Original Article

Visual inspection of cervix with acetic acid (VIA) in early diagnosis of cervical intraepithelial neoplasia (CIN) and early cancer cervix

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Abstract

Objectives: To study the place of visual inspection of cervix with acetic acid in screening for CIN and cancer cervix and to compare and correlate the efficacy of VIA with cervical cytology in early detection of cancer cervix. Methods: This cross sectional study took place in the Gynaecology out patient department (GOPD) of NSCB Medical College, Jabalpur between June 2005 and September 2006. Out of the total 16,400 women who attended GOPD during this period, 750 women were screened for CIN and early cancer cervix. VIA and pap smears were done concurrently and their sensitivity and specificity compared. For ethical reasons all those who were found positive were subjected to colposcopy and further management as per standard guidelines. Results: Out of the 750 women screened VIA was positive in 122 (16.26%) women and cytology was positive in 39 (5.2%) cases of the true positive (27 cases). The difference between the two tests was statistically significant (P=0.000001) VIA being highly sensitive (93.1%) buy less specific than cytology. Conclusion: The high sensitivity of VIA shows that the test could be valuable in detection of precancerous lesions of the cervix.

Key words: cervical carcinoma, screening, VIA cytology

Introduction

Cervical cancer is the second most common cancer in women worldwide 1. An estimated 3,71,000 new cases of cervical cancer are identified every year and accounts for about 1,90,000 deaths annually 2. Carcinoma cervix continues to be the most common genital cancer encountered in clinical practice in India 1. The disease is more prevalent among women living in poor conditions with a low income and indifferent education. In India approximately 90,000 new cases of cancer cervix occur every year. The incidence in India is 45 per one lakh women 3.

VIA involves naked eye examination of the 3-5% acetic acid swabbed uterine cervix without any magnification with illumination provided by a bright light source, such as a halogen lamp. A positive test is the detection of well-defined, dull acetowhite lesions on the cervix. The objective of VIA is to detect acetowhite lesions leading to the early diagnosis of high grade cervical intraepithelial neoplasia and early preclinical, asymptomatic invasive cancer. A major advantage with
VIA is that, it is a real-time screening test, as the outcome is known immediately after the administration of the test, so that further investigations/treatment can be planned and carried out during the same visit.

Material and Methods
This cross sectional study was carried out in NSCB Medical College hospital in the out patient Department of Obstetrics and Gynecology between 1st June 2005 and 30th September 2006. Seven hundred fifty women with inclusion and exclusion criteria were screened for CIN and early cervical cancer.

The study protocol was reviewed and approved by institutional ethical committee and informed consent was obtained from each woman. Relevant obstetric and gynecological history was obtained and recorded.

Inclusion criteria
All women about 25 years of age or marital life more than 3 years were subjected for screening irrespective of the purpose of GOPD visit.

Exclusion criteria
Unmarried women, women with frank invasive cancer cervix (with visible growth on cervix), women with bleeding per vaginam, pregnancy were excluded.

Per speculum examination was done by the same observer, to observe the size and shape of the cervix, the external os identified with pinkish squamous epithelium and reddish columnar epithelium and transformation zone. pap smear was taken and two samples were taken one from ectocervix and other from endocervix. The pap smear slide was immediately fixed with 90% ethyl alcohol. Later, the slide was sent for cytology in the Department of Pathology, NSCB, Medical College Hospital, Jabalpur.

Pap smear reporting was done according to the Bethesda classification 4. After taking pap smear, the same patients were subjected to visual inspection of the cervix with acetic acid. Using a cotton swab soaked in acetic acid for 1-2 minutes, 5% acetic acid was applied and then the cervix was carefully inspected for any acetowhite lesions, particularly in the transformation zone.

1. Intensity of the white color of acetowhite lesion
2. Borders and demarcation of the white lesion
3. Whether the lesion is uniformly white in color or the color intensity varies across the lesion
4. Location of the lesion
5. Size and number of the lesion

Reporting of test outcome
In the study, test was reported as positive, negative and inconclusive VIA test.

Positive test: Visualization of the dense acetowhite lesion with sharp margins located in the transformation zone, close to SCJ.

Negative test: If no acetowhite lesions were observed on the cervix polyps protruding from cervix, bluish white in color, nabothism cysts which appear as button like areas as whitish area or pimplies, dot like areas present in the endocervix which were due to grape like columnar epithelium staining with acetic acid; if there were shiny pinkish white, cloudy white or bluish white, faint patchy or doubtful lesions with ill defined, indefinite margins or irregular, acetowhite lesions resembling geographical lesions away from the SCJ.

Inconclusive test: No distinct acetowhite lesion or somewhat doubtful lesions or when the cervix could not be adequately assessed.

If VIA turns out to be positive the patient was subjected to further investigations such as colposcopy and guided biopsy.

The results of visual inspection of cervix with acetic acid (VIA) were correlated with that of pap smear on the basis of sensitivity, specificity and positive predictive value.

Statistical analysis was done as follows
2x2 table was used to compare VIA and cytology and analysis was done as follows:

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<tr>
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<th>VIA positive</th>
<th>VIA negative</th>
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<tr>
<td>Cytology positive</td>
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<tr>
<td>Cytology negative</td>
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