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A COMPARATIVE STUDY OF CONVENTIONAL PAPANICOLAOU STAINED SMEARS AND VISUAL INSPECTION WITH ACETIC ACID FOR SCREENING OF CERVICAL LESIONS: A STUDY IN KOLKATA

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ABSTRACT

Introduction: Cervical cancer is an important area of action for any cancer control programme because of the burden of the disease, and the potential for effective prevention via screening. Cancer cervix has been considered preventable because it has a long pre-invasive state and availability of screening programmes and treatment of pre-invasive lesion is effective. The main cause of cervical cancer is a sexually transmitted infection by human papilloma viruses. Visual inspection of the cervix after application of 4% acetic acid (VIA) is an alternative low-cost method of screening of cervical lesions that has been investigated in recent years .In contrast to VIA, PAP smear may be ideal and practical in developed countries. The cytology based screening is effective but beyond the capacity of health services of rural India. This study was therefore contemplated so that all women in the society can be screened for early cervical cancers/lesions and a curative treatment can be identified at the same time to reduce the burden of invasive cancer from society. **Objective:** 1)To detect premalignant & malignant lesion of cervix at the earliest stage.2)To evaluate the effectiveness of PAP smear versus VIA so that we can apply VIA as a screening program in RURAL INDIA where PAP smear facility is not available.3)Findings were corroborated and the two methods are compared. Specificity, sensitivity, positive and negative predictive values were determined. **Results:** Out of 200 women, majority were from 41-50 years i.e 84(42%) followed by 51 (25.5%) from 31-40 years,26 (13%) from <30 years, 23(11.5%) from 51-60 years and least 16 (8%) from >60 years age group. Clinical symptoms revealed more of pain abdomen (62%), white discharge (42.5%), post coital bleeding (24.5%), post menopausal bleeding (21.5%).VIA was found to be more sensitive (85.7%) than PAP smear (57.1%) with p<0.05. Specificity of both VIA and PAP smear is almost comparable (84.9% and 96.2%, p>0.05)

KEYWORDS

HPV, VIA, PAP smear, HPE, ASCUS, CIN, Cervical cancer

INTRODUCTION:

Cervical cancer is the second most common cancer among women worldwide. Cervical cancer is preventable, but most women in poorer countries do not have access to effective screening programmes. As per GLOBOCAN 2020, 604100 new cases of cervical cancer are detected globally in 2020 and 341831 deaths were attributed to this malignancy. In India, cervical cancer accounted for 9.4% of all cancers and 18.3% (123907) of new cases in 2020. It's still amongst the commoner cancer in India and a leading cause of cancer related deaths in women in low- and middle-income countries. Although the age standardized incidence rate of cervical cancer decreased substantially by 39.7% (95% UI 26.5-57.3) from 1990-2016; It is the second leading cause of cancer deaths for females in 12 Indian states. Cervical cancer continues to be the most common cause of cancer death among women in India. It has been determined that screening women once in a lifetime at the age of 35 years with a one- or two-visit screening strategy involving VIA could reduce the lifetime risk of cervical cancer by approximately 25% to 36% and cost less than 500 US dollars per year of life saved.

MATERIALS AND METHODS:

Place Of Study:

A study was carried out at the Gynecology department of KPC Medical College & Hospital From 1st January, 2021 and continued upto 30th June 2022.

Study Design: Comparative prospective study

Sample size: 200

Study Populalation: Women attended gynaecological outpatient department in KPC Medical College

Inclusion Criteria:

Patients in the age group of 18 to 60 years are included in the study and priority will given to patients with the following factors-

1. Early marriage and early pregnancy.
2. Sexual activity at early age.
3. Multiparity and multiple sexual partners.
4. Women with STIs, leucorrhea, low socio-economic status, abnormal vaginal bleedings.
5. History of Post coital bleedings.

Exclusion Criteria:

1. Patients not giving consent.
2. Unmarried patients.
3. Patients with active bleeding p/v or active infection at the time of
4. examination.
5. Women with invasive cervical carcinoma.
6. Exfoliative or fungative growth.
7. Women aged below 18 years and above 60 years.
8. Pregnant women.

Statistical analysis and methods-

Data was collected by using a structure proforma. Data thus was entered in MS excel sheet and analysed by using SPSS 24.0 version IBM USA.

Qualitative data was expressed in terms of percentages and proportions

Quantitative data was expressed in terms of Mean and Standard deviation

Association between two qualitative variables was seen by using Chi square/ Fischer's exact test

Diagnostic validity of the study test was calculated using sensitivity, specificity, positive predictive value, negative predictive and accuracy Descriptive statistics of each variable was presented in terms of Mean, standard deviation, standard error of mean.

A p value of <0.05 was considered as statistically significant whereas a p value <0.001 was considered as highly significant.

RESULTS:

- We included total 200 women in our study, Out of which, majority were from 41-50 years i.e. 84(42%) followed by 51(25.5%) from 31-40 years, 26(13%) from <30 years, 23(11.5%) from 51-60 years and least i.e. 16(8%) from >60 years age group. 60% were from rural area and 40% from urban area. Majority of the women were grand multipara in our study i.e. 128(64%), 52(26%) were

multipara, 19(9.5%) were primi and 1(0.5%) was nullipara

Distribution according to age group:

		Frequency	Percent
Age group in years	<30	26	13.0
	31-40	51	25.5
	41-50	84	42.0
	51-60	23	11.5
	>60	16	8.0
	Total	200	100.0

- &Clinical symptoms revealed pain in abdomen in 124(62%), white discharge in 85(42.5%), cervical lesions in 80(40%), fibroid uterus in 67(33.5%), post coital bleeding in 49(24.5%) and post-menopausal bleeding in 43(21.5%).

Distribution according to Clinical symptoms:

		Frequency	Percent
Clinical symptoms	White discharge	85	42.5
	Fibroid uterus	67	33.5
	Post coital bleeding	49	24.5
	Cervical lesions	80	40.0
	Post-menopausal bleeding	43	21.5
	Pain in abdomen	124	62.0

- VIA results was positive in 40 cases i.e. 20% in our study. PAP smear results was positive in 15 cases i.e.7.5% in our study. HPE results was positive in 14 cases i.e. 7% in our study.
- Out of 200 cases, only 15 cases i.e. 7.5% were found positive for PAP and VIA test whereas 160(80%) were found negative for PAP and VIA test.
- Diagnostic validity of PAP smear is as follows: Sensitivity-57.1%, Specificity-96.2%, PPV-53.3%, NPV-96.75%, Accuracy-93.5%
- Diagnostic validity of VIA smear is as follows: Sensitivity- 85.7%, Specificity- 84.9%, PPV-30%, NPV-98.75%, Accuracy-85%.

Comparison between VIA and PAP smear results:

		VIA positive		VIA Negative		Total	p
		No	%	No	%		
PAP smear	Positive	15	7.5	0	0	15	0.0001
	Negative	25	12.5	160	80	185	
Total		40	20	160	80	200	

- Mean age of the study population was 43.59±11.24 years
- Mean age of first sexual contact 16.18±2.24 years
- Out of 161 Hindu patients, chronic cervicitis was seen in 150 cases. Out of 30 Muslim patients, chronic cervicitis was seen in 28 cases. Out of 5 Christian patients, chronic cervicitis was seen in 4 cases.
- VIA is more sensitive (85.7%) than PAP smear (57.1%) with p<0.05. Specificity of both VIA and PAP smear is almost comparable (84.9% and 96.2%, p>0.05).

Diagnostic accuracy of PAP Smear

		HPE positive		HPE Negative		Total	p
		No	%	No	%		
PAP smear	Positive	8	57.1	7	3.8	15	0.0001
	Negative	6	42.9	179	96.2	185	
^Total		14	100.0	186	100.0	200	

Diagnostic accuracy of VIA

		HPE positive		HPE Negative		Total	p
		No	%	No	%		
VIA	Positive	12	85.7	28	15.1	40	0.0001
	Negative	2	14.3	158	84.9	160	
Total		14	100.0	186	100.0	200	

CONCLUSION:

In our study the following inferences were concluded-

- Diagnostic validity of PAP smear is as follows: Sensitivity-57.1%, Specificity-96.2%, PPV-53.3%, NPV-96.75%, Accuracy-93.5%
- Diagnostic validity of VIA smear is as follows: Sensitivity- 85.7%, Specificity- 84.9%, PPV-30%, NPV-98.75%, Accuracy-85%.
- VIA is more sensitive (85.7%) than PAP smear (57.1%) with p<0.05. Specificity of both VIA and PAP smear is almost comparable (84.9% and 96.2%, p>0.05).

Thus VIA is low cost and minimum resource method in comparison to PAP smear and it has high sensitivity. It has also immediate availability to access the results and can be used as alternate screening test for premalignant and subclinical cancer cervix. It is cost effective, requires less skilled manpower and greater accessibility.

Conflict of interest-Nil

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