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VISUAL INSPECTION OF CERVIX WITH ACETIC ACID: AN ALTERNATIVE TO CYTOLOGY IN EARLY SCREENING OF CERVICAL CANCER IN LOW RESOURCE SET UP.

Obstetrics & Gynaecology

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ABSTRACT

Objective: - To assess the role of visual inspection with acetic acid as an alternative to cytology (pap smear) in screening for cervical cancer in low resources set up.

Material and Methods: - Women with > 30 years of age visiting the gynecology out patient with varied complaints of District Hospital, Udhampur, were subject to visual inspection of cervix with acetic acid (VIA) and pap smear.

Result: - In the present study, the sensitivity of pap smear came to be 90% and specificity came out to be 73%. The sensitivity of VIA in detecting cervical cancer was 90% and the specificity was 42.17%.

Conclusion: - VIA is comparable to pap smear (cytology) and it can be an alternative screening test due to its high sensitivity, simple administration and low cost in low resources set up.

KEYWORDS

Pap smear, Visual inspection of cervix with Acetic Acid, Cervical cancer.

INTRODUCTION :-

Cervical Malignancy is one of the most preventable and curable of all cancer (1). Globally, 500,000 new cases of cervical cancer are diagnosed annually and 2,80,000 women die of the disease (2). World-wide data shows that cervical cancer is the second most common cancer in women, comprising and being the most common in developing countries (3). Usually 70% or more of the cases present in stage 3 or higher at the time of diagnosis (4). It is estimated that in India, 1,26,000 new cases occur annually (5). Cervical Cancer can be prevented if cellular changes are detected and treated in early stage. In developed countries, the incidence of cervical cancer has decreased, due to screening, early detection and early treatment of precancerous lesions. The reason for the higher prevalence of cervical cancer in developing countries are a lack of resources, lack of awareness, lack of effective screening programs and poorly organized health system aimed for detecting precancerous condition. In Developing countries, 80% of cervical cancers are in curable at the time of detection due to advanced stage (6). So there is a need for a low cost, mass approach for effective cervical cancer screening programs (7). Althrough cytology (Pap Smear) is reliable the laboratory Infrastructure, counseling follow up and logistics including technical expertise may not be available in low resources settings (8). The use of Acetic Acid during visual examination of the cervix is termed as visual inspection with Acetic Acid (VIA).

Aims and Objectives :-

1. To compare the efficiency of VIA and Cytology (Pap Smear) in the detection of cervical Intraepithelial lesion.
2. To assess the role of VIA as an alternative to Cytology (Pap Smear) in screening for cervical cancer in low resources set up.

MATERIAL AND METHODS :-

300 women > 30 years of age who attended the Gynecology Out Patient Department at District Hospital, Udhampur, for varied complaints were enrolled in the study. Pregnant women were excluded. The study design is cross sectional study for Pap Smear and VIA. First, Pap Smear was taken by LBC Kit followed by VIA. All patient who tested positive on any screening test then underwent biopsy for conformation. (Gold Standard).

RESULT :-

Out of 300 patient were enrolled, maximum patient were in the age group of 30-40years (57%)

Table 1 :- Shows Pap Smear report.

Pap Smear Report	No. of Women (%)
Normal	228 (76 %)
Inflammatory	28 (9.3%)
ASCUS	11 (3.6%)
LSIL	18 (5.6%)
HSIL	11 (3.6%)
Cancer cervix	4 (1.3%)

In the study NILM and inflammatory Cytology was taken as negative (normal) Smear, Normal Smear was 256 (85.33%). ASCUS, LSIL, HSIL and Squamous cell carcinoma (SCC) were taken as positive (Abnormal) Pap smear. Total abnormal Pap smear was 44 (14.66%).

Table 2 :- shows results of VIA

VIA Findings	No of Women(%)
VIA negative (Not showed aceto white areas)	237(79%)
VIA positive (showed aceto white areas)	63(21%)

VIA of cervix was done for all 300 cases. 63 cases (21%) shows acetowhite areas and were positive and 237 cases (79%) were negative that is neither showed acetowhite areas nor had transient acetowhite areas suggestive of inflammation.

Table 3 :- shows histopathology report

Biopsy Report	No of Women(%)
Normal	13(4.33)
Chronic Cervicitis	50(16.66)
Dysplasia	21(7)
Squamous Cell carcinoma	9(3)

In this study, all patients who tested positive of any of the screening test underwent cervical biopsy from the suspected area. Out of the 300 cases, 207 (69%) did not require biopsy and 93 patients (31%) required biopsy. Out of the 93 biopsies done, 50 (16.66%) had chronic cervicitis, 13 (4.33%) patients had normal histopathology report, 21 (7%) biopsy came as dysplasia and only 9 (3%) come as squamous carcinoma.

Table 4 :- shows comparison of Pap smear and VIA

Results	Pap Smear	VIA
Sensitivity	90%	90%
Specificity	73%	42.87%
PPV	61%	42.85%
NPV	93.87%	90%
Accuracy	78.49%	58.06%

In this study, taking histopathology (biopsy) as gold standard, Pap

smear (cytology) results were compared using Chi-Square-test. The sensitivity of pap smear was 90% and specificity was 73.0%. The positive predictive value was 61% and the negative predictive value was 93.87%. The accuracy of the test was 78.49%.

Statistical analysis was done for VIA. The sensitivity of VIA in detecting cervical cancer was 90% and the specificity was 42.87%. The positive predictive value was42.85% whereas the negative predictive value was 90%. Over all diagnostics accuracy was 58.06%.

DISCUSSION :-

In this study, the age range taken was between 30-50years. This consideration was taken because the prevalence of human papilloma virus (HPV) infection is highest, at the younger age when sexual activity starts i.e, 15-20 years of age. The peak prevalence of cancerous lesion of cervix occurs 10 years later following HPV infection, i.e- 25-30years of age. In this study, mostly patients are in the age of 30-40 years. It is consisted with Goel et al (9), i.e where the study participants were in the age of group of 30-40years. In the present study, histopathology (biopsy) was taken as gold standard. 93 patients under went biopsy. Pap missed 3 cases of dysplasia and gave the report of NILM. Biopsy confirmed one case of ASCUS, one case of LSIL and one case of HSIL. Pap correctly identified 4 cases of SCC.. The sensitivity of pap smear was 90% and specificity was 73.0%. The positive predictive valve was 61% and the negative predictive value was 93.87%. It is consistent with Zimbabwe.project (10) where sensitivity of Pap smear was 90.6% and specificity was 44.3%. It is also consistent with Manisha et al (11) where sensitivity was 90.48% and NPV was 94.59%.

In this study, 63 cases were VIA positive and 237 were VIA negative. 93 cases were taken, 63 cases were VIA positive and 30 cases were VIA negative. Out of 63 cases, 19 cases were dysplasia, 8 cases of SCC. 30 VIA positive were chronic cervicitis and 6 patient were normal. VIA mised 1 SCC and 2 cases of dysplasia.

The sensitivity of VIA was 90% and specificity of VIA was 42.87%. The positive predictive value was 42.85% and negative predictive value was 90%. It is consistant with Goel et al (9) where sensitivity was 96.7% and specificity was 36.4%, PPV was 58% and NPV was 99.7%. It is also consistent with Saleh et al (12) were sensitivity of VIA was 90% and specificity was 37%, PPV was 52% and NPV was 81%.

CONCLUSION :-

VIA can be an alternative screening test to pap smear (Cytology) due to its comparable sensitivity, specificity to pap smear, simple administration and low cost in low resource set up. VIA has high NPV, which means when a test is negative, the women can go home , assured that she is not likely to have a neoplastic cervical lesion. Thus time has come to integrate VIA- based screening program at the primary level of health care services that can help to downstage cancer cervix in our country.(12)

Conflict of Interest :- None Declared.
Finding :- NIL.

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