Pap Smear Versus Colposcopy For Diagnosis Of Precancerous Lesions Of Cervix

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ABSTRACT

Background: Cervical cancer presents as major cause of morbidity and mortality especially in developing countries like India. Various screening programs are implemented for its early detection and treatment, which makes it imperative to have a reliable screening investigation for wider application.

Objective : TO evaluate the role of Colposcopy and Pap smear and compare their efficacy for diagnosis of preinvasive cervical lesions.

Material and Methods : This hospital based   prospective study was conducted in SMS Medical College, Jaipur in 35 patients from 2013 to 2014. All patient subjected to Pap smear and Colposcopy. The sensitivity, specificity, and accuracy were calculated for Pap smear and Colposcopy.

Results : sensitivity of colposcopy was 88%% and specificity was 70%, while Sensitivity of conventional pap smear (Bethesda system)60%,Specificity 84%.colposcopy use as screening method   has higher chance of detecting precancerous lesions.

Conclusion : colposcopy is useful as better screening method in compare with conventional pap smear detecting premalignant and malignant lesions of the cervix.

Keywords : pap smear, Reid index(RI),

INTRODUCTION

It is a well-known fact that Carcinoma of Cervix is the major killer of female population more so in India. According to Indian council of Medical Research (ICMR) the incidence of cervical cancer in India varies from 20 to 35 per 100,000 women between the age group of 35 and 64 years while in developed countries it is as low as 1 to 8 per 100,000 women[1] In India 132,000 new cases are reported annually with 74,000 death occurring each year hence every 7th minute a women dies due to cervical cancer.It is predicted that figures are expected to double by 2020 if no action is taken.[2]

The cause of such a high incidence is the continued negligence of benign

lesion of cervix, which are common here due to early marriage, high parity, obstetrical trauma, lower socioeconomic condition, poor hygienic conditions. Despite of these glaring statistic, cervical cancer is a favorable site for effective control program as it is easily accessible, large number of cell exfoliated from precancerous lesion are available[3].There is usually long natural history of preinvasive phase, which is easily recognizable by screening techniques like cervicovaginal cytology and colposcopy. Furthermore treatment at this stage is very effective.[5]
The present study was undertaken to evaluate Colposcopy and to compare the sensitivity and speficity of this with Pap smear.

MATERIAL AND METHOD

The present prospective study was conducted in the Department of Obstetrics and Gynaecology SMS medical college, Jaipur from March 2013 to Dec 2015.

INCLUSION CRITERIA
- Persistent vaginal discharge

- Post coital bleeding

- Abnormal vaginal bleeding or irregular menstrual cycle.

- Pain in lower abdomen

- Any abnormal finding on per speculum examination.

- Women who has undergone supracervical hysterectomy

EXCLUSION CRITERIA
- Women above the age of 65 years who have been previously screened completely.
- Women who have already undergone total hysterectomy.

Detected clinically to be unhealthy after taking a written informed consent. The patient was placed comfortably on the examination table in the dorsal position. The external genitalia were examined with naked eye to exclude any vulval pathology or any discharge from the introitus. Bi-valved self-retaining speculum was introduced carefully. smear taken by ayers spatula and endocervical cytobrush slide was prepared and send for Pap's cytology reporting The cervix was then examined

in illuminated light through the colposcope with focal length adjusted.

Normal saline was used to remove the thick and excessive mucous, if present, and abnormal areas were noted. 3% acetic acid was then applied to the ectocervix with the help of cotton wool swab sticks. The squamous epithelium, columnar epithelium, their junction and the transformation zone were observed and the abnormal areas were noted. Acetic acid application is repeated, whenever necessary. For better visualization of angio-neuritic structure, the green filter was used. Cotton wool swab soaked in Lugols solution was applied to the cervix and vagina and negative areas were noted.

RESULTS

The present comparative study was conducted in the department of Obstetrics and Gynaecology, SMS Medical College& Attached Group of Hospitals, Jaipur on 35 subjects. Realizing the clinical importance of screening of cervical cancer in high risk women, the present study was based on main parameters
Colposcopy
Conventional Pap smear

Efficacy and clinical accuracy of colposcopy & Pap smear to diagnose premalignant and malignant lesion of cervix have been correlated & critically evaluated. All the cases were evaluated by subjecting them to a detailed clinical history, general physical examination & gynaecological examination in order to include the women in the study. The observation &results of this study are summarized below:

- Majority of the patient belonged to fifth and sixth decade of life(68%), cases of preneoplastic lesion were mostly found in the fifth decade and neoplastic in sixth decade of life.
- Maximum cases belong to rural area 22(62.86%) and lower socioeconomic class 20 (57.14%).
- Most common presenting complaint was persistent vaginal discharge or leucorrhoea 11(31.40%) followed by pain lower abdomen in 9(25.71%), postcoital bleeding

in 7(20%), irregular bleeding in 7(17.14%) cases and foul smelling discharge only in 2(6%) cases.

- Age of the 1st coitus was ≤18 years in majority of cases 22(62.86%).
- Maximum number of cases had early menarche ≤12 years 19(54.86%).
- Histopathological examination revealed 25 (71.43%)histopathology reports detected positive case and only 10(28.57%) detected as negative cases .It was also reveals that 14(40%) cases having CIN-I, 5(14.20%)CIN-II, 3(8.57%) CIN-III,2(5.71%) carcinoma in situ and 1(2.86%) having squamous cell carcinoma.
- Significant association between contraception and cervical cancer. amongst 85% patient was using OCP, 17.14% cases were using barrier method only 5.7% patient uses IUCD.
- Maximum number of cases belong to modify Reid index 0-2, i.e. 25(71.42%) on colposcope.[6]
- Colposcope has high specificity(76.6%) and sensitivity (86.36%)compare with Sensitivity of conventional pap smear(60%)(and, specificity was 84%).[7, 4]

DISCUSSION Cervical cancer is second most common cancer in women in India . Invasive cervical cancer is preceded by preinvasive disease in most women. There is a lag time of 10-20 years before the disease progresses from pre invasive to invasive stage. Prevention of invasive cancer is by screening, diagnosis and treatment of preinvasive diseases. Thus early diagnosis of CIN in adult women is a desirable goal.

From the results of this study, it is evident that colposcopy is definitely more sensitive and accurate than pap smear.

Table No 1 show distribution according to age of study subject ,out of 35 cases maximum i,e.24 (68.58%) were lying in the age group >_50% year and reaming 11 (31.42%).

Fifty percent of cervical cancer diagnoses occur in women ages 35 - 54, and about 20% occur in women over 65 years of age. The median age of diagnosis is 48 years. About 15% of women develop cervical cancer between the ages of 20 -

30. Cervical cancer is extremely rare in women younger than age 20.

In 2013Ashmita et al. (Shakuntala.P.N, Shubha.R.Rao1,S.K.Sharma1, Geethanjali.S. Department of Obstetrics and Gynaecology) results was 80.8% of women were in the age group of 30-50 years.

Oguntayo O et al found mean age was 38 years. more then 75% cases were >44 years with peak in age between 40-44 years.

Our study distribution according to SES(Kuppuswamy's socio-economic status scale) & Histopathology report of study subjects .

Majority of study population 20(57.14%) cases belong to lower class 15(42.86%) belong to middle class.

High poverty levels are linked with low screening rates. In addition, lack of health insurance, limited transportation, and language difficulties hinder a poor woman's access to screening services.

Christop son and parker,(1960) who noted a high incidence of disease women of low socio-economic class with younger age of marriage

Our study shows distribution according to sexual partner of 1st conception and histopathology findings of study subjects. Out of 35 cases, 23(65.71%) positive cases were multiple sexual partner and 2(5.71%) were singe partner. The above table detected that out of 23(92%) positive cases were multiple partner, only 2(8%) women were single partner.

Women most at risk for cervical cancer are those with a history of multiple sexual partners, sexual intercourse at age 17 years or younger, or both. A woman who has never been sexually active has a very low risk for developing cervical cancer.

Human papilloma virus (HPV) is the main risk factor for cervical cancer. In adults, the most important risk factor for HPV is sexual activity with an infected person Sexual activity with multiple partners increases the likelihood of many other sexually transmitted infections (Chlamydia, gonorrhea, syphilis).Studies have found an association between Chlamydia and cervical cancer risk, including the possibility that Chlamydia may prolong HPV infection.

2013Ashmita et al.(Shakuntala.P.N1*, Shubha.R.Rao1, S.K.Sharma1, Geethanjali.S Department of Obstetrics and Gynaecology) significant risk factors associated with premalignant lesions of cervix were younger age

at initiation of intercourse (coitarchae) and high parity**.**

This study shows that type of Contraceptive and association with carcinoma cervix. 31.42% cases were not user any contraceptive practice 22.85%OCP that was irregular,17.14% cases were using barrier method only 5.7% patient uses IUCD.

Long-term use of oral contraceptives (5 or more years) is associated with an increased risk of cervical cancer.The hormones in oral contraceptives may change the susceptibility of cervical cells to HPV infection, affect their ability to clear the infection, or make it easier for HPV infection to cause changes that progress to cervical cancer.

"One of the mechanisms by which IUDs might exert this protective effect is through the induction of a reactive, chronic, low-grade, sterile inflammatory response in the endometrium, endocervical canal, and cervix that could modify, via changes in the local mucosal immune status, the course of HPV infections,"

Ashmita et al. (Shakuntala.P.N1* , Shubha.R.Rao1)**In 2013** There was no history of use of oral contraceptives (OC), intrauterine contraceptive device (IUCD) in 53.9% of women. Only 32.7% had used IUCD. 1.9% of women were treated for sexually transmitted disease in the past.

Our shows Majority of patient in study subject had more than one complaints.

Most common presenting complains was persistent vaginal discharge or leucorrhoea in 11(31.40%) followed by pain lower abdomen in 9(25.71%), postcoital bleeding in 7(20%), irregular bleeding in 7(17.14%) cases, foul smelling discharge only in 2(6%) case.

Kenneth and Yao have emphasized the significance of vaginal discharge and its association with neoplastic changes in the cervix Quite similarly to this study **Sherwani RK et al.(2006)** in this study most commen presenting complained was discharge per vagina (43%) followed by pain in lower abdomen (28%) ,menstrual irregularity in(24%)

Similarly in study Pathare **SS (2001)** maximum number of patients were presented with complain of leucorrhoea.

In 2007 Sherwani R K et al. Commonest presenting complaint was discharge per vaginum seen in 68 (42.5%) cases.

Its shows that 22(62.86%) cases positive both colpscopy and Histopathology reports, but 3 (8.57%)cases which had negative colposcopy were positive in histopathology .

So that colposcopy more sensitive then HP finding as a screening of cervical cancer.

$x2=4.791$ with 1 degree of freedom , p value <0.01 is statically significant

colposcopy is strongly advocated in the best interest of public health. Thus it will significantly improve early detection and treatment of cervical lesions.

CONCLUSION Cervical cancer is the second most common cancer in women in India . There is a lag time of 10-20 years before the disease progresses from pre invasive stage to invasive disease. Thus early diagnosis of preinvasive diseases in adult women is a desirable goal.

From the results of the present study, of the various methods of screening, colposcopy was definitely found to be more sensitive.It showed a colposcopy better performance as a screening test, to its higher specificity and the possibility to perform guided biopsy along with other miner procedure like LEEP, cryotherapy.

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Table No. 1
Distribution according to age of study subjects

Age group (In Yrs)	No.	Percentage
30-39	2	5.71
40-49	9	25.71
50-59	12	34.29
60+	12	34.29
Total	35	100.00
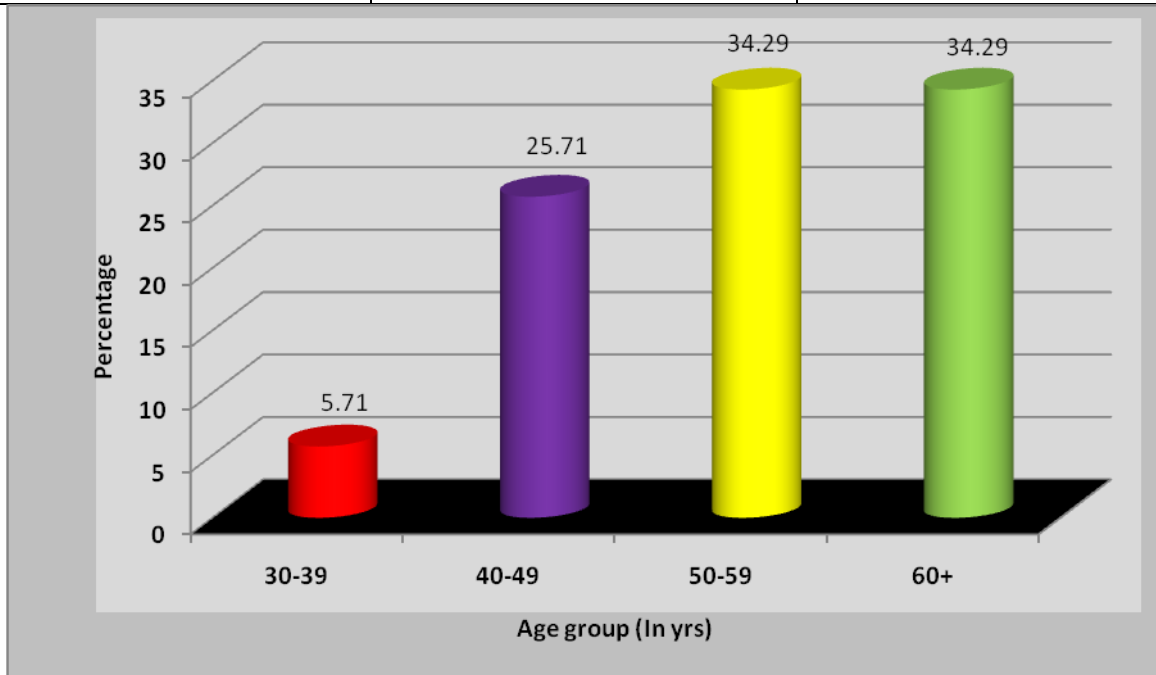
Table No. 2 Histopathological finding in study subject

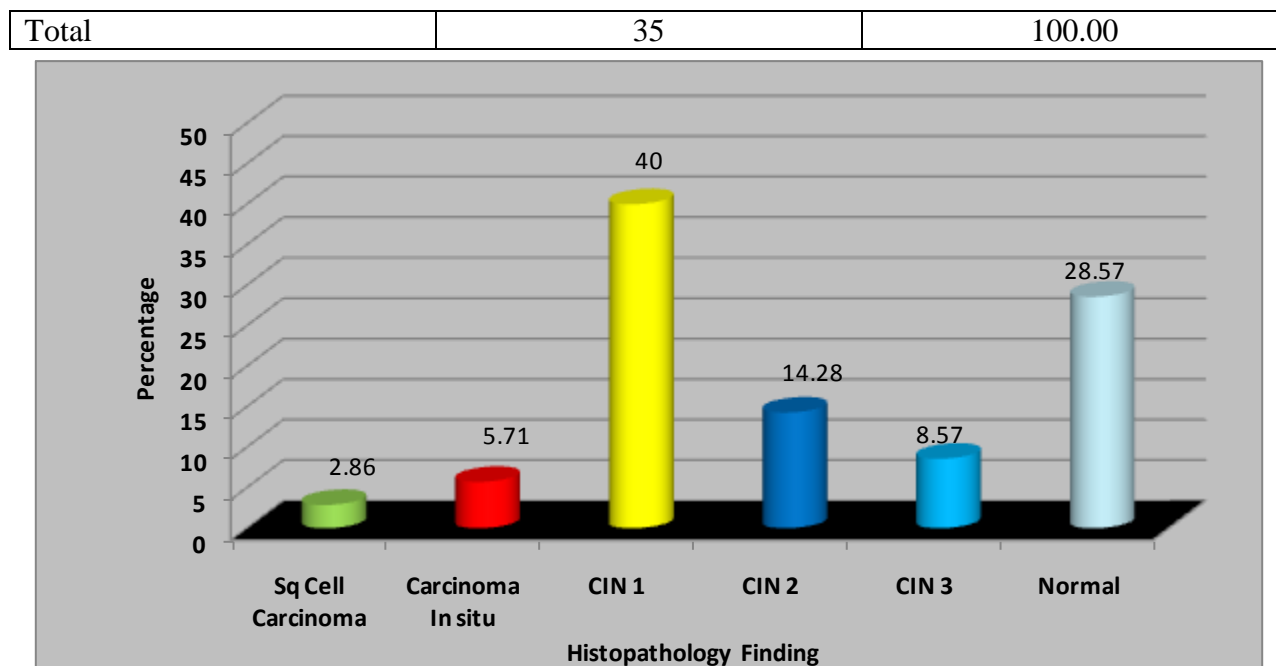| Histopathology Findings	No	%
Squamous cell carcinoma	1	2.86
Carcinoma in situ	2	5.71
CIN1	14	40.00
CIN2	5	14.28
CIN3	3	8.57
Normal	10	28.57

Total	35	100.00

Table No. 3

Type of contraception and their association with carcinoma cervix

Type of Contraceptive	No of patient	Percentage
No any method	11	31.42%
OCP	8	22.85%
Barrier method	6	17.14%
Tubal ligation	5	14.28%
IUCD	2	5.70%
Natural method	4	8.57%

Table No. 4

Distribution according to colposcopy grading with Reid Index 0-2, 3-5 ,6-8, >8 and no of patient and percentage

Colposcopy grading(modified Reid Index , 0-8))	No of patient	Percentage
0-2	25	71.42%
3-5	6	17.14%
6-8	4	11.42%
Total	35	100%
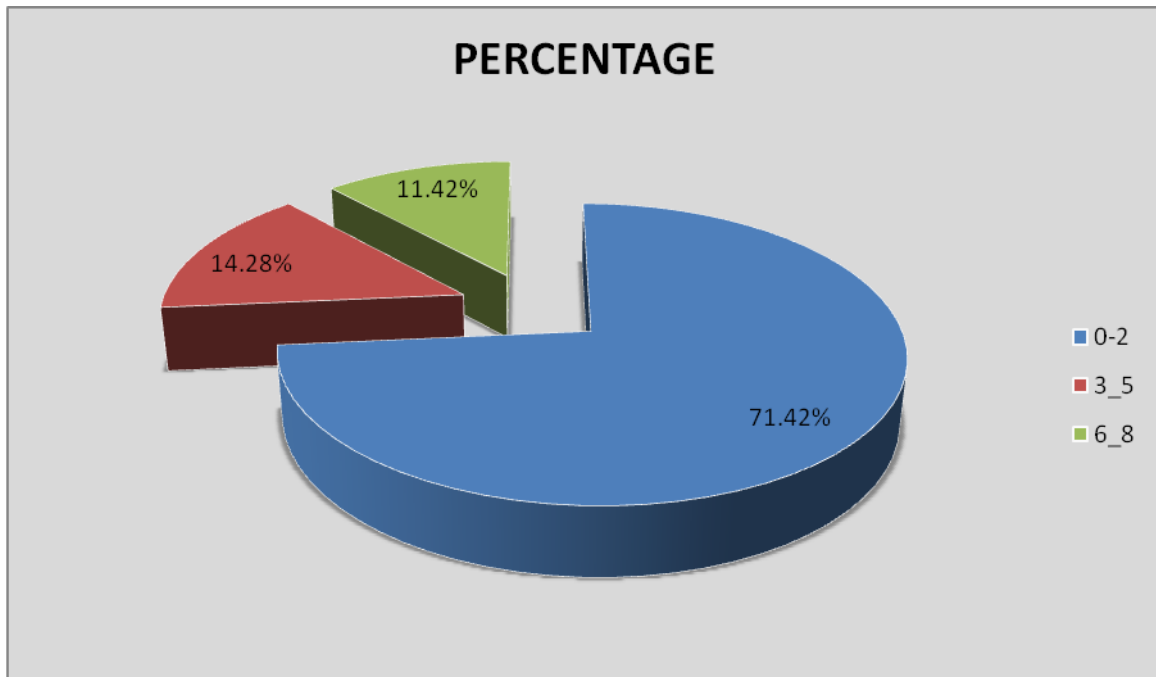
Table No 5
Colposcopy Findings

Microscopic Observation	Number of cases	Percentage
White Epithelium	20	57.14%
Punctation	7	20%
Mosaic	4	11.42%
Atypical vessels	3	8.5%
Leukoplakia	1	2.8%
Total	35	100%

Table No 6

Sensitivity, specifity of Colposcopy report and pap smear

SI No	Sencitivity	Specificity
Colposcopy	88%	70%
Pap smear	60%	84%