Original Article

A Study on Screening for Cervical Carcinoma, its Prevalence and Influence of Socio- Demographic factors in Urban / Rural Population of Karimnagar District

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ABSTRACT

Background and Aim : Carcinoma of cervix is a worldwide problem, it accounts for 15% of all cancers. It is second most common cancer in women globally and 80% were in developing countries. The objectives of study was to find out the prevalence of cervical carcinoma cases by screening with VIA test followed by colposcopy guided biopsy.

Materials and Methods: A cross sectional study was performed among females aged 20 to less than 65 years in Karimnagar town & Ramadugu mandal by screening camp approach for cervical cancer, registered females were subjected to VIA test, positive cases subjected to colposcopy guided biopsy at cancer hospital CAIMS.

Results: from 25495 total females population 6726 (26.4%) have attended the camps and 2336 (34.7%) women were screened with VIA test after taking informed consent. 640 (27.4%).women were VIA positives and 559 VIA positives subjected for colposcopy guided biopsy. 476(86.9%) were normal, 83 cases in different stages disease. Among them CIN1 - 55, CIN 2 -14, CIN 3 -11 and cervical CX -3.

Conclusion: VIA followed by colposcopy guided biopsy is an useful screening method for detection of cervical malignancy and confirmed cases referred for treatment and follow up at tertiary care Cancer Hospital, CAIMS, Karimnagar, Telangana.

Keywords: Cervical cancer, VIA test, colposcopy.

INTRODUCTION

All over the world cervical cancer is the second most common cancer in females after breast Cancer.[1,2] It is estimated to be 4,60,000 new cases annually from which 3/4th cases are from developing countries. Cervical cancer is still the leading genital tract malignancy of females in India, estimated that approximately 100,000 women/ year.[3] It is considered as the most fatal malignancy in women.[2] Out of 16% of the world total cases, only 5% are reported in early stages.[1] Due to lack of human & material resources, many developing countries fail to provide efficient screening for cervical cancer.[4] Based on experience of countries with mass screening programs, IARC (International Agency for Research on cancer) reported the incidence 93% reduction in cervical cancer when women (aged 35-64 years) were screened 1-3 years, 84% reduction when screened 5 years, and 64% reduction when screened 10 years.[4]

The Indian studies showed that visual screening tests for cervical abnormalities are affordable, simple, acceptable, feasible and reasonably accurate clinical tool for early detection that can be readily used in a variety of healthcare settings in both developing and developed countries. [3,5]

The incidence of mortality from the disease in developing countries is very high. Women of low socio-economic status and minority women are at particular risk.[6] Human papilloma virus (HPV) Type 16&18 are responsible for 70% carcinoma cervix.

The risk of cervical cancer in Muslim women was noted internationally. Human papilloma virus recognized as one of the leading cause and is associated with 90% cases, however other risk factors eg; Age, first sexual contact, socio economic status, multiparty, diet, genetic predisposition and environment also associated with cervical cancer.[7]

Death toll of women approximately 2,37,500 dying with cervical cancer and is the primary cause of cancer deaths of any women in developing countries.[8]

The American Cancer Society relies on information from the SEER* database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer. The SEER database, however, does not group cancers by stage 1, stage 2, stage 3, etc. Instead, it groups cancers into localized, regional, and distant stages:

Localized: There is no sign that the cancer has spread outside of the cervix or uterus.

Regional: The cancer has spread beyond the cervix and uterus to nearby lymph nodes.

Distant: The cancer has spread to nearby organs (like the bladder or rectum) or distant parts of the body such as the lungs or bones.

SEER : Stage 5-year Relative Survival Rate Localized 92%, Regional 56%, Distant 17% and All SEER stages combined 66%. Similarly, the result is consistent with that of Ezechi et al. [9] and Modibbo et al.[10], in which religion did not predict cervical cancer screening intention. Categorization of respondents' religion in these previous studies was similar to that of the present study, and that may have influenced the outcome. Marital status was not a determinant of intention to screen. Additionally, respondents who are divorced and widowed were added to single women and considered unmarried.

The level of educational attainment could facilitate decisions in accessing health services including cervical screening. Several studies have affirmed education as an important predictor of intention to screen and cervical cancer screening behaviour. The findings suggest that women with no formal education may not have intention to seek cervical screening. [11, 12, 13, 14]

Women who are illiterate or have not had any form of education may have poor access to health services and experience low quality of life. Women with no formal education may be at high risk of contracting cervical cancer. Education, therefore, allows women to have improved socio-economic status and decreased morbidity and mortality, as they become more empowered to control the determinants of their health.[15]

This study was under taken to find out the magnitude of pre-cancerous lesions in both urban and rural Karimnagar district.

Objectives:

1. To find out the prevalence of cervical carcinoma by screening with VIA followed by colposcopy guided biopsy in Karimnagar district.
2. To find VIA as a useful screening method for detection of cervical lesions in mass screening programs.

MATERIALS AND METHODS

Study Design
Cross Sectional Study.

Study Centre
2 Areas are included Karimnagar Town & Ramadugu Mandal.

Study Duration
Between May 2018 to December 2019.

Study Population
The total female population is 25495 in 25 villages, 2336 (9.2%) participated in this VIA test screening program conducted every week.

Inclusion Criteria

- apparently healthy & ambulatory
- Married or widows, Age above 20 years
- Intact uterus No previous diagnosis of CIN

Exclusion Criteria

- Pregnant women,
- Unmarried, < 20 years
- Hysterectomy women
- Being in menstrual period

Procedure

Participants details of socio demographic characteristics were recorded. Informed consent was taken and subjects to Screened with VIA 5% acetic acid (scored after 1 min for Aceto white areas) was done. Positive cases referred to CAIMS with in 1-15 days for further investigations.[7] Colposcopy done for Positive cases and subjected for Biopsy (HPE) Depending on the stage of CIN participatants are referred to Cancer Hospital, CAIMS Karimnagar for further treatment. For negative cases symptomatic treatment given at the screening camp.

STATISTICAL ANALYSIS

The data was entered in Microsoft excel sheet and chi square test was applied.

RESULTS

Table 1: VIA test Categorization of the studied population

Total population of all villages	65880	%
Total No. of Females	25495	
Females Registered	6726	26.4%
Total Hysterectomy	1021	15.2%
VIA done	2336	34.7%
VIA positive	640	27.4%
VIA negative	1696	72.6%

The above table shows that registered for VIA test were 6726 females, among them 2336 women were under gone VIA test, remaining (4390) were not accepted for VIA test. 27.4% (640) among them were positive and 72.6% (1696) VIA test was negative.

Table 2: According to ageDistribution of study subjects in cancer screening group

Age	Total screened	Positive	Negative
20-25	329 (14.1)	107 (16.7%)	222(13.0%)
26-35	803 (34.4)	247(38.5%)	556(32.7%)
36-45	565 (24.2)	163(25.4%)	402(23.7%)
46-55	311 (13.3)	73(11.4%)	238(14.0%)
56- 65	328 (14.1)	50(7.8%)	278(16.3%)
Total	2336	640	1696

The table shows among age group 26 to 45 years 63.9% were VIA positive.
Chi Square = 36.27
Degrees of Freedom = 4
p-value = 0.00000025

Above table shows in rural Karimnagar VIA test positives are more (382/1457) as compared with urban (258/879).

Among the study group Hindu 615/2229 were positive, Muslims 24/101 were positive and Christian 1/6 were VIA test positive p value =< 0. 001 significant.

Among the literates150/893 were VIA positive and 490/1443 positive among illiterates. P value=<0.001 significant.

Among socio economic group (working/non working) 459/1559 were positive among working group and181/777 were positive among non working group. P value = < 0.001.

Among married, unmarried and widows - more 634/2307 were positive among married women as compared with unmarried and widows. P value = < 0.001 significant.

Table 3: VIA Test with Socio Economic & Demographic Profile of study group

Demographic Profile	VIA +ve	p value	VIA -ve	Total
Urban	258		621	879
Rural	382		1075	1457
Hindu	615	<0.001*	1614	2229
Muslim	24		77	101
Christian	1		5	6
Literate	150	<0.001*	648	893
Illiterate	490		1048	1443
Working	459	<0.001*	1100	1559
Non Working	181		596	777
Married	634	<0.001*	1673	2307
Unmarried	3		8	11
Widow	3		15	18

Table 4: Distribution of study subjects according to parity and VIA test positivity

No. of children	Total screened for VIA	VIA positive	VIA negative
1	334	56(8.5%)	258(15.2%)
2	913	221(34.5%)	638(37.6%)
3	621	370(57.8%)	434(25.5%)
no children	42	7(1.0%)	35(2.1%)

X2=17.5, df=5, P value = 0.003640

The table shows parity of having <2 children those females 43% having VIA positive and having >3 children 57.8%.

Table 5: Colposcopy & Biopsy results

Colposcopy	559
Biopsy	83
CIN I	55 (66.2%)
CIN II	13 (15.6%)
CIN III	11(13.2%)
Ca Cervix	3(3.6%)

The table shows 559 suspected cases subjected for colposcopy done. Among them 83 biopsy showed 66.2% CIN I, CIN II 15.6% 13.2% CIN III Ca Cervix 3.6%.

DISCUSSION

Cancer of the cervix is an important concern globally, it is the second most prevalent cancer that impacts the

health and mortality of women. It is estimated to be 4,60,000 new cases annually from which 3/4th cases are in developing countries. Cervical cancer is still the leading genital tract malignancy of females in India, estimated that approximately 100,000 women/year. Visual inspection with acetic acid (VIA) is introduced as an alternative method that is more suitable to India's condition as it is a non-invasive, easily performed, and inexpensive method. In addition, the result can be obtained directly with a good sensitivity and specificity rates so it can be applied in all primary health care to increase the coverage of cervical cancer screening program.

To the best of our knowledge this is the large scale trial screening program for cervical cancer under cancer hospital ChalmedaAnand Rao Institute of Medical Sciences, Karimnagar district. In present study table 1, shows that 6726 (26.4%) females were registered for VIA test, Among them 35.7%(2336) women were under gone VIA test, remaining 65.3% (4390) were not accepted for VIA test. Among them 27.4% (640) were positive and 72.6% (1696) were VIA test negative. Similar study was conducted at Jakarta Indonesia involving 25.406 women patients screened with VIA spreading across several primary health centres (Puskesmas) and other agencies in several areas of Jakarta.[16]

In present study table 2, shows that total 640 females with VIA positive test were in the age group of 26-35 38.5% (247), 36-45 age group 25.4%(163) and above 45 age group 19.2% (123). Similar study in Jakarta showed 1,192 cases of women with positive VIA result, a total of 534 cases (44.8%) are in the range of age 30-39 years, 303 cases (25.4%) are in the range of age 40-49 years and surprisingly 25.0% of VIA positive are in the range of age 20–29 years. This falls in range of 31 to 75% in the study done by N. Bhatla et.al.[17]

The socio-economic and demographic profile table 3 shows that women VIA positive from urban Karimnagar were 40.3% (258) and 59.6% (382) were from rural Karimnagar.The higher proportion of respondent belongs to Hindu religion 2229 among them VIA positive 615/640 (90.0%), Muslims 101 respondents among them positives 24/640 (3.7.0%) and Christian 6 women participated among them 1/640 (0.15%) case was VIA positive. Similar study was conducted central region of Ghana AfricaA high proportion of the respondents, 89.7% (n=592), were Christians while 10.3% (n=68) were Muslims. The result is consistent with that of Ezechi et al.[18] and Modibbo et al.[19], in which religion did not predict cervical cancer screening intention. Categorisation of respondents' religion in these previous studies was similar to that of the present study, and that may have influenced the outcome.

Among the 893 participants literates, 23.4% (150/640) were VIA positive and 1443 were illiterate from them 76.6% (490/640) were positive for VIA test. Similar study from Ghana shows again, 21.7% (n=143) were not formally educated, 62.1% (n=410) had low level of education and only 16.2% (n=107) had high level of education.[16, 20]

Among married group 99% (634/640) were VIA positive remaining 1% were unmarried & widows. In similar study at Ghana showed With regard to their marital status, 53.2% (n=351) were married while 46.8% (n=309) were not married. This finding confirms previous studies in which no significant relationship was found between those who were married and the unmarried in relation to cervical cancer screening intention.[16, 21]

In our study group 71.7% were working group showed VIA positive, 28.3% were Non working group.Similar study of Ghana showed 54.2% (n=358) were working while 45.8% (n=302) were not working. The finding confirms previous studies in which employment status was not a determinant of screening[22], NN2. It seems employment may not guarantee intention to participate in a health promotion activity.

In our study religious group, literates and illiterate group, married, unmarried & widows group and working and non working group showed statistically significant with similar study done at Ghana The results show that low levels of education (primary and secondary) and high education (tertiary) statistically significantly contributed to intention to screen, with p-values of 0.001 and 0.005 respectively using respondents with no formal education as the reference category.

In our study group higher proportion of females with VIA positive test were having >3 children (57.9%) followed by less than 2 children 43%) [23,24] Additionally, 54.2% (n=358) were working while, Recently VIA was shown to be associated with 25 % reduction in cervical cancer incidence and 35% reduction mortality from cervical cancer in a randomized control trials in south India. [25] The sensitivity of VIA in diagnosing CIN was 97% which was in agreement with the findings of most published trials.[23] Detection rates of CIN2&3 lesions by visual screening did not show much difference.[25]

CONCLUSION

Visual test constitutes a promising approach in low resource setting with further investigation, confirmation of diagnosis & treatment are crucial for successful screening Programme VIA seems to be excellent cervical screening method for use in the low resource settings where pap smears and HPV are inappropriate due to either lack of expertise or higher per-cost.

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CONFLICT OF INTEREST:

The authors declared no conflict of interest.

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