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Original Research Article

Colposcopic evaluation in cases of persistent inflammatory Pap smear

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ABSTRACT

Background: The aim of the study was to assess the colposcopic evaluation in cases of persistent inflammatory Papanicolaou (Pap) smear.

Methods: This was a prospective analytical study, conducted amongst 78 women attending the outpatient department of obstetrics and gynaecology at Subharti Medical College. Pap smear was performed by the conventional method and colposcopy was done for all 78 sexually active women who came with complaints of pain abdomen, irregular cycles, white discharge per vaginum and urinary tract infections. Final correlation of Pap smear and colposcopy were based on histopathology and human papillomavirus deoxyribonucleic acid (HPV DNA).

Results: In this study of 78 women, 21% of women had normal colposcopic findings whereas 79% had abnormal colposcopic findings. Histopathological examination (HPE) findings revealed that 69% women had cervical intraepithelial neoplasia (CIN) I, 23% had CIN II, 6% had CIN III and 3% had SCC. 25% women tested positive for HPV DNA and 75% women tested negative for HPV DNA.

Conclusions: Patients with persistent inflammatory Pap smear despite undergoing treatment show changes on Colposcopic directed biopsies.

Keywords: PAP smear, Colposcopy, Premalignant lesion, Cervix

INTRODUCTION

Cervical cancer was the second most common cancer among women 15-44 years of age and in 2018 it was the fourth most frequent cancer and cause of cancer death among all women in the world.¹ More than half a million women were diagnosed and over a quarter of a million women died of cervical cancer in 2018, with over 85% of these women living in low resource countries, with low and medium human development indexes.^{2,3} These countries were predominately located in sub-Saharan Africa, Central and South America, and Asia.⁴

The human papillomavirus (HPV) has emerged over the past decade as the leading candidate to be the sexually transmitted etiological factor in cervical cancer. Cervical

cancer is most commonly associated with group of cervical lesions, mostly chronic, which include chronic cervicitis, endocervicitis, cervical erosions lacerations, polyps and leukoplakia. Early cervical epithelial changes can be identified by a Papanicolaou (Pap) smear test, which is the primary screening test for the detection of precancerous cervical intraepithelial neoplasia and the early stage of invasive cervical cancer. These changes can also be confirmed by cytology and colposcopy methods as precancerous lesions.⁵

It is important to assess whether persistent inflammatory changes on Pap smear could be the first indication of premalignant changes in the cervix and whether further evaluation by colposcopy would help to triage these women. The main goal of colposcopy is to prevent cervical

cancer by detecting and treating pre-cancerous lesions. In this study women were screened with a pap smear, inflammatory Pap smear were treated and a repeat pap smear was taken.⁶

Women with persistent inflammatory smear on Pap were subjected to colposcopy and colposcopic directed biopsy and sent for histopathology. Hence this study was conducted to colposcopically evaluate persistent inflammatory Pap smear and determine the incidence of cervical intraepithelial neoplasia (CIN).

METHODS

This was a prospective analytical study was conducted amongst woman attending the outpatient department (OPD) of obstetrics and gynaecology (OBG) at Subharti Medical College, Meerut, over a period of two years.

Sample size

The size of the sample was 78.

Inclusion criteria

All sexually active females in reproductive age group (21 to 60 years) attending the OBG OPD of Chatrapati Shivaji Subharti Hospital, Meerut, over a period November 2019 to August 2021 were included.

Exclusion criteria

Women with previous surgeries on cervix, hysterectomised women, women with growth on cervix, women already being treated for cervical cancer, and women with Pap reports other than persistent inflammatory reports and pregnancy were excluded.

A detailed history about various general and clinical aspects was taken, detailed menstrual history and obstetric history including married life, parity number of abortions, age of coitarche, number of partners, and history of any sexually transmitted disease (STD) was elicited from the patients. All women who fulfil the above criteria was enquired in detail about personal history. A general physical examination was done and then these women were subjected to conventional Pap test, and colposcopic directed biopsy with HPV DNA testing was done in women with persistent inflammatory Pap smear and biopsy was sent for histopathological examination (HPE). Individual data was recorded on a pre-structured proforma for future analysis.

Statistical analysis

The means and standard deviations of the measurements per group were used for statistical analysis, statistical package for the social sciences (SPSS 22.00 for windows; SPSS inc., Chicago, USA). Difference between two

groups was determined using chi square test and the level of significance was set at $p < 0.05$.

RESULTS

In present study, maximum cases were from the age group of 40-49 years (45%) followed by 30-39 years 37%. Only 6% belong to age group of <29 years. 5% of the women were illiterate. Most of the women had studied up to secondary level 42% and 17% of the women had studied up to graduate/postgraduate level and 34% have studied up to primary level. As per modified Kuppusswamy classification, majority of women belong to lower middle class (32%), 28% belong to lower upper class. 16% belong to upper middle class and least were 11% who belong to upper class. Majority of women were multiparous (91%) and 6% were primiparous and 3% were nulliparous. Majority of the women were married between 20-35 years (92%) while 6% women were married at <19 years and 2% women were married after 35 years respectively. Women with multiple sexual partners were 4% (Table 1).

Table 1: General characteristics.

Parameters	Range
Mean age (years)	46.32±13.62
Multipara (%)	71 (91.00)
Age at marriage (years)	21.32±2.02

In our study majority of women were presented with pain abdomen (25%). Second commonest complain was of white discharge per vaginam 21%. There were 16% women who were presented with menorrhagia and 12% with irregular cycles. 13% women presented with urinary tract infection (UTI) and 14% were asymptomatic (Table 2).

Table 2: Distribution of women according to clinical presentation.

Complaints	N	%
Asymptomatic	11	14
Pain abdomen	19	24
Menorrhagia	13	16
Irregular cycles	9	12
White discharge per vaginam	16	21
Urinary tract infection	10	13

In our study for the purpose of statistical analysis, we consider Swede score of 0-4 as normal colposcopic finding and 5-6 and 7-10 as abnormal colposcopic finding.

Out of 78 women, 21% had normal colposcopic findings and 79% had abnormal colposcopic finding.

Among abnormal colposcopic finding 55% belong to swede score of 5-6 and 25% belong to swede score of 7-10 (Table 3).

Table 3: Distribution of women according to their colposcopy findings (Swede score).

Score	N	%
0-4	16	21
5-6	43	55
7-10	19	24

In our study, HPE findings revealed that 69% women had CIN I, 23% had CIN II, 6% had CIN III and 3% had SCC (Table 4).

Table 4: Histopathology findings.

HPE findings	N	%
CIN I	54	69
CIN II	18	23
CIN III	4	5
SCC	2	3

In our study, out of 78 women, 16 women had normal colposcopic findings.

Among normal colposcopic findings 16 women were found to have CIN I on HPE (Table 5).

Table 5: Correlation between normal colposcopy findings with HPE.

HPE findings	N	Normal findings (N=16)
CIN I	69	16
CIN II	18	0
CIN III	4	0
SCC	2	0

In our study, out of 78 women, 62 women had abnormal colposcopic findings.

Among abnormal colposcopic findings 38 women were found to have CIN I on HPE. 18 women had CIN II on HPE. 4 women had CIN III on HPE and 2 women had SCC on HPE (Table 6).

Table 6: Correlation between abnormal colposcopy findings with HPE.

HPE findings	N	Abnormal findings (N=62)
CIN I	69	38
CIN II	18	18
CIN III	4	4
SCC	2	2

DISCUSSION

Cervical cancer remains an important cause of mortality among young women in developing countries including India, but due to easy accessibility of cervix, the ease of detecting abnormal tissues before it progresses to invasive

cervical cancer using relatively inexpensive technologies cancer of cervix is preventable, unlike other type of cancers.⁴

In our study, HPE findings revealed that 69% women had CIN I, 23% had CIN II, 6% had CIN III, and 3% had SCC.

Garg and Deasi found that 11 women (55% of all biopsies) had chronic non-specific cervicitis, 5 women (25%) had mild dysplasia, 2 women (10%) had moderate dysplasia, 2 women (10%) had non-keratinizing squamous cell carcinoma.⁵ Manjula study shows that histological diagnosis was chronic nonspecific cervicitis among 33 (66%) cases and CIN-19 (18%) cases.⁶ Joshi et al reported that maximum number of cases on HPE were those of infection among them majority had chronic cervicitis (48%).⁷ Cervical Intraepithelial lesions were seen in 43 cases. CIN I was seen in 28 cases and CIN II and CIN III were reported 15%, and SCC and adenocarcinoma were reported 2% cases, respectively.

In our study among abnormal colposcopic finding 55% belong to swede score of 5-6 and 25% belong to swede score of 7-10.

Garg and Deasi study shows that 21% of all symptomatic women had normal colposcopic findings while 38.5% had abnormal colposcopy, 28.5% had miscellaneous findings and 12% had indecisive colposcopic findings.⁵ Manjula study shows that colposcopic diagnosis was inflammatory in 27 (54%) cases followed by cervical intraepithelial neoplasia (CIN) 1 in 12 (24%) patients.⁶

CONCLUSION

Patients with persistent inflammatory Pap smear despite undergoing treatment show changes on colposcopic directed biopsies.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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