## Original Article

# Evaluation of the Visual Inspection with Acetic Acid (VIA) Positive Cases with Colposcopic Findings

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***ABSTRACT***

***Introduction:*** *Visual Inspection with Acetic Acid (VIA) is a crucial cervical cancer screening method that has proven to be an effective and accessible tool, particularly in resource-limited settings. Cervical cancer is a significant global health concern, with a disproportionately high burden in low- and middle-income countries. In the absence of widespread access to more sophisticated screening technologies, VIA has emerged as a valuable technique for early detection and management of cervical abnormalities.* ***Objective:*** *To determine the frequency CIN I, CIN II, CIN III in Visual Inspection with Acetic Acid (VIA) positive cases with the help of colposcopic examination.* ***Methods and materials:*** *The was prospective cross sectional descriptive study conducted among the Visual Inspection with Acetic Acid (VIA) positive cases who were attending at in Colposcopic Clinic of Department of Obstetrics and Gynecology, BSMMU, Dhaka, Bangladesh during 1st June 2010 to 30th August 2010.* ***Results:*** *The mean age was 35.8±9.9 years and majority (40.0%) subjects were found between 30-39 years age group. Most (72.0%) of the study patients were multipara and the mean age of 'last confinement was 7.8±6.8 years. Majority 38(38.0%) of the patient was normal, 25(25.0%) of the study patients had CIN I, CIN II in 13(13.0%), CIN III in 5(5.0%), 4(4.0%) had invasive carcinoma and 15(15.0%) unsatisfactory Colposcopy.* ***Conclusions:*** *Visual inspection with acetic acid (VIA) effective to screen women. It can be done by nurses or midwives with appropriate training. Although still under investigation, research results show that VIA is simple, accurate, cost-effective, and acceptable to most women.*

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## INTRODUCTION

Worldwide, cervical carcinoma is the most common genital malignancy and 2nd most common malignancy in women after breast cancer [1]. The estimated total number of new case is 371, 200 per year worldwide or 9.8% of all cancer in women [2]. This is third most common cancer worldwide. At least 200,000 women die of carcinoma cervix each year and 80% of the new cases appear in developing countries [3].

In Bangladesh, carcinoma cervix is the most important cause of malignant death in females. Every year about 12,000 new cases appear. An epidemiological study of Cancer Research Institute of Bangladesh in 1976-1981 shows that the prevalence of carcinoma cervix here is 26% amongst all types of cancer affecting females [4].

Worldwide successful cervical cancer prevention is based on an organized screening program [5]. Developed countries like USA have witnessed a marked decline in the incidence of invasive cancer from 44 cases/1,00,000 women in 1947 to fewer than 8 cases/1,00,000 in 2002. Similar screening programme were implemented in developing countries, but have failed to reduce the morality rate. The WHO in 2002 estimated, only 5% of woman in developing countries are screened appropriately. Reasons for failure in screening programme include lack of funding, insufficient access in rural areas, lack of trained cytopathologist, and lack of awareness [6]. Thus an alternative method for cervical cancer screening has been sought out in developing countries. VIA has gained popularity and proven itself in many clinical trials as an adequate alternative to Pap smear in developing countries.

VIA is accepted as a feasible method for cervical cancer screening in developing countries as it is relatively simple, in expensive, needs minimum infrastructure support and the result of the procedure is available immediately. It does not require any extra equipment or laboratory backup. It may also be practiced by paramedical workers nad nurses after proper training [7]. Shankaranaryanan and Mahe have published results from a randomized intervention trialed in India comparing via to cytology and HPV DNA testing and found that all three had similar detection rates of CIN lesions and the range of sensitivity for VIA was 67% to 79% and specificity to 49% to 86% [8].

Thus, VIA is a cost effective method which can differentiated a normal cervix from a precancerous cervix with reasonable accuracy and thought to be a very effective tool for cervical cancer screening in developing countries like Bangladesh. The aim of this study is to evaluate the VIA positive cases with colposcopic examination and to find out the frequency of precancerous lesion in cervix in VIA positive cases.

## METHODS & MATERIALS

The prospective cross-sectional descriptive study was conducted at the Colposcopic Clinic of the Department of Obstetrics & Gynecology, Bangabandhu Sheikh Mujib Medical University (BSMMU) in Dhaka, Bangladesh spanning from November 2010 to January 2011.

A total of 100 VIA positive cases were purposively selected for inclusion in the study, with exclusion criteria comprising diagnosed cases of Carcinoma cervix, unmarried individuals, or women with no

history of sexual contact, as well as those with cervical polyps.

Ethical considerations were diligently adhered to, as the purpose of the study was thoroughly explained to each participant, and only those who provided explicit permission were included. Written informed consent was obtained from every patient, and necessary permissions were secured from the relevant department. The study encompassed an array of sociodemographic and clinical variables. Sociodemographic variables included age, age of first confinement, and use of contraceptives. Clinical variables focused on intermenstrual bleeding, post-coital bleeding, foul-smelling watery discharge, and irregular vaginal bleeding.

The primary outcome measures sought to determine the frequency of CIN (Cervical Intraepithelial Neoplasia) grades I, II, and III, as well as the frequency of invasive carcinoma. Additionally, the study aimed to assess the occurrence of unsatisfactory colposcopy. Throughout the study period, meticulous attention was given to maintaining ethical standards, ensuring patient consent, and obtaining necessary permissions, ultimately contributing valuable insights into the prevalence and characteristics of VIA positive cases within the specified population.

Frequency distribution, percentages, mean and standard deviation were calculated by using statistical packages for social science (SPSS) for Windows (version 16.0, Chicago, IL, USA).

## RESULTS

**Table I: Age distribution of the study patients**

| Age in years | Number of patients (n=100) | Percentage |
|---|---|---|
| 21-29 | 29 | 29 |
| 30-39 | 40 | 40 |
| 40-48 | 18 | 18 |
| >50 | 13 | 13 |
| Mean ± SD<br>35.8 | | |
| Range (min-max)<br>(21-65) | | |

**Table I** shows the age distribution of the participants. The mean age was 35.8±9.9 years with range from 21 to 65 years and maximum 40(40.0%) subjects were found between 30 - 39 years age group.

**Table II: Complaints distribution of the study patients**

| Complaints | Number of patients (n=100) | Percentage |
|---|---|---|
| No complain | 43 | 43 |
| Irregular vaginal bleeding | 12 | 12 |
| Intermenstrual Bleeding | 10 | 10 |
| Foul smelling watery discharge | 21 | 21 |
| Post coital | 4 | 4 |

| | | |
|---|---|---|
| bleeding | | |
| Backage | 10 | 10 |

***Table II*** shows the complaints of the study patients. Most 43(43.0%) of the patients had no complain, 12(12.0%) had irregular vaginal bleeding, 10(10.0%) had intermenstrual bleeding, 21(21.0%) had foul smelling watery discharge, 4(4.0%) of the patients had post coital bleeding and 10(10.0%) had backache

**Table III: Distribution of the study patients according to the menstrual history**

| Menstrual history | Number of patients (n=100) | Percentage |
|---|---|---|
| Menstrual cycle regular | 63 | 63 |
| Menstrual cycle Irregular | 27 | 27 |
| Menopause | 10 | 10 |

***Table III*** shows the menstrual history of the study patients and observed that more than a half 63(63.0%) of the study patients had menstrual cycle regular followed by 27(27.0%) had irregular menstrual cycle and 10(10.0%) patients were menopause.

**Table IV: Distribution of the study patients according to the Obstetrics history**

| Obstetrics history | Number of patients (n=100) | Percentage |
|---|---|---|
| **Para** | | |
| Nuliparous | 28 | 28 |
| Multi parous | 72 | 72 |
| **Age of last confinement** | | |
| 1-5 years | 46 | 46 |
| 6-10 years | 28 | 28 |
| 12-20 years | 20 | 20 |
| >20 years | 6 | 6 |
| Mean±SD<br>7.8±6.8<br>Range(min-max)<br>(1-25) | | |

***Table IV*** shows the obstetrics history of the study patients and found that most 72(72.0%) of the study patients were multi parous and 28(28.0%) were nuliparous. Regarding the age of last confinement of the study patients and observed that mean age of last confinement was 7.8±6.8 years with ranged from 1 to 25 years and majority 46(46.0%) of the study patients between 1 to 5 years. Others results are depicted in the above table.

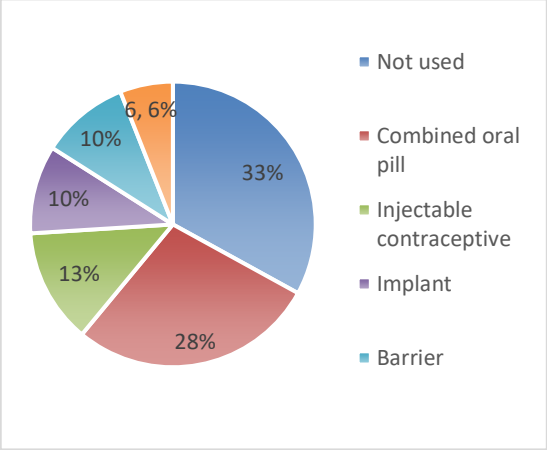


**Figure 1: Distribution of the study patients according to the Contraceptive**

***Figure 1*** shows the contraceptive history of the study patients and observed that nearly one third (33.0%) of the study patients did not use any contraceptive. Other results are depicted in the above table.

**Table V: Distribution of the study patients according to colposcopic findings**

| Colposcopic findings | Number of patients (n=100) | Percentage |
|---|---|---|
| Normal | 38 | 38 |
| **Aceto white area** | | |
| CIN I | 25 | 25 |
| CIN II | 13 | 13 |
| CIN III | 5 | 5 |
| Invasive carcinoma | 4 | 4 |
| Unsatisfactory colposcopy | 15 | 15 |

***Table V*** shows the colposcopic findings of the study patients and found that majority 38(38.0%) of the patient was normal, 25(25.0%) of the study patients had CIN I, CIN II in 13(13.0%), CIN III in 5(5.0%), 4(4.0%) had invasive carcinoma and 15(15.0%) was unsatisfactory.

## DISCUSSION

This prospective cross sectional descriptive study was carried out with an aim to find out the frequency of CIN I, CIN II, CIN III in Visual Inspection with Acetic Acid (VIA) positive cases with the help of colposcopic examination to evaluate the rate of unsatisfactory colposcopic cases.

In this current study it was observed that all the 100 cases had undergone colposcopic examination and showed the mean age was 35.8 years with range from 21 to 65 years and maximum (40,0%) subjects were found between 30-39 years age group. Nene et al. have shown that predominant (29.0%) age group was 35-39 years in their study patients [9]. Cagle et al. mentioned that, age eligible women 30 to 49 years were identified by government census data in China. Similarly, Ngelangel et al. observed age between 25 to 65 years in their study patients, which are comparable with the current study [10,11]. On the other hand Cremer et al. has observed higher age range in their study [12]. Which maybe stated that the higher age range due to increased life expectancy in their study patients.

The most common presenting complains of the patients in the present study were foul smelling watery discharge (21.0%) irregular vaginal bleeding (12.0%), intermenstrual bleeding (10.0%), backache (10.0%) and post coital bleeding (4.0%). Similar observations regarding the clinical presentations were also made by Nene et al. [9]. More than a half 63(63.0%) of the study patients had menstrual cycle regular followed by 27(27.0%) had irregular menstrual cycle and 10(10.0%) patients were menopausal.

In this current series it was observed that more than two third (72.0%) of the study patients were multiparous and 28.0% were nulliparous. However Cremer et al. showed that nulliparous was predominant in their study patients [12]. Regarding the age of last confinement of the current study patients was observed that the mean age of last confinement was 7.8±6.8 years with range from 1 to 25 years and nearly a half (46.0%) of the study patients between 1 to 5 years. In this study it was observed that nearly one third (33.0%) of the study patients had no history of contraceptive use, 28.0% received combined oral pill, 13.0% received injectable, 10.0% implant, 10.0% barrier and 6.0% had done tubectomy.

In this current series it was observed that the colposcopic findings of the study patients showed one fourth (25.0%) of the study patients had CIN I, 13.0% CIN II, 5.0% CIN III, 4.0% had invasive carcinoma, 38.0% were normal and 15.0% had unsatisfactory colposcopy.

## CONCLUSION

VIA is still under investigation regarding clinical effectiveness, cost, and acceptability to women, but it appears to offer promise as a reasonable alternative screening mechanism, when cytologic screening is unavailable or ineffective. Too often, cytologic screening is not available or available to a few through private care or in maternal child health or family-planning clinics, which are not available to or frequently used by the high-risk age groups.

## FUNDING

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## CONFLICT OF INTEREST

None declared

## ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee

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