e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2024; 16(6); 518-522

Original Research Article

Follow-Up of Visual Inspection with Acetic Acid Test Positive Patients in a Tertiary Care Hospital -Thiruvallur- A Longitudinal Study

Banu JH[1], Keerthana R[2], Padmalatha D[3], Vijayalakshmi M[4], Muruganandham R[5]

[1]Assistant Professor, Department of Community Medicine, Stanley Medical College Chennai,
[2]Assistant Professor, Department of Community Medicine, Govt. Medical College Hospital Thiruvallur,
[3]Associate Professor, Obstetrics and Gynecology, Govt. Medical College Hospital Thiruvallur,
[4]Professor, Department of Community Medicine, Government Medical College Hospital Thiruvallur
[5]Senior Assistant Professor, Department of Community Medicine, Stanley Medical College Chennai

Received: 25-03-2024 / Revised: 23-04-2024 / Accepted: 26-05-2024
Corresponding Author: M. Jannath Hameeda Banu
Conflict of interest: Nil

Abstract:

Introduction: Cervical Cancer is the second most common cancer and second leading cause of cancer death among females in India. Early detection through Population Based Screening using Visual Inspection with Acetic acid (VIA) method ensures better management and reduces mortality.

Aims/Objectives: The study aims to assess the Cervical cancer screening and follow-up of those found positive in a Tertiary Care hospital in Thiruvallur, The objectives of the study is to determine the VIA positivity rate and the different outcomes of VIA positive patients at the end of three months.

Method: This is a longitudinal descriptive based on the Hospital Record conducted for three months. The records of female patients who underwent cervical cancer screening by VIA test in the institution between January and June 2023 were obtained and they were followed up monthly for a period of 3 months either during their visit to the hospital or over telephonic conversation as per the participants' preference. Data regarding the reports of VIA test and the subsequent colposcopy and biopsy were recorded and analyzed. Data were analyzed in SPSS version-16.

Results: Among the 2773 women tested, 367 were VIA positive with a mean age of 41.72 ± 10.68 years. The VIA positivity was found to be 13.36%.One in twenty women tested VIA positive had malignancy, with 90% aged above 50 years. One among every ten women diagnosed with cervical cancer were not being followed-up.

Conclusion: This study concludes that one in seven women who undergo VIA screening have positive result and one in twenty with a positive VIA test are diagnosed with cervical malignancy. Follow-up of the patients undergoing VIA test is the key for successful prevention and control of cervical cancer.

Keywords: Cervical cancer, Cancer screening, Non-Communicable Diseases.

Introduction

Cancer is an emerging public health problem among the women in developing countries like India, with incidence of cervical cancer is high in nations with low sociodemographic indices. The women in a developing country like India have a one in forty odds of lifetime risk of acquiring cervical malignancy.[1]

Cervical Cancer is the second most common cancer among females in India. Annually around 1,23,907 women are diagnosed with cervical cancer in India.[2] It is also the second leading cause of cancer death among the females in India causing 77,348 deaths annually.[2] Cervical cancer accounts for about 9.4% of all cancers and 18.3% of new cases in a year in India.[3] The early detection often ensures better management of cervical cancer thereby reducing the mortality due to the disease. The government of India has implemented the Population Based Screening for Cervical cancer once in every five years for all females above 30 years of age.[4] The screening is carried out by Visual Inspection under Acetic acid (VIA) method by the Staff nurses at the Primary Health Centres Level under the National Program for Prevention and Control of Non-Communicable diseases (NP-NCD).[5,6] The patients who turn up positive in VIA test are referred to gynaecologist for colposcopy and biopsy and further management accordingly.

The screening method used for cervical cancer is a multi-stage screening. Women of more than 30 years are screened. A community-based assessment checklist (CBAC) is applied by the field level functionaries at the field which poses questions

regarding the symptoms of cervical cancer along with other non-communicable diseases.[1,4] At the institution level, the women are subjected to VIA test performed by a Staff nurse. The subsequent screening test for those with a positive VIA test is a colposcopy, which is a day care procedure that can be combined with biopsy if necessary.[4] The patients identified with the cervical malignancy in the multitude of screening tests are further diagnosed with appropriate clinical staging and managed with one or more modalities of treatment namely surgery, chemotherapy and radiotherapy. With screening procedures available, those found positive are to be followed up to avail further treatment which is the key element in success of the programme.

The southern state of Tamil Nadu has launched the MakkalaiThediMaruthuvam (MTM) Scheme to implement the Non-Communicable Diseases (NCD) related activities of the NP-NCD programme since August, 2021. Under the scheme, population based screening activities are done at the door-step of the beneficiaries for ten NCDs, including Cervical Cancer. The scheme tries to promote the cervical cancer screening by motivating the women at the field level and the screening process is done at the institutional level in the MTM clinic.[6] This study aims to assess the Cervical cancer screening and follow-up done in the MTM clinic in a Tertiary Care hospital in Thiruvallur,

Objectives

The objectives of the study is to determine the VIA positivity rate and the different outcomes of VIA positive patients at the end of three months.

Materials and Methods

This study is longitudinal descriptive study based on Hospital Record obtained in Non-Communicable Diseases clinic in a Tertiary Care hospital in Thiruvallur. The study was conducted for a period of three months between August and October 2023 after obtaining ethical clearance from Institutional Ethical Committee in July 2023 The records of female patients who were underwent cervical cancer screening by VIA test in the institution between January and June 2023 were obtained. The study participants included women of more than 30 years and willingly undergoing VIA screening. Among those who underwent the procedure, women of age <30 years and who had cervical growth were excluded from the study. Also the patients who had previous history of treatment of cervical cancer or had undergone hysterectomy in the past were also not part of the study as they were not subjected to the procedure. All women who were found positive for VIA test were included for the analysis.

Assuming the rate of screening for cervical cancer to be 23.4% as per a study done among rural women in Vellore, Tamil Nadu, the sample size was calculated with a 95% confidence level and absolute precision of 5.[1] The final sample size was arrived at 302 with 10% non-response rate. The records of female patients who underwent cervical cancer screening by VIA test in the institution between January and June 2023 were obtained and they were followed up for a period of three months.

Screening Process

Step 1: VIA test – After obtaining the informed consent, the women attending the NCD clinic of age more than 30 years were subjected to Visual Inspection using 5% Acetic acid. In lithotomy position, under speculum inspection, after removing excess secretions 5% Acetic acid was applied using a cotton swab over the external os, columnar epithelium, squamous epithelium and squamocolumnar junction. A positive test was reported when acetowhite patches were observed after 1 minute of application of 5% acetic acid. The intensity, border, uniformity, location and size of the acetowhite lesions were taken into account. Those positive were further subjected to colposcopy. Those who were VIA negative were advised to follow up every five years.

Step 2: Colposcopic examination – All the women with a positive VIA test were subjected to Colposcopy. After the examination of cervix, vagina and vulva under a colposcope, the patients were advised to follow up with a colposcopy guided biopsy if the former was unsatisfactory or abnormal. To avoid loss to follow up, the patients with low grade Cervical Intra-epithelial Neoplasia (CIN-I) which have a low potential for developing into malignancy were treated with thermo coagulation in the same visit. They were further motivated to follow up after one year, as those with a normal colposcopy examination.

Step 3: Biopsy and Pathological Diagnosis - The diagnosis of the cervical malignancy was made by biopsy and those diagnosed with a malignant lesion were further consulted by the gynaecologists for clinical staging of disease using appropriate imaging tests. They were appropriately advised of the treatment or referred to higher institutes as per the standard treatment guidelines by the Department of Obstetrics and Gynaecology.

For the study, the follow up of the patients with a malignant diagnosis was done by phone interview and in person interviews when the patients visited the MTM clinic, after obtaining consent. The data collection tool included details about the results of the multiple levels of the screening process, complete diagnosis, current status of the

participants, nature and place of the treatment undertaken by the participants.

The Outcome of the study was to determine the positivity of VIA test (proportion of women tested positive in VIA tests), cervical cancer detection (number of cervical cancer detected and the proportion of the same out of the positive VIA test), follow-up of the non- malignant outcomes, follow-up of malignant outcomes (number of participants died of the diagnosis or lost to follow-up or completed treatment or undergoing treatment during the follow-up time). Data entry was made using the Microsoft Excel 2013 version. The reports of VIA test and the subsequent colposcopy and biopsy were analysed using the Statistical Package for Social Sciences (SPSS) version 16 and the results were described in proportions.

Results

Out of the 2773 women enrolled to screen for cervical cancer by VIA over the period of six months, 26 (0.94%) were excluded from the study due to presence of cervical growth on visual examination.

Among the rest, 367 women were found to be VIA positive amounting to a VIA positivity rate of 13.36%. Among the 329 VIA positive women who fulfilled the inclusion criteria as per the national programme as well as the current study, 24 (7.3%) also had erosion and four (1.2%) bled to touch. The mean age of the women with a positive VIA is 41.72 ± 10.68 years.

The age distribution of the women with a positive VIA result and cervical malignancy is depicted in the table below.

Table 1: Age distribution for positive VIA result (N=367) and cervical malignancy (N=18)

Sl. No.	Age group (in years)	Number of women with positive VIA (n=367) (%)	Number of women diagnosed with malignancy (n=18) (%)
1	20-30*	38 (10.4)	0 (0)
2	30-39	124 (33.8)	0 (0)
3	40-49	138 (37.6)	2 (11.1)
4	50-59	44 (12.0)	6 (33.3)
5	60-69	14 (3.8)	8 (44.4)
6	≥ 70	9 (2.4)	2 (11.1)

*-This group was excluded from follow-up study as they did not fulfil the inclusion criteria

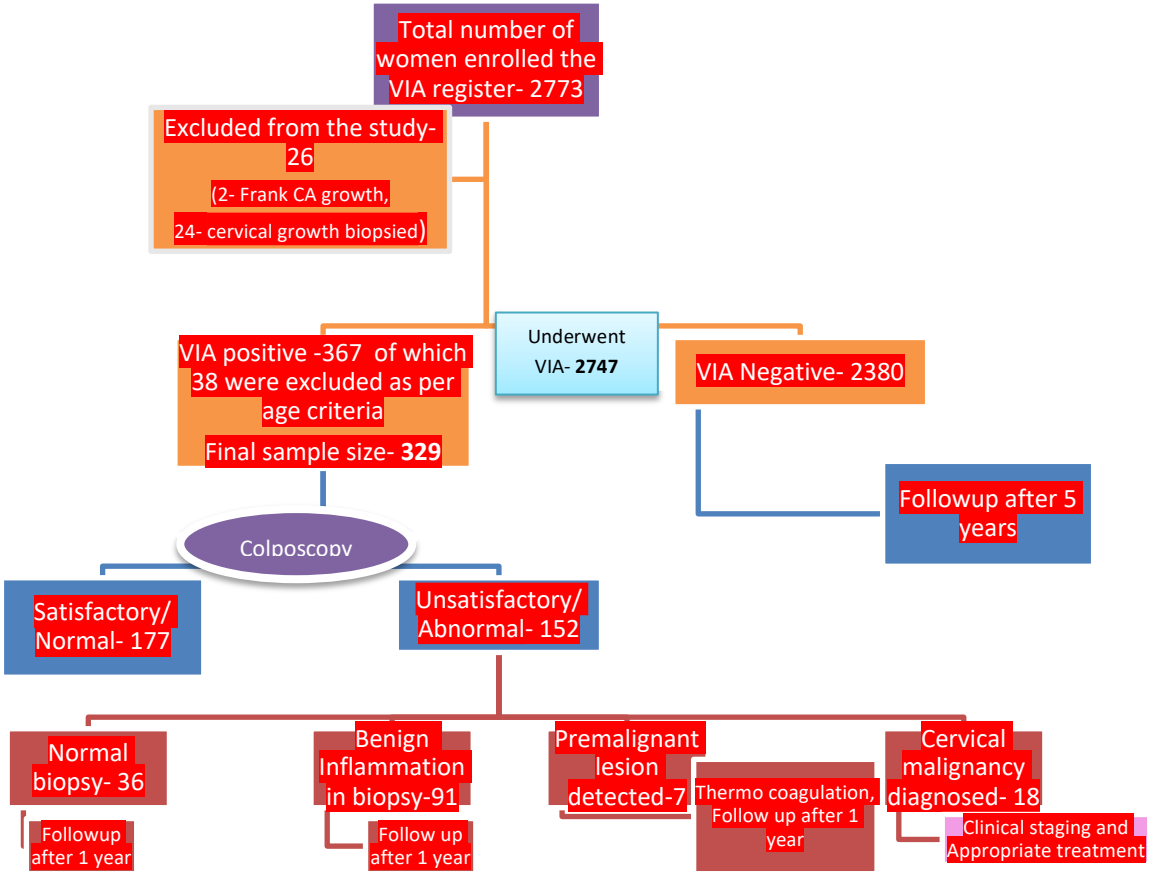

Figure 1: Screening process for cervical cancer depicting the participant recruitment for the data collection

All the women with a positive VIA were subjected to Colposcopy (N=329). Amongst them, a normal and satisfactory colposcopy was seen in 53.8% (n-177) while 46.2% (n-152) had an abnormal and unsatisfactory report and was subjected to biopsy. This accounted for 5.5% (152/2747) of all who had undergone VIA test.

Among the VIA positive women, 18 (out of 329) i.e., 4.9% women were diagnosed with cervical malignancy, which accounted for 0.65% (18/2747) of all the women who underwent screening. More than half of the patients diagnosed with malignancy were of the age 60 years (10/18) and above whereas the proportion of VIA positive in that age group was little over 6% (23/367) as described in Table-1.

Benign Inflammatory lesions were seen in 27.66% (91/329) of women and biopsy was normal for 10.9% (36/329) women with VIA positive result. Further, premalignant lesion was found in 2.1% (n-7) patients and thermo coagulation was done for them. Both groups of women were also advised to follow up after one year.

The 18 patients diagnosed with cervical malignancy were further evaluated for the staging of the disease by the Department of Obstetrics and Gynaecology and referred accordingly for further management. The follow up of the patients with a malignant diagnosis revealed that 3 patients have successfully completed the treatment and are under regular follow up at higher centres. An additional 9 patients reported that they are undergoing chemotherapy/ radiotherapy and under constant follow up. Two more patients reported to be taking treatment from private hospitals, under alternate systems of medicine. Two patients were not on any treatment/ follow up. Another two patients expired within two months of diagnosis, accounting that 11% were loss to follow-up rate after the duration of three months and 11% had fatal outcome during the three months of follow-up

Discussion

In the present study, positive result in VIA was recorded in 13.36% of the women subjected, in concordance with two other studies done in rural Andhra Pradesh and rural South Tamil Nadu where the positivity rate was found as 10.75% (ranging between 7.5% and 16.2%) and 24% respectively.[7,8] The study by Sankaranarayanan R showed that the positivity rate of VIA test was found to be 13.9%.[9] in the study by Kavita et al in Jabalpur, the rate was slightly higher at 16.26%.[10] The mean age of the VIA positive women was 41 years, which correlates with the study by Vidhubala et al and Kavita et al where it was 39 and 38.2 years respectively.[8,10] Less than one percent of the women enrolled to VIA screening were found to have frank cervical growth on inspection and excluded from the current study, which is similar to the study done in rural Andhra Pradesh by Poli et al.[7]

In the current study, all the 329 VIA positive subjects were subjected to colposcopy and 151 were subjected to biopsy as is the case in the study by Kavita et al, which is 5.6% of all women screened, whereas 9.1% underwent colposcopy guided biopsy in the study by Poli et al.[10,7] 98.7% of the women with positive VIA result underwent colposcopy in the study done in Maharashtra by Sankaranarayanan R et al.[9] Precancerous lesions were found among seven women i.e., 0.25% among the screened women, the proportion was 0.48% in the study done in rural Andhra Pradesh.[7] The study by Sankaranarayanan R et al showed that 6% of the people who underwent VIA test showed CIN lesions in biopsy.[9] 18 of the 2747 women screened were diagnosed with cervical malignancy, amounting to 0.65%, a proportion similar to that of the earlier mentioned study.[7] Sankaranarayanan R et al demonstrated that 0.3% of the VIA positive had cancer diagnosis.[9]

In the study aforementioned, 1.65% of the women underwent cryotherapy by both “screen and treat” and “screen, test and treat” methods [7]. In the present study, only the later method was adopted as it became universally accepted method since 2008. And instead of cryotherapy, thermo coagulation was performed in all detected with premalignant lesions like Low grade Squamous Intraepithelial lesions (LSIL) as per the adopted protocol in the national programme.[7] It was recorded that 0.57% of the totally screened women were referred to higher centres with a suspicion or diagnosis of carcinoma, the proportion was 0.65% in current study and all were referred for oncologist opinion and definitive treatment to higher centres. Furthermore, 78.78% of them responded that they are continuous treatment or follow-up, when enquired after three months. Two of the women had expired accounting to a fatality rate of 11.1% and loss to follow-up was recorded to be 11.1%.

With regards to the age of the study participants, it was noted that though more than 89% of the women who were VIA positive were of less than 50 years of age, cervical malignancy was diagnosed older age group of women, with more than half cases diagnosed in women above 60 years of age. No women with cervical malignancy were below the age of 40 years. This clearly implies the need for cervical cancer screening among women of younger age preferably in the age group of 30-40 years, to ensure the prompt diagnosis of premalignant lesions or early changes, leading to

early intervention so as to halt the disease progression.

Limitations

As the present study is hospital record-based study, except age, the other sociodemographic details of the women who underwent screening were not considered, which could be useful to identify the sub-population which needs to be motivated to improve the proportion before undergoing cervical cancer screening. The presence of any complaints could have been included in the study to identify the common clinical presentation in the women of vulnerable population. Awareness and attitude of the population in question towards cervical cancer screening could also have been researched.

Conclusion

One in seven women who undergo VIA screening have positive result and one in twenty with a positive VIA test is diagnosed with cervical malignancy. Effective screening using VIA in low resource settings can be beneficial if the patients are followed till their management in order to prevent early deaths due to cancer cervix.

Recommendations

Early screening and follow-up till the treatment are the key strategies to be adopted. Continuum of follow-up and maintenance of record of the women undergoing cervical cancer screening need to be addressed. The need for studies with long term of follow-up is also appreciated, in order to get a comprehensive picture of prognosis of women with cervical growth and to address the difficulties faced during follow-up.

Acknowledgements: We thank the Staff Nurses posted in the NCD clinic and the CRMIs who helped us in the data collection.

References

1. Saha S, Priya SM, Surender A, Jacob RC, George MP, Varghese NM, et al. Screening practices for breast and cervical cancer and associated factors, among rural women in Vellore, Tamil Nadu. Indian J Cancer. 2023; 60:65-71.
2. Bruni L, Albero G, Serrano B, Mena M, Collado JJ, Gómez D, Muñoz J, Bosch FX, de Sanjosé S.ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre). Human Papillomavirus and Related Diseases in India. Summary Report 10 March 2023. Available from: https://hpvcentre.net/statistics/reports/IND.pdf
3. Mehrotra R, Yadav K. Cervical Cancer: Formulation and Implementation of Govt of India Guidelines for Screening and Management. Indian J Gynecol Oncol. 2021 Dec 27; 20(1):4.
4. India. National Health Mission. Training Module for Staff Nurses on Population Based Screening of Common NCDs: Ministry of Health and Family Welfare. New Delhi, India: NHM; p22-29.
5. National Centre for Disease Control, Directorate General of Health Services. Training Module for Medical Officers for Prevention, Control and Population Level Screening of Hypertension, Diabetes and Common Cancer (Oral, Breast & Cervical) 2017. New Delhi, India: Ministry of Health and Family Welfare: 2017. P27-30.
6. Government of Tamil Nadu. G.O. (Ms) No. 340 National Health Mission - Tamil Nadu - Implementation of "MakkalaiThediMaruthuvam" Scheme in Tamil Nadu- Orders – Issued. Chennai, India. Health and Family Welfare (EAP II-1) Department: 2021 August 03. Available from: https://cms.tn.gov.in/sites/default/files/go/hfw_e_340_2021.pdf
7. Poli UR, Bidinger PD, Gowrishankar S. Visual inspection with acetic acid (via) screening program: 7 years' experience in early detection of cervical cancer and pre-cancers in rural South India. Indian J Community Med 2015;40:203-7.
8. Vidhubala E, Niraimathi K, Shewade HD, Mahadevan S. Cervical Cancer Care Continuum in South India: Evidence from a Community-based Screening Program. Journal of Epidemiology and Global Health. March 2020;10(1):28–35
9. Sankaranarayanan R, Nene BM, Shastri SS, Jayant K, Muwonge R, Budukh AM, et al. HPV Screening for Cervical Cancer in Rural India. N Engl J Med. April 2,2009; 360(14): 1385-1394
10. 10. Kavita S, Shefali M. Visual Inspection of cervix with acetic acid (VIA) in early diagnosis of cervical intraepithelial neoplasia (CIN) and early cancer cervix. J Obstet Gynecol India. Jan-Feb 2010; 60(1):55-60.