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COLPOSCOPIC FINDINGS IN WOMEN WITH ABNORMAL PAP SMEAR IN SILCHAR MEDICAL COLLEGE AND HOSPITAL

Gynaecology

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ABSTRACT

Introduction: Carcinoma cervix is most common genital malignancy in female. It is one of the leading causes of cancer mortality in India. Carcinoma cervix is more common in developing countries than developed countries because of inadequate screening facilities. As it has long standing pre-invasive stage, it can be diagnosed early by screening tests. **Aims and Objectives:** The purpose of the study is to detect carcinoma cervix in its pre-invasive stage and to study role of Colposcopy in women with abnormal Pap smear. **Materials and methods:** It is a hospital based prospective study carried out in Silchar Medical College and Hospital, Silchar, Cachar, Assam from 5th June 2018- 4th June 2019. **Results:** Out of 100 selected patients with abnormal Pap smear, Colposcopy was performed. Correlation between Pap smear and Colposcopic findings showed that Colposcopy has higher sensitivity than Pap smear but specificity of Pap smear more than Colposcopy. Accuracy of Colposcopy is higher than that of Pap smear.**Conclusion:** By combining Colposcopy with Pap smear, sensitivity and specificity of cervical cancer screening can be maximised. Abnormal cytology smears should further be evaluated by Colposcopy followed by Colposcopy directed biopsy for proper diagnosis.

KEYWORDS

Carcinoma Cervix, PAP smear, Colposcopy

Introduction:
Carcinoma cervix is most common genital malignancy in female. It is one of the leading causes of cancer mortality in India, accounting for 17% of all cancer deaths among women aged between 30 and 69 years.[1]

Invasive cancers of cervix is considered a preventable disease because it has long pre-invasive state, cervical cytology screening programmes are currently available and the treatment of pre-invasive lesions are effective. In asymptomatic women cervical cancer is mostly identified through evaluation of abnormal cytologic screening tests. Worldwide incidence of invasive diseases is decreasing because cervical cancer is diagnosed earlier, leading to better survival rates. The false negative rate for PAP tests in presence of invasive cancer is upto 50% so a negative PAP test should never relied on a symptomatic patient.[2]

Colposcopy plays a central role in management of patients with abnormal screening tests. To improve the examination findings various Colposcopic indexes like Reid index, Swede score has been introduced to interpret findings followed with Colposcopic directed biopsy as gold standard[3]

OBJECTIVES OF THE STUDY
1. To detect carcinoma of Cervix in its pre invasive stage
2. To study role of Colposcopy in women with abnormal Pap smear
3. To localize the lesions and to obtain biopsies from the selected areas.

MATERIALS AND METHODOLOGY
1. Source of Data: Patients attending Gynaecology OPD in Silchar Medical College and Hospital.
2. Methods of Data Collection:
A. Study Design: A hospital based prospective study.
B. Study Period: One year (5 June 2018 – 4 June 2019
C. Sample size: 100 cases who fulfilled selection criteria randomly selected.

The criteria to select women for study were the presence of either one or more of the factors given below-

Inclusion Criteria:
1. Recurrent episodes of white discharge per vaginum.
2. Intermenstrual bleeding, postmenopausal bleeding, postcoital bleeding.
3. Patients with abnormal Pap smear.
4. Patient with clinically unhealthy cervix like cervical erosion, cervical polyp.
5. Age from 20-59 yrs

Exclusion Criteria:
1. Women with frank cervical lesions.
2. Women with bleeding disorders.
3. Pregnant lesions.
4. Unmarried.
5. Women who underwent total hysterectomy.

Pap smear samples of the female patients fulfilling the inclusion criteria were collected. All these female patients with abnormal Pap smear were also subjected to colposcopy and colposcopy guided cervical biopsy.

Table 1 Distribution of Cases according to age

Age group (years)	No of Cases
20-30	15
31-40	43
41-50	30
50-59	12

Table 2 Distribution of cases according to parity

Parity	Distribution of Cases
Nullipara	4
one	6
two	36
three	35
four or more	19

Table 3 Distribution of Cases according to symptoms

Symptoms	No of cases
Recurrent white discharge	75
Post coital bleeding	8
Intermenstrual bleeding	8
Postmenopausal bleeding	9

Table 4 Pap smear Results

Findings	No of Cases
Inflammatory	80
LSIL	15
HSIL	5
Malignancy	0

Table 5 VIA results

Total	No of cases(n=100)
Positive	40
Negative	60

Table 6 Colposcopy Results

Appearance	No of cases
Normal	8
Inflammation/Erosion cervix/metaplasia	50
Acetowhite areas	19
Fine punctuations or mosaicism	9
Coarse punctuations or mosaicism	6
Atypical vessels	0
Unsatisfactory	8

Table 7 Biopsy Results

Outcome	No of cases
Normal	3
Chronic Cervicitis	78
Mild Dysplasia	10
Moderate to Severe Dysplasia	7
Squamoua cell carcinoma (malignancy)	2

Table 8 Comparison of Pap smear with Biopsy

Pap smear	Biopsy					Total
	Normal	Cervicitis	Mild dysplasia	Moderate to severe dysplasia	Malignancy	
Inflammatory	3	72	3	2	0	80
LSIL	0	6	6	3	0	15
HSIL	0	0	1	2	2	5
Total	3	78	10	7	2	100

Table 9: Diagnostic efficacy of Pap smear

Pap smear	Biopsy		Total
	Positive	Negative	
Positive	6	14	20
Negative	13	67	80
Total	19	81	100

Sensitivity = (TP/TP+FN)×100 = (6/6+13)×100 = 6/19 ×100 = 31.58%
Specificity = (TN/TN+FP)×100 = (67/67+14)×100 = 67/81×100 = 82.71%
Positive Predictive Value = (TP/TP+FP)×100 = (6/6+14)×100 = 6/20×100 = 30%
Negative Predictive Value = (TN/TN+FN)×100 = (67/67+13)×100= 67/80×100 = 83.75%
Accuracy =(TP+TN)/(TP+TN+ FP+FN)×100=(6+67)/(6+67+14+13)×100 = 73/100 = 73%

Table 10: Comparison between Colposcopy and Biopsy

	Biopsy					Total
	Normal	Cervicitis	Mild dysplasia	Moderate to severe dysplasia	Malignancy	
Normal	1	7	0	0	0	8
Inflammation/Sq.metaplasia/Erosion	2	46	2	0	0	50
Acetowhite areas	0	14	4	1	0	19
Fine punctuations or mosaicism	0	4	3	2	0	9
Coarse punctuations or mosaicism	0	0	1	3	2	6
Atypical vessels	0	0	0	0	0	0
Unsatisfactory	0	7	0	0	1	8
Total	3	78	10	6	3	100

Table 11: Diagnostic efficacy of Colposcopy

Colposcopy	Biopsy		Total
	Positive	Negative	
Positive	16	18	34
Negative	3	63	66
Total	19	81	100

Sensitivity = TP/(TP+FN)×100 = 16/(16+3)×100 =16/19×100 = 84.21%
Specificity = TN/(TN+FP)×100 = 63/(63+18)×100 = 63/81×100= 77.78%
Positive Predictive Value = TP/(TP +FP)×100 = 16/(16+18)×100 =16/34×100 = 47.06%
Negative Predictive Value = TN/(TN+FN)×100 = 63/(63+3)×100 = 63/66×100 = 95.45%

Accuracy = (TP+ TN)/(TP+TN +FP+ FN)×100 = (16+63)/(16+63+18+3)×100 = 79/100 ×100 =79%

Table 12 Diagnostic Efficacy of Tests

Diagnostic Efficacy	Pap Smear	Colposcopy
Sensitivity	31.58%	84.21%
Specificity	82.71%	77.78%
Positive Predictive Value	30%	47.06%
Negative Predictive Value	83.75%	95.45%
Accuracy	73%	79%

Discussion

In the present study patients with symptoms like recurrent whitish discharge per vagina, post menopausal bleeding, post coital bleeding, intermenstrual bleeding who had abnormal PAP smear are undergone colposcopy followed by colposcopy guided biopsy.

Maximum number of cases of were found in the age group of 31- 40 years (43%) and the mean age was 38.48 years. It proves the already well established fact that, unhealthy cervix and abnormal cytology is more common in women of reproductive age group who are sexually active. Singhal et al in their study observed that the mean age of patients was 38.6 ± 6.2 years.[4] In the study by Manjit Singh Bal et al for detection of abnormal cervical cytology in Papanicolaou smears mean age of patients with LSIL was 32.3 years, and those with HSIL and invasive carcinoma were 40.5 years and 57 years.[5]

Majority of cases with abnormal cervical lesion were found in the parity 2 (36%) and parity 3 (35%) which constituted 71 of total 100 cases. The population screened in this study varied in age and parity, with no preference for any specific group. In their study by Bhattacharya et al found that the incidence of CIN was more in cases with parity more than 2 .[6] The high prevalence of multiparity and cervical neoplasia may be due to hormonal and nutritional changes that occur in pregnancy, immuno suppression during pregnancy, and cervical trauma during vaginal delivery (Adadevoh et al).[7] Kaveri S. B et al in her study the overall incidence of CIN reported by pap smear was 22.5%.[8]

The most common symptom in this study group is recurrent white discharge (75%). Other symptoms are postmenopausal bleeding (9%), intermenstrual bleeding(8%), postcoital bleeding(8%).Rama devi et al, showed 46% whitish discharge, 8% cases had post coital bleeding, Intermenstrual bleeding was seen in 10% of cases and remaining are other cases.[9]

VIA positivity found in our study around 40%. Bhatla N et al also found VIA positivity in 41% cases.[10]

In our study the inflammatory findings seen in 80%, LSIL in 15%, HSIL in 5% and none had malignancy. 4 cases of LSIL and 1 case of HSIL under reported as inflammatory and 6 cases of cervicitis over reported as LSIL. M. Gopal et al in their study found that all the patients who had undergone PAP smear 80% has inflammatory smear, mild dysplasia in 10%, moderate dysplasia in 3%, moderate dysplasia in 2%.[11]

In our present study sensitivity and specificity of Pap smear are 31.58% and 82.71% respectively. Sensitivity of Pap smear is low which attributed to increased number of false negative smears. The main reason for false negativity of cytology was due to sampling errors, samples being inadequate and suboptimal for interpretation.

The sensitivity and specificity of colposcopy in present study is 84.21% and 77.78% respectively. Positive predictive value and negative predictive values are 47.06% and 95.45% respectively.

Accuracy of colposcopy is found to be 79% whereas that of Pap smear is 73% . It shows accuracy of colposcopy is higher than Pap smear. Study by Rama Devi et al found accuracy of colposcopy was 82% which was comparatively more accurate than Pap smear (78%).[9]

In present study biopsy showed cervicitis in 78% cases, mild dysplasia in 10% cases, moderate to severe dysplasia in 7% and malignancy in 2% cases. In study by Gandi SR et al found that in biopsy 87% had chronic cervicitis, 4% had CIN I & II, and 9% had squamous cell carcinoma.[12]

It was found that colposcopy has higher sensitivity than PAP smear but specificity is lower than the PAP smear. Colposcopy and cytology both used together in patients of cervical lesions has higher chance of detecting cervical intraepithelial lesions as compared to either of procedure performed alone.

Cytology and colposcopy are not competitive to each other but complement methods for early diagnosis of cancer. Colposcopy is helpful for reducing high false negative rate detected in cytology. Abnormal cytology and inflammatory smears should be further evaluated by colposcopy followed by colposcopy directed biopsy for proper diagnosis.

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