Screening For Cervical Carcinoma By VIA

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Citation

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Abstract

IntroductionCervical malignancy is amongst the most common malignancies that affect women. It has a long precancerous stage providing tremendous scope for early diagnosis and treatment. Though directed biopsy is the gold standard for diagnosis, and Papinacolou staining (Pap Smear) is currently the most effective screening method, both require an expensive and expertise demanding setup. In developing countries where such provisions are limited, an economical and easier effective alternative is desirable. Onesuch method is visual inspection of cervix with acetic acid (VIA Test).
Study designOne year prospective study was carried out at Government Lalla Ded hospital Srinagar from June 2006 to May 2007 in which 1000 married, sexually active women attending gynecology OPD were screened for cervical disease using VIA as the screening tool. All women were further subjected to colposcopy and selected cases further underwent directed cervical biopsy. ResultsAmong the 1000 women screened, 170(17%) tested VIA positive. Most of these were from rural areas (87.6%), multipara (para3 and above were 91.7%) and of low socio-economic class (65.8%) with average age less than 20 years in (62.9%). From the VIA positive group 98(58%) women on further screening by colposcopy had abnormal findings as well and 72(42%) had no colposcopic findings.Women with abnormal colposcopy and positive VIA results were further evaluated with directed biopsy. 35(36%) out of 98 VIA and colposcopy positive women had abnormal histopathology findings on directed biopsy.
ConclusionIna resource limited setting,VIA can be used as a good alternative for screening women for cervical cancer

INTRODUCTION

Cervical cancer is the commonest form of cancer that affects women in virtually all developing countries and is the second commonest form of cancer that affects the women in the world globally.There are estimated 450,000 new cases worldwide with about 300,000 deaths each year[1].In India alone it has been estimated that 90,000 new cases of carcinoma cervix are diagnosed every year and 70% or more of these are in stage 3 or higher at the time of diagnosis[2]. Cervical cancer is different from most of the other cancers by its invariable association with asymptomatic and precancerous lesion that may have its onset 5 – 15 years prior to any noticeable clinical manifestation. These lesions if not treated may progress to invasive cancer. Hence there is a vast scope for early detection and treatment of these lesions prior to development of a frank malignancy.The goal of cervical cancer screening programme is detection of precancerous lesions (CIN-2 or CIN-3) that requires screening of all women at risk.Developed countries like the USA have witnessed a marked decline in the invasive cancer from 44 cases/100,000 women in 1947 to fewer than 8 cases/100,000 women in 2002. Much of the credit goes to detection of pre-invasive disease by organized Papinacolou smear (Pap smear) screening programme[3]. Similar screening programme was introduced in India in 1950 but lack of political will, poor organizational backup, financial constraints and priority given to other health issues like population explosion has led to failure of efforts[4].An organized screening programme is difficult to implement in developing countries where resources are scarce. An important reason for the setback is lack of trained cytopathologists and cytological laboratories; and often a long interval between the time when Pap smear is collected and availability of the test results.After 1950 when Pap smear became standard for cervical cancer screening, increasing number of women undergoing this test led to increased utilization of the colposcope, developed in 1930, to confirm the screening findings. Years later, given the expense and inconvenience of the colposcopy services, clinicians began to explore whether unmagnified visualization of the cervix after application of acetic acid could be used as an adjuvant to cytology so that the patients in need of colposcopy could be identified more effectively

and efficiently[5].Visual inspection with acetic acid (VIA), first described by Ottaviano and Torre in 1981, involves inspection of cervix with naked eye using a 100Watt lamp as light source, before and after application of 5% acetic acid solution to the cervix[6]. Acetic acid solution dehydrates the cells reversibly and coagulates the nuclear proteins producing a dramatic whitish change in the epithelium of the cervix that has greater nuclear density and consequently higher concentration of proteins.VIA is of particular interest to developing countries because it is inexpensive and requires supplies that are locally available and can be completely performed and interpreted in a single visit even by a new physician.

AIMS AND OBJECTIVE

To evaluate Visual Inspection of cervix with Acetic Acid (VIA) as a method of cervical screening and find out its efficacy as an alternative to colposcopy

MATERIAL AND METHODS

Oneyear prospective study was carried out from June 2006 to May 2007 in Lalla Ded Hospital, an associated hospital of Government Medical College Srinagar which is the only tertiary care hospital exclusively offering Obstetric and Gynecological care to the entire valley of Kashmir. One thousand married, sexually active, parous women attending the Out-patient Department were included in the study. Five hundred women weresymptomaticfor vaginal discharge, irregular uterine bleeding, dysfunctional uterine bleeding, post-coital bleeding and/or postmenopausal bleeding (Symptomatic group; group A: n = 500) and five hundred women attending OPD for pain abdomen or low backache were selected randomly (Asymptomatic group; group B: n = 500). Unmarried / nullipara, pregnant women and women using oral contraceptives / IUCDs were excluded from the study. Detailed history including socioeconomic status, age at the time of consummation of marriage, number of sexual partners and contraceptive use were recorded on a proforma. General physical and abdominal examination was performed in all patients. Per Speculum (PS), per Vaginal (PV) and wherever required per rectal examination was done. Routine investigations like complete blood count (CBC), spot urine examination and ultrasound of abdomen and pelvis was all cases. Every patient underwent visual inspection of cervix before and after application of 5% Acetic Acid (VIA). Colposcopic examination was done on all the women who were screened to confirm the finding of visual inspection of cervix.Those women, who tested positive on colposcopy, underwent directed biopsy and those who tested negative on colposcopy were kept under follow up.

RESULTS

Of the 1000 women screened by Visual Inspection of Cervix aided by 5% acetic acid 170 (17.0 %) were VIA positive. Of the symptomatic group 130 (26%) were VIA positive and of the asymptomatic group 40 (8%) were VIA positive.

Figure 1

Table 1

Asymptomatic		500	40
Symptomatic	Vaginal Discharge	310	20
	Irregular bleeding	120	54
	Post coital bleeding	50	40
	Postmenopausal bleeding	20	16
	Total	1000	170

The mean age of the women who tested positive on VIA was 25±2 years. Of the women who were VIA positive 14(8.2%) were para 2 while rest 156 (91.76%) were para 3 and above. Amongst the VIA positive women 149 (87.65%) were from rural areas and 112 (65.88%) were from low socioeconomic class. Age at marriage was less than 20 years in 36 % of the total cases. Of the women who were VIA positive age at marriage was less than 20 years in 62.94% (107/170).

On screening all these patients further by Colposcopy 110 (11%) had abnormal colposcopic findings and 890 (89%) had normal colposcopic findings. Thus the 98 (58%)VIA positive cases also had abnormal colposcopic findings and 72 (42%)VIA positive cases had normal colposcopic findings. However, 12 (1.4%) VIA negative cases had abnormal colposcopic findings too. Thus the sensitivity and specificity of VIA with regard to colposcopy is 89.09% and 91.91%. The positive predictive value is 57.65% and negative predictive value is 98.55%

Figure 2

Table 2

	Colposcopy positive	Colposcopy negative
VIA positive	98	72
VIA negative	12	818
	110	890

The women with normal colposcopy were advised to come for follow up every six months all the 110 women with abnormal colposcopy findings underwent directed biopsy. Of the 98 women who had abnormal VIA and colposcopy findings 35(35.7%) had abnormal histopathology findings and 63 (64.2%) had normal histopathology findings. Of the 12 women who had normal VIA findings and abnormal colposcopy findings 2 had abnormal histopathology findings and 10 had normal histopathology findings. Thus the sensitivity and specificity of VIA and colposcopy is 94.59%

and 86.30%. The positive predictive value is 35.71% and negative predictive valueis 13.68%.

Figure 3

Table 3

	VIA and colposcopy positive	VIA negativeand colposcopy positive
Abnormal histopathology	35	2
Normal histopathology	63	10
Total	98	12

The histopathology findings in cases who were both VIA and colposcopy positive were LSIL in 9, HSIL in 24, Ca in situ 1 and invasive ca in one case.Thehistopathology findings in the 2 cases that had normal VIA findings and abnormal colposcopy findings were LSIL in both.

DISCUSSION

In our study conducted on 1000 parous sexually active women,170(17%)were VIA positive. Inthe study of 1921 asymptomatic women Jose et al found 6.9%to be VIA positive[7].The mean age in our study of women was 30±2 years. Similar findings were reported by Sardana et al[8], who reported maximum cases in the age group of 21 to 30 years. In the same study by Sardana et al the parity in maximum number of positive cases was more than 2. In another study by Denny et al [9]the mean parity in VIA positive cases was para 3. In our study 72.81% women were from rural areas. Of the cases that were VIA positive 87.6% were from rural areas. Most (65.5%)women belonged to the lower socio-economic strata. Similar findings have been reported by Sardanaet al[8]. Age at first coitus is an important determinant of the risk of Ca Cervix. 62.9% women in our study who were VIA positive had been married at age less than 20 years. Denny et al reported a median age of first coitus to be 17 years in their study[9]. Nene et al reported age of marriage to be 15 years in 72.7% in women who were via positive[10]. Of the 170 women who screened positive on VIA, 98 had abnormal colposcopic findings. Among the VIA negative cases 12 had abnormal colposcopic findings.Thus the sensitivity and specificity of VIA with regard to colposcopy is 89.09% and 91.91%. The positive predictive value is 57.65% and negative predictive value is 98.55%. The JHPIEGO cancer cervix project (1999) found the sensitivity of via to be 77% and sensitivity of 64% in picking up pre invasive lesions. The positive predictive value and negative predictive value were 19% and 96%. Similarly Sankaranarayana et al [12]have reported the sensitivity and specificity of 96% and 68% and PPV of 15% and NPV of 99%. VIA and biopsy correlation is poor in cases of LSIL which may regress in 80% cases. VIA picks up cases of HSIL that are the true precursors of invasive disease.In our study among the VIA positive cases with abnormal biopsy results 68.57% had HSIL, 25.7% had LSIL, 2.8% had Ca in situ and 2.8% had invasive carcinoma.

CONCLUSION

In view of the paucity of trained manpower in the field of cytology, lack of cytology laboratories, limited facilities for colposcopy in resource poor setting visual inspection of cervix using acetic acid can be used for screening of women in far flung areas. Given the high negative predictive value of VIA those women who are normal on VIA can safely be kept on follow up. Those who have abnormal VIA test need to be counseled about the need for further evaluation with either colposcopy or biopsy, along with the reassurance that not all will necessarily need further treatment.

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