasia before leading to invasive carcinoma. Thus, cervical cancer can be prevented, if, cellular changes are detected and treated in early stage.^[4] The reasons for higher prevalence of cervical cancer in developing countries are lack of resources, lack of awareness, lack of effective screening programs and poorly organized health system aimed for detecting pre cancerous condition before they progress to invasive cancer. In developing countries, cervical cancers are

mostly incurable at the time of detection due to the advanced stage. Thereby, the need for a cost effective, mass approach for effective cervical cancer screening programs is eminent.

Several screening modalities are now available for early detection of cervical cancer and its precursors which differ in regard to their test characteristic, feasibility and economic considerations. Cytology screening programmes in several developed countries have been associated with impressive reduction in cervical cancer burden. The use of acetic acid during visual examination of cervix is termed as visual inspection with acetic acid (VIA). VIA has demonstrated high sensitivity for detecting cervical cancer but is limited by low specificity^{[5][6][7]}, VIA requires minimal resources and training. It has also been recommended by WHO, as an alternative to cytology to pick up a patient at risk for cancer cervix.^[8]

Colposcopy is a worldwide accepted method for detection of early cervical neoplasia. The cervical epithelium is directly evaluated through the colposcope, with the main goal to detect abnormal epithelium, to identify the area of epithelium with the highest degree of disease and to direct biopsies to that area or areas as needed.^[9]

Against the above background, the above study was taken up to find out the possible correlation between VIA and colposcopic findings.

MATERIALS AND METHOD

Study Population

Women between the age group 30-50 years, who attended the gynecology OPD, at Acharya Vinobha Bhave Rural Hospital, Sawangi (Wardha).

Inclusion Criteria

Women in 30-70 years age group who attended the gynaecology department for routine check up.

Exclusion Criteria

1. Women with age less than 30 years and more than 70 years.
2. Unmarried
3. Pregnant women.

4. Active vaginal bleeding
5. Women with frank growth of cervix
6. Post hysterectomy patient
7. Sexually inactive women
8. Women who have already undergone treatment for cervical lesions

METHODOLOGY

□□□□□□□□ Sample size -100

- Study design –Cross Sectional Study
Study period- One year
- Informed consent was included for women who fulfilled the inclusion criteria and enrolled in the study.

Ethical committee approval- After getting the ethical approval, our study was started.

A careful history including demographic data like age, socioeconomic status, education, parity, age at marriage of the patient was taken. Information was noted on proforma.

VISUAL INSPECTION WITH ACETIC ACID

A solution of 5% acetic acid was then applied to cervix using a cotton swab. Applying the cervix acetic acid several times helps in the coagulation and removal of mucous. The secretions are gently wiped off. The cervix was then examined for 1-2 minutes under an adequate light source.

Positive VIA is detection of distinct acetowhite area.

Negative VIA is considered if no acetowhite areas were recorded, or if acetowhite appearance was transient.

COLPOSCOPY

All patients underwent colposcopy using the Dr cam scope colposcope model 150 FC with magnification between 10x to 12.5 x was used. In colposcopy saline was used initially to clean the surface and then vascular lesion and surface lesion are assessed. Abnormal vessels are examined with aid of green filter. The colposcopy findings were recorded and reported according to Modified Reid's Index.

Table: 1 Modified Reid's colposcopic Index- Adapted from Reid R, Scalzi and International Agency for Research in Cancer (IARC) manual.^[10]

Colposcopy Sign	Score 0	Score 1	Score 2
Margin	Condylomatous or Micropapillary contour. Flocculated or feathered, jagged, angular, satellite lesion, AWA beyond original squamocolumnar junction	Regular lesion with smooth indistinct borders	Rolled, peeling edges, sharp margins
Colour	Shiny, snow white, areas of faint (semi transparent) whitening.	Intermediate shade (Shiny but grey white)	Dull, oyster grey
Vessels	Uniform, fine calibre non dilated capillary loops fine punctuation or mosaic	Absence if surface vessels	Definite, coarse punctuation or mosaic.

Iodine Staining	Any lesion staining Mahogany brown; mustard yellow stains by a minor lesion (by first three criteria)	Partial iodine uptake (mottled pattern)	Mustard yellow staining of a significant lesion (an acetowhite area scoring 3 or more points by first three criteria).
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Normal colposcopy report was considered if REID'S INDEX was less than 3.

Abnormal colposcopy report was considered if REID'S INDEX was more than 3.

The patients who tested positive on any of screening tests underwent biopsy (Gold standard method). Biopsy was done using a punch biopsy forceps from abnormal area. The excised tissue obtained was fixed in 10% formalin and sent to pathology department of AVBRH.

RESULTS

Table 2. Distribution of Patients According to Age

AGE DISTRIBUTION	NO. OF PATIENT (n=100)	PERCENTAGE (%)
30-40	21	21
41-50	38	38
51-60	28	28
61-70	13	13
TOTAL	100	100

Table 3 Distribution of patients by Parity

PARITY	NO. OF PATIENT(n=100)	PERCENTAGE(%)
PRIMIPARA	19	19
2-4	66	66
>4	15	15
TOTAL	100	100

Table 4: Distribution of the cases according to Active married life

ACTIVE MARRIED LIFE(IN YEARS)	NO.OF PATIENTS (n=100)	PERCENTAGE (%)
<5	8	8
5-9	5	5
10-14	31	31
15-19	11	11
20-24	26	26
>24	19	19
TOTAL	100	100

Table 5: Results Of Cervical Biopsy

HPE REPORT	NO. OF PATIENTS(n=78)	PERCENTAGE(%)
Cervicitis	43	55.1
LSIL	30	38.5
HSIL	3	3.8
CIS	2	2.6
TOTAL	78	100

Table 6: Assessment of VIA with reference to Biopsy

	Biopsy positive for pre invasive lesion	Biopsy negative for preinvasive result	Total
VIA positive	26	5	14
VIA negative	9	38	64
Total	35	43	78

Table 7: Assesment of colposcopy with reference to Biopsy

	Biopsy positive for pre invasive lesion	Biopsy negative for preinvasive result	Total
Colposcopy Positive	28	14	57
Colposcopy Negative	7	29	21
Total	35	43	78

Sensitivity of VIA-95.24%
 Specificity of VIA -44.19%
 Positive predictive value of VIA- 45.45%
 Negative predictive value of VIA-95%

Sensitivity of colposcopy-90.48%
 Specificity of colposcopy -67.44%
 Positive predictive value of colposcopy-57.58%
 Negative predictive value of colposcopy-93.55%

DISCUSSION

It takes about 5-15 years for pre malignant lesion of cervix to progress to invasive cancer .If it is timely detected, pre-invasive disease has nearly 100% cure rate with simple surgical procedure. Advanced cancer has survival rate of less than 35 per cent. In the present study, the maximum number of cases were reported in the age group of 41-50 years (38%), similar findings have been reported in other studies. Pradhan B et al showed in their study that CIN was more prevalent in age group of 41 to 50 years.^[11]

In present study statistical analysis was done and sensitivity of VIA in detecting cervical cancer was 95.24% and specificity was 44.19%. Sensitivity of colposcopy in present study is 90.48% and specificity was 67.44%.

In study done by Goel et al^[12] VIA had sensitivity of 96.7% while colposcopy has sensitivity of 100%.The specificity of VIA was 36.4% and colposcopy was 96.9% which is similar to our study. A.Nessa et al^[13] found in their study that VIA had sensitivity 88.9% specificity of 52.1% and colposcopy showed sensitivity of 55.6% specificity of 95.8%.Hend S.Saleh et al^[14] in their study concluded that VIA had sensitivity 90% specificity of 37% and colposcopy had sensitivity of 77% specificity of 70%.

CONCLUSION

Colposcopic magnification is a complimentary method to VIA and not essential to identify a cervix with higher grade lesions. VIA can also guide a practicing gynaecologist regarding the site to be biopsied. Although colposcope accurately identifies the most abnormal area for biopsy, VIA will demarcate the site precisely and give better results than a blind biopsy of ectocervix, in absence of facilities for colposcopy.

Our study showed that VIA had sensitivity comparable to colposcopy and can therefore it is a suitable potential adjunctive screening test. VIA is a cost effective method which can differentiate a normal cervix from a precancerous cervix with reasonable accuracy. Hence, if practiced by gynecologists routinely, it would help to avoid many panic hysterectomies. Besides, in the absence of organized cytology screening program and limited availability of colposcopy facilities, VIA can be propagated on a wider scale.

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