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Original Article

Prevalence of VIA Positive Case Result at Primary Health Care Centre, Gazipur, Bangladesh

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ABSTRACT

Introduction: *Cervical cancer is the second most 2nd most frequent and top killer cancer among women in Bangladesh. All positive VIA cases are evaluated by colposcopy. Although VIA screening is limited scientific evidence on prevalence of VIA screening service utilization and factors influencing screening practices in the community.* ***Objective:*** *To assess the prevalence of VIA positive case result at primary health care centre, Gazipur, Bangladesh.* ***Methods & Materials:*** *An observational study was done in gynaecology outpatient department in Primary health care center Sreepur, Gazipur, Bangladesh during the period of January 2020 to June 2021. Total 5056 women were selected randomly. All asymptomatic women between age group 18-60, who were married for at least 3 years, were included in this study. All VIA positive cases were evaluated by colposcopy according to colposcopy method.* ***Results:*** *Total of 5056 women were screened by VIA test. Eighty four VIA positive cases were identified and referred for colposcopy. Among 55 were diagnosed as CIN I, 17 cases were CIN II, 12 cases were CIN III and 4 were VAI test results positive. Early initiation of sexual intercourse was an independent predictor of VIA positive result in this study.* ***Conclusion****: Thus, any cervical cancer prevention and control effort at the study area should address the problem of early initiation of sexual intercourse. So even during gynecological practice, if we arrange a setup for cervical screening by VIA test, many women can be saved from future development of carcinoma cervix later in their lives.*

Keywords: *Cervical Cancer, Visual Inspection with Acetic Acid, VIA Positive Result*

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INTRODUCTION

Cervical cancer is a disease in which the cells of the cervix become abnormal and start to grow uncontrollably, forming tumors[1]. Cervical cancer is the second most common female cancer of female. It

accounts for 25% of all female cancer causing 8% of total cancer deaths of women[2]. Approximately 70% of the cervical cancers occur in developing countries[3]. In Bangladesh, the yearly burden of cancer cervix is about 67,686[4]. Every year an estimated 17,686 women are diagnosed as carcinoma cervix and 10,364 dies from the disease[5]. Population-based cervical cancer screening was initiated in Bangladesh in 2004 as a pilot project and in 2005 as a national programme[6]. It is caused by the sexually transmitted human papilloma virus (HPV) infection which has been detected in up to 99 % of women with squamous cervical carcinoma[7]. Young age at first intercourse (<16 years), multiple sexual partners, cigarette smoking and high parity are risk factors for HPV acquisition and cervical cancer. Cancer of the cervix is the second most common cancer among women worldwide, with about 530,000 new patients diagnosed and over 270,000 deaths every year. It is a major cause of morbidity and mortality among women in low and middle income countries (LMICs) where more than 85 % of the global burden and deaths occur because of poor access to screening and treatment services[8,9]. According to International Agency for Research on Cancer, more than 50 million Bangladeshi women are at risk of developing cervical cancer, and 17,686 new cases and 10,362 deaths occur annually[10]. 80% of cervical cancers are diagnosed in an advanced and inoperable state[11]. It can be prevented by effective screening programme. Visual inspection with acetic acid (VIA) is a simple and affordable screening test with acceptable sensitivity and specificity in the range of 56-77% and 64-86% respectively[12]. Bangladesh is one of the first countries in the world where VIA has been adopted nationally to screen cervical cancer[13]. Human Papillomavirus (HPV) is the single most important causative factor. After that, socioeconomic status is important. In developed countries, population-based screening has already been established by cervical cytology. Also, they have opportunity for primary prevention by vaccination against common high oncogenic HPV 16, 18 between 9-26 years of age[13]. In developing countries like Bangladesh, due to the high cost of vaccine and other positive high risk socio-economic factors, primary prevention is still far away. So, emphasis has been given on secondary prevention by early detection and treatment of CIN[14]. If diagnosed at the precursor stage, however, cervical cancer is a condition that can be successfully treated[15]. In Ethiopia, the annual number of new cervical cancer cases was 4648 and 3235 (69.6 %) die from the disease making it the 2nd most frequent and top killer cancer among women according to an estimate by International agency for research on cancer (IARC)[14]. However, studies on prevalence of VIA positive were limited at the study area and this research was primarily designed to address that.

METHODS & MATERIALS

An observational study was done in gynaecology outpatient department in Primary health care center Sreepur, Gazipur, Bangladesh during the period of January 2020 to June 2021. Total 5056

women were selected randomly. All women between age group 13-35 were included in this study. Women with unhealthy suspicious looking cervix or with any cervical growth were excluded from the study. Written informed consents were taken prior to their examination. Women with positive results were referred to higher center for colposcopic evaluation. Information of the patients was collected by data collection sheet.

All VIA positive cases were evaluated by colposcopy according to colposcopy method. Severity of CIN was assessed on the intensity of acetowhitening of epithelium, margins and surface contour of acetowhite areas, vascular features (punctatum, mosaic) and colour changes after application of iodine. The note of the lesson was described by a diagram with its colposcopic diagnosis like CIN I, II and III, or suspicion for invasive cancer, unsatisfactory (inconclusive) or normal (no lesion found). Data were screened, grouped, and analysed by SPSS version 21.

RESULTS

During the study period total 5056 women were screened by VIA test. **Figure 1** shows, among total 5056 patients, 725 women were less than <13 years of age, 2581 were between 14-20 years of age, 1526 were between 21-25 years of age and 156 were 26-30 years of age **(Table-I)**. Although majority of the cases belonged to the age group of 25-30 years. Majority of the women had their primary or secondary education (63.8%), 21.9% women were illiterate and the least number of women (14.3%) had higher secondary education or above. In our study, majority (61.6%) of the cases belonged to middle class on the basis of their monthly family income and 90% were housewives, whereas only 10% women were in different jobs.

Table – I: Age Distribution of VIA Patients (*n*=5056)

Age	Frequency	Percentage
<13	725	14.33
14-20	2581	51.03
21-25	1526	30.18
26-30	156	3.08
>31	68	1.34

Table II shows colposcopic diagnosis of the VIA positive cases. Majority of the cases (70.2%) were colposcopically diagnosed as normal. Rest of the 29.8% cases had abnormal colposcopic findings.17.9% were diagnosed as CIN-I, 9.17% as CIN-II, 1.38% as CIN-III, 0.15% as carcinoma cervix and 1.04% colposcopic impressions were unsatisfactory.

Table – II: Colposcopic Diagnosis (*n*=5056)

Colposcopic impression	*n*	%
Normal	3551	70.2
CIN-I	910	17.9
CIN-II	464	9.17
CIN-III	70	1.38
Carcinoma Cervix	08	0.15
Unsatisfactory	53	1.04
Total	5056	100

Table III show that VIA positive cases

majority cases 48.8% of 14-20 years, 29.79% of 25 cases 21-25 years and 3.57% of less than <13 years.

Table – III: Age Distribution of VIA Positive Cases (*n*=84)

Age	*n*	%
<13 yrs	3	3.57
14-20 yrs	41	48.8
21-25 yrs	25	29.79
26-30 yrs	11	13.09
>31 yrs	4	4.79

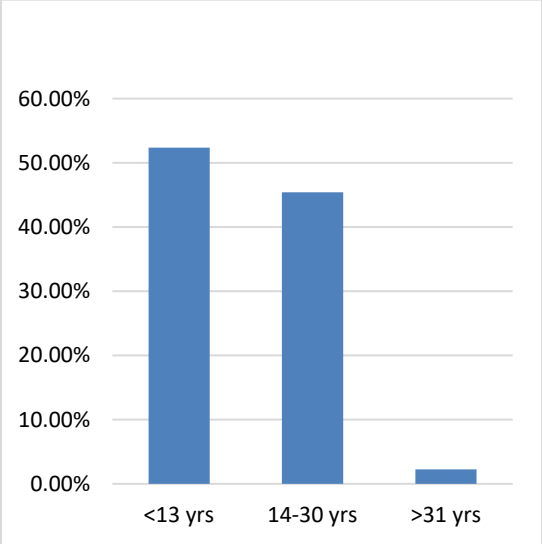

Figure – 1: Age Distribution of Marriage

Figure 1 shows that only 2.25% women were above 31 years during their marriage, 45.40% were between 14 and 30 years and most of the women (52.35%) were below 13 years during their marriage.

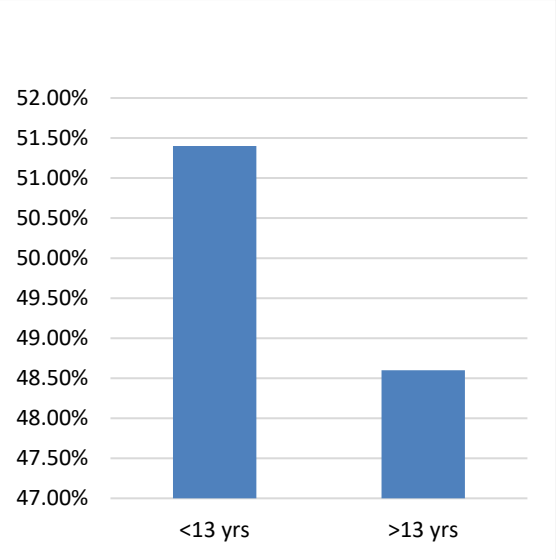

Figure – 2: Age at First Delivery

Figure 2 shows-51.40% were <13 years during their 1st delivery, whereas 48.60% were >13 at the time of their 1st delivery.

Table IV shows that total 87 women were found VIA positive cases. Among 55 were diagnosed as CIN I, 17 cases were CIN II, 12 cases were CIN III and 4 were VAI test results positive.

Table – IV: VIA Test Result (*n*=84)

Cases	*n*	%
CIN I	55	65.4
CIN II	17	20.2
CIN III	12	14.2

DISCUSSION

Bangladesh is one of the first countries that has introduced VIA based screening for early detection of cervical cancer. Cervical cancer accounts for about 25% of female cancers. This study reports the experiences of implementing VIA-based cervical screening method in areas where medical facilities are limited. In our study shows, among total 5056

patients, 725 women were less than <13 years of age, 2581 were between 14-20 years of age, 1526 were between 21-25 years of age and 156 were 26-30 years of age (table-1). Although majority of the cases belonged to the age group of 25-30 years. Majority of the women had their primary or secondary education (63.8%), 21.9% women were illiterate and the least number of women (14.3%) had higher secondary education or above. VIA is a simple and affordable screening test with acceptable sensitivity (50-88.6%) and specificity (66.7-89.7%) (JHPIEGO[15]. Death due to cervical cancer is closed with that of maternal death in this country. To reduce the disease burden, effective screening programme is very important but due to resource-constrain, it is not possible to introduce cytology based screening. In a centre based study by BSMMU, it is found that, VIA positive is 4.8%[13]. Which is at the lower range of the test positivity reported in other VIA studies in Asia and Africa. [16,1718,19,20] In our study group prevalence of CIN in VIA positive cases is (84 out of 5056). In another study by mentioned the colposcopic positivity was 52.3%[4]. This study was done in the highest referral centre of Bangladesh. Cervical cancer screening program is for the sexually active women aging above 30 years. Lowest legal age of marriage is 13 years in our country. The results show that well-trained health workers can effectively perform cervical screening, cryotherapy and follow up even with low resources, under medical supervision. In our study, the screen positivity was 1.72%. Previous studies on VIA had the positivity ranged from 6.6% to 27.4%[16,17]. This wide range is due to variation in the women, type of provider and their training[18-21]. In this study, about two-third of the cases aged more than 31 years which is comparable with other studies[22]. Those studies indicate CIN is more prevalent in sexually active women[23]. World Health Organization also emphasized on screening the woman aged between 35 and 45 years[24]. However, most of the cases were housewives in this study. In which one used the age group 30–45 years while the other used 18 years and older[25.26]. It may also be due to differences in test providers skills ***Vedantham HS et al.*** and ***Mahé CG, et al.***[27,28] and under- lying prevalence of other sexually transmitted infections[27]. The higher prevalence in Sudan ***Ogunbowale TL, et al.***[29] Nigeria ***Ibrahim AR, et al.***[30] and Bangladesh ***Bradford LSD, et al.***[31] is most probably due to a lower sample size in the study, 100, 125 and 44 respectively, although provision of the service by laywomen, poor test providers skills, has also contributed to the finding of Bangladesh study. Further, VIA also inherently suffers from the same challenges as other visual interpretation methods including colposcopy and cytology as evidenced by Indian study where VIA positivity rate varied from 4 % to 31 % among the six gynecologists who performed the test[32]. Early onset of sexual activity is thought to be associated with high risk because, during puberty, cervical tissue undergoes physiologic changes, transformation zone on the ectocervix is enlarged, and exposure to HPV at such times

may facilitate infection which may make this area more vulnerable to development of dysplasia, a cervical squamous precancer[33]. Regarding the age of first coitus, 59.4% experienced it before 18 years in our study, whereas ***Kamrun Nessa et al.***[34] found 76.5% of their study sample having it before 18 years[34]. Similarly, Sayeeda found that more than 80% experienced first coitus before 19 years of age[22]. Early age of marriage and early first delivery are important demographic factors in development of carcinoma cervix. In this study, age of women during first delivery was less than 13 years in 51.4% cases. This study found that 92.59% had CIN lesions and 7.4% had normal findings which are comparable with other studies[35]. Colposcopically directed punch biopsy revealed 81.48% cases with positive lesions and 18.52% with no lesions in this study which is consistent with a previous study[35]. Women who are separated or widowed may have higher number of lifetime sexual partners in comparison with married women and as number of lifetime sexual partners increases, the risk of HPV infection increases and thus they are more susceptible for developing precancerous lesions[36]. High parity increases the risk of precancerous cervical lesions most likely due to repeated cervical trauma during consecutive births and hormonal adjustment during and after pregnancies which may create an entry point for the HPV virus.[37]. History of sexually transmitted disease increases the risk of precancerous cervical lesions due to the sexually transmitted nature of HPV infection[37].

Conclusion

In Bangladesh, like adequate coverage of the total female population by cervical cytology is not feasible at present. Also, women are not complaint for follow up visits. In such situation, VIA is suitable for primary screening and all VIA positive cases should have secondary screening by colposcopy and biopsy. Screening for precancerous and cancerous cervical lesions using VIA is simple, which requires minimal infrastructure and low cost. Colposcopy is the gold standard for diagnosis of CIN and colposcopy based management can reduce the incidence of carcinoma cervix by 75%. We should extend our screening program and that should be population-based.

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Conflict of Interest

The authors declare no conflict of interest.

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The author contributed equally to the conception and design of the study.

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