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RESEARCH ARTICLE

CERVICAL CANCER SCREENINGIN A RURAL BASED HOSPITAL USING CAMP APPROACH

Dr. C. Abi and Dr. Viswanathan, S.

Department of Obstetrics and Gynaecology, Rajah Muthaiah Medical College and Hospital, Tamilnadu

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ABSTRACT

Objective: To determine the prevalence of pre-malignant lesions of the cervix by visual inspection with Acetic acid (VIA) and cervical cytology method (Pap smear) in a rural based hospital

Materials and Methods: The study was carried out among 30-65 years old married women in a rural based tertiary health care center. A pre-designed questionnaire wasadministered to collect information on socio-demographic and reproductive characteristic.
They were tested for the presence of pre-malignant lesions of the cervix using Pap smear and VIA as screening tools.

Results: The VIA test was positive among 8(3.6%) women and PAP smear was abnormal in 9(4.05%) of women. None of the patient who had abnormal PAP smear were VIA positive and vice versa

Conclusion: The prevalence of pre-malignant lesions of the cervix by VIA was 3.6 % while 4.05% pre-malignant lesion was detected by Pap smear method.. Lack of education, awareness and poor follow up are the main factors behind failure of screening programs in a rural setting. In low-resource areas, VIA can be better than PAP smears for its ease of use and low cost, eliminating the need for follow-up visits.

INTRODUCTION

Cervical cancer is the commonest malignancy among women in India (Desai, 2004) and second most common form of cancer in the world as a whole. Worldwide, particularly in developing countries, cervical cancer remains the major cause of death in women accounting for an estimated 160 000 deaths every year (IARC, 1987). The age adjusted incidence rate for cervical cancer has been reported to vary from 19 to 44/100 000 women in various cancer registries in India (National Cancer Registry Programme, 1984-1993; Sankarnarayanan *et al.,* 2003).

Cervical cancer is a preventable disease as it can be diagnosed in its precancerous stage. Screening by cervical cytology is the most common method used for detection of the disease in an early stage.Developed countries with centralized cytology screening programs have shown a dramatic decrease in the invasive cervical cancer incidence (Screening for Cervical cancer, 2010) and mortality. The cytology screening program has failed in developing world due to financial constraints, lack of expertise and lack of prioritization (Qureshi *et al.,* 2010). These limitations have prompted the evaluation of simple and inexpensive methods such as Visual Inspection of the cervix after the application of 3-5% Acetic Acid (VIA) and after the application of Lugol's Iodine (VILI) to downstage the cervical cancer at an early stage when it can be still treated.These techniques are less expensive, simpler to perform, do not need any equipment and can be mastered in a short period by the health workers.They can provide the results immediately whichmake them suitable for the wide screening in regions with a high incidence of cervical cancer (Blumenthal *et al.,* 2005).

Various published studies with VILI and VIA report that they are equally or more sensitive compared to cytology even though the specificity is low and they do seem to have an advantage over conventional screening techniques in developing (Sankarnarayanan *et al.,* 2004; Bhatla *et al.,* 2004; Arbyn *et al.,* 2008; Bhatla *et al.,* 2004; Mati *et al.,* 1994) countries with limited resources. The present study was undertaken to determine the prevelance of premalignant lesions of cervix by VIA and PAP smear.

MATERIALS AND METHODS

This Camp based cervical cancer screening study was carried out in a rural based tertiary care teaching hospital in Tamilnadu. Women residing in the villages in and around the hospital were informed about the causes of cervical cancer, signs and symptoms, prevention, early detection and treatment and were invited for cervical cancer screening on a specific

Corresponding author: Dr. Viswanathan, S.
Department of Obstetrics and Gynaecology, Rajah Muthaiah Medical College and Hospital, Tamilnadu.

day. Women were registered and informed consent taken. A predesigned questionnaire was used to collect sociodemographic information, reproductive charachteristics, previous screening, family history and gynaecological problems. Of the 263 women registered, 41 were excluded for reasons like previous hysterectomy, recent screening, menstruation. Remaining 222 patients had per speculum examination followed by PAP smear and VIA. Findings were noted following which per vaginal examination was done.

Screening Method

Using an un-lubricated bivalve Cusco's speculumthe cervix was exposed, excess mucus wascleaned when present and the cervix was visually inspected. A Pap smear was collected from thesquamo-columnar junction (SCJ) of the cervix withAyer's spatula. 3% acetoacetic acid was applied. Acetowhite areas if present was noted. PAP smear was evaluated at pathology department of the tertiary care hospital.The results of the study have been presented in percentages.

RESULTS

263 women were registered in the camp. All were between 30-65 years. More than half (62%) were from low socioeconomic status. Most common gynaecological complaint was vaginal discharge(29.28%) followed by menstrual disturbances. Menstrual disturbance was present in 32(14.41%) women.20 (9%) of the women had family history of genital, breast or GI cancer. Only 17(7.66%) women had previous screening. 2 (0.9%) had uterovaginal prolapse, 8 (3.6%) had cervical polyp. Significant.erosion was present in 25 (11.26%)women.

VIA was positive in 8 (3.6%) women. 9(4.05%) had abnormal PAP smear. Of the 9, 3 were ASCUS, 4 mild to moderate atypia, 2 moderate to severe atypia.

No women who were VIA positive had abnormal PAP smear.

DISCUSSION

Cervical cancer is the leading cause of morbidity and mortality among women worldwide. There are over 500,000 cases of cervical cancer found worldwide, and more than 280,000 women die of it every year. 85% live in developing countries. While the incidence and mortality rates of cervical cancer have declined over 80% in developed countries since the advent of successful screening programs, there has been no such trend in developing countries. Screening programs were implemented in developing countries since the early 1980's, yet have failed to reduce the mortality rates. The WHO in 2002 estimated that only 5% of women in developing countries are screened appropriately. Likely reasons for failure in screening programs include lack of funding, insufficient access in rural areas where most of the population in developing countries reside, lack of awareness/education as to need for screening, and poor follow-up. About 50% of all cancers occur in developing countries, yet only 5% of resources are spent on the fight against cancer worldwide.In light of the poor results from PAP-based screening programs, alternative methods for cervical cancer screening have been sought. One method, direct visualization with acetic acid has gained popularity and proven itself in many clinical trials as an adequate alternative to PAP smears in developing countries. VIA is of particular interest in developing countries because it is inexpensive, only requires supplies locally obtainable, and can be competently performed by non-physicians with prior training. VIA is easy, cheap, and treatment can be administered at the same time. Ghaemmaghami concluded that sensitivity and specificity of VIA is high comparable with that of cytology making it a feasible method of screening in countries where access to cytopathology is limited. . The sensitivity of VIA was found to be 74.3% compared with 72% for PAP smear. The specificity of VIA was 94% compared to 90.2% for PAP (Ghaemmaghami, 2004).

Doh concluded that, although PAP has slightly better testing qualities, VIA has acceptable test qualities and may in low resource settings be implemented as a large scale screening method .Sensitivity of VIA was 70.4 % vs 47.7% for PAP. VIA specificity was 77.6% vs 94.2% PAP. PPV of VIA was 44% and NPV 91.3% (Doh, 2005) Goel found VIA to have a sensitivity of 96.7%, much higher than that of a PAP smear, which they found to be a mere 50%. The specificity of VIA, however, was much lower than the PAP smear, 36.4% vs. 97%. Goel found that VIA was a poor test for catching endocervical lesions, missing 2 cases in this study, and the low specificity of VIA would result in high false positive rates. Overall, Goel concluded that VIA with acetic acid is very sensitive for ectocervical lesions; with its low cost and ease of use making it very advantageous for a primary screening method in developing countries. However, it does have a high rate of false positives, which if using the "see and treat method" would lead to over-treatment (Goel *et al.,* 2005).

In another Hospital based study in Nepal, out of300 women seeking consultation in thegynecological OPD 81% of the women had comewith complaints of lower abdominal pain, 62%with vaginal discharge, 47% with backache, 26.7%with irregular bleeding, 11% with dyspareunia and (Khan *et al.,* 2007) 4.3% with post coital bleeding. One of the studycarried out in India reports that among the 214symptomatic patients attending cancer awareness camps, discharge per vagina (28.5%) and pain inlower abdomen(20.1%) were the common complaints followed by backache, irregular menstruation, dysuria, dyspareunia and post- menopausal bleeding(Sharma*et al.,*2010).However, the present study was carried out in arural community and the most common complaints were vaginaldischarge followed by irregular bleeding.

This was a camp based cross-sectional study conducted among rural married women. Considering the socio-demographic characteristics of the participants and setting, only the screening tests could be performed on these women and it was difficult to carry out confirmatory tests due to poor follow up. Inspite of persistent efforts, only 2 patients with abnormal PAP smears came for colposcopy and biopsy. No other patient who were VIA positive or who had abnormal PAP turned upinspite of persistent advice. Lack of education, awareness and poor follow up are the main factors behind failure of screening programs in a rural setting. Keeping these factors in mind, VIA being a single step test with both screening and biopsy at same visit should be considered best for rural set up with poor follow up.

Conclusion

The prevalence of pre-malignant lesions of the cervix by VIA was 3.6 % while 4.05% pre-malignant lesion was detected by Pap smear method.. Lack of education, awareness and poor follow up are the main factors behind failure of screening programs in a rural setting.In low-resource areas, VIA can be better than PAP smears for its ease of use and low cost, eliminating the need for follow-up visits.

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