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Original research Article

COMPARISON OF METHODS OF SCREENING OF CERVICAL CANCER IN UDAIPUR DISTRICT.

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ABSTRACT

Background: Cervical cancer is the commonest cancer cause of death among women in developing countries. Two commonly used methods of screening of cervical cancer are cervical cytology (pap smear), and visual inspection using acetic acid (VIA). The following study was done with the objective of comparing the outcome of Pap smear, and to simultaneously screen the women of Udaipur district for cancer cervix. **Methods:** The community based study was carried out in the village of Badgaon (near Udaipur), between November 2015 to November 2016, by the Department of Obstetrics and Gynaecology of Anantha Institute of Medical Sciences. Women that were screened positive by either cytology or VIA were followed up by cervical biopsy. **Results**: Out of 400 women, 46 tested positive on VIA (11.5%) and 35 tested positive on Pap smear (8.75%). The prevalence of cervical cancer in the study population was found to be 7%. The no. of False positive cases for VIA was 21 and that for Pap smear cytology was 17. **Conclusion:** VIA is a more sensitive test as compared to Pap smear for screening of cervical cancer, although it comes with more false positives and only 11% of biopsy proven cases of Cancer cervix are asymptomatic, and majority had the complain of abnormal discharge per vaginum.

Key Words: Pap smear, VIA, Cancer Cervix.

INTRODUCTION

Cervical cancer is the commonest cancer causing death among women in developing countries **(1)**. 86% of all deaths due to cervical cancer are in developing, low- and middle-income countries, India being one of them **(2,3)**.

In India, the peak age for cervical cancer incidence is 55–59 years **(4)**. Women of older age groups and low socio economic status are very unlikely to undergo investigations for the detection of cancer cervix, unless there is a nation wide government implemented screening programme. In the absence of homogenisation of detection of cancer cervix, there is significant disparity in treatment methods and outcomes at various private and government run centres.

Two commonly used methods of screening of cervical cancer are cervical cytology (pap smear), and visual inspection using acetic acid.

In pap smear, a trained cytologist reviews the cells scraped from the squamo-columnar junction of the uterine cervix, that have been fixed onto a glass slide **(5)**. Pap smear, however, has several

disadvantages, such as high false-negative rates, low sensitivity, subjective interpretation, and low predictive values **(6)**. Pap smear also requires technical capabilities, communication, follow up and training, that most developing countries cannot afford.

The other method of screening is naked eye examination of the uterine cervix after application of 5% acetic acid, termed 'VIA'. The principle of VIA is that the acetic acid causes dehydration of cells and coagulation of cellular protein thereby reducing the transparency of epithelium that appears white. These changes are more pronounced in abnormal epithelium because of higher concentration of proteins **(7)**. The advantage of VIA is that the results are known almost immediately and the further course of action for that particular patient can be processed. Being low cost, this method is more economical for a country like India.

The following study was done with the objective of comparing the outcome of Pap smear with VIA in women aged 30 to 60 years, to determine the clinical superiority, and to simultaneously screen the women of Udaipur district for ca cervix.

MATERIALS AND METHODS

The community based study was carried out in the village Badgaon, near Udaipur, between November 2015 to November 2016, by the author and team from college.

Badgaon is tehsil village, in district Udaipur. It has a total population of 2657, out of which, 1316 are males and 1341 are females (2011 census).

Approximately 350 women between the age groups 30 to 60 years were invited to undergo screening camps organised at the premises of local PHC. These women were given motivation to get screened for cervical cancer with the help of posters, handouts and talks. Around 215 women showed up for the screening and 200 who satisfied the inclusion criteria were registered in the study. Before performing VIA or Pap smear, they were asked leading questions about the presence or absence of symptoms associated with cervical cancer like abnormal PV discharge, lower abdominal pain, backache or post coital bleeding.

Inclusion criteria: all the women between the age groups of 30 to 60 years that showed up for screening.

Exclusion criteria: women that had already been diagnosed with cancer cervix were excluded from the study. Menstruating women were temporarily excluded and were screened at a later date.

Women that were screened positive by either cytology or VIA were followed up by cervical biopsy.

Informed consent was taken from the participants and ethical clearance was obtained from ethical committee of the institute. The data was encoded in the Microsoft excel sheet and subsequent statistical analysis was done by the SPSS software for windows.

RESULTS

The women included in the study were aged between 30 to 60 years. The age distribution is shown in Table 1. Majority of the women were parous and belonged to low socio economical group.

Out of 400 women, 46 tested positive on VIA (11.5%) and 35 tested positive on Pap smear (8.75%). Table 2 shows the distribution of women based on whether they were positive on both or either one of the tests. A total of 56 patients tested positive in various testes, and were hence sent for cervical biopsy. Histological diagnosis of cervical cancer was made in 28 out

of 56 samples sent for biopsy. The prevalence of cervical cancer in the study population was found to be 7%.

The presence or absences of symptoms in the biopsy proven cases are shown in Figure 1.

Table no. 1

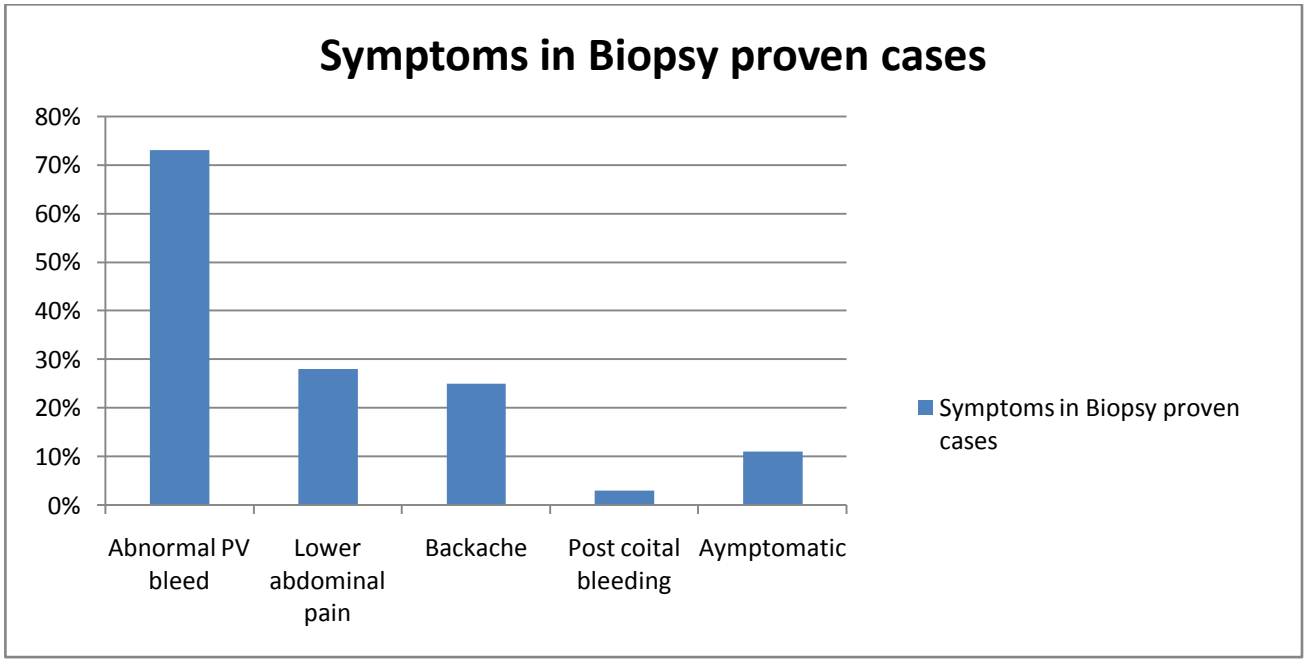
Age group	No. of patients
30 to 35 years	22
35 to 40 years	20
40 to 45 years	40
45 to 50 years	33
50 to 55 years	56
55 to 60 years	29

Table no. 2

Test outcome	No. of patients
Both VIA and PAP positive	25
Only VIA positive	21
Only PAP positive	10
Total	56

The no. of False positive cases for VIA was 21 and that for Pap smear cytology was 17. Hence, VIA is a more sensitive test as compared to Pap smear for screening of cervical cancer, although it comes with more false positives.

Figure 1



Only VIA could identify 25 out of 28 biopsy proven cases and Pap smear identified 18 out of 28 biopsy proven cases of cervical cancer.

DISCUSSION

The participants of the study were between 30 to 60 years of age, most of them belonging to low socioeconomic status, and parous.

11.5% women tested positive on VIA. Several other studies performed over the years have found similar results on VIA. A study conducted in Nepal by Vadehra et all in 2006 showed that 7.4% women tested positive with VIA **(8)**. A proportion of 6.6 % was observed by El Shalankany A (9), 9.9 % by Shankaranarayanan et al (10) and 12.5% Goel A **(11)** in other similar

studies. However, the criteria defininig VIA positivity can cary across different studies.

On Pap smear, 8.75% positive cases were found. 22 out of 300 women were found to be cytology positive in a study conducted by Bhattacharya et al in Gauhati in 2012 **(12)**.

The present study showed 7% prevelace of cervical cancer in the community. In the study conducted by Vadehra et al, Incidence of CIN/ cancer cervix in the study population was found to be 5.6 % **(8)**. Considering long term morbidity and mortality associated with ca cervix, the screening and stansardisation of screening become extremely important with such high prevalence.

Our study showed that only 11% of biopsy proven cases of Ca cervix were asymptomatic and majority had complains of abnormal discharge per viginum. Other symptoms were lower abdominal pain, backache and post coital bleeding. Similar findings were seen by Satyanarayana et al in 2014 (19.9% patients were asymptomatic, rest all had symptoms) **(13)**.

In our study, VIA is found to be more sensitive than Pap smear with higher false positives. Most of the studies done with similar objective have concluded that VIA is a more sensitive test for screening. With proper standardisation of procedure and findings, VIA is more likely to screen a female for cervical cancer. For eg, a study by Singh et al in 2005, Jabalpur concluded that VIA is more sensitive but less specific than cytology **(14)**. So do the studies conducted by Bhattacharya et al **(12)** and Vadehra et al **(8)**.

CONCLUSION

VIA is a more sensitive test as compared to Pap smear for screening of cervical cancer, although it comes with more false positives and only 11% of biopsy proven cases of Ca cervix are asymptomatic, and majority had the complain of abnormal discharge per vaginum.

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