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Original Research Article

Correlation between colposcopic impression using Reid's colposcopic Index and histopathological grading of premalignant lesions of cervix

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ABSTRACT

Background: Cancer cervix is in the top rank of gynecological cancers in the developing countries cervical cancer has a long latent period and can be prevented by simple treatment of cervical intraepithelial neoplasm. The incidence of invasive cancer can be decreased by early detection of preinvasive stage which can be treated at the same sitting, “see & treat approach” strategy. Objectives were to estimate the strength of correlation in detecting preinvasive lesions of cervix between colposcopy and directed biopsy and to correlate various socio-demographic data with cervical pre-invasive and invasive lesion. To compare the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of colposcopy with colposcopic directed biopsy.

Methods: On selecting the patients based on the criteria, per speculum examination was done and in the presence of abnormal cervix, advised for PAP smear. Based on PAP smear scaled according to Bethesda staging, patients were accordingly advised for colposcopy. Reid's colposcopic index applied and biopsy was taken over the site with highest score and sent for HPE in a labelled bottle with fixative.

Results: Colposcopy when compared to histopathology had a sensitivity of 100 %, specificity of 48.3%, with PPV of 22.4 % and NPV of 100 %. The p value was 0.001 suggesting a significant strength of agreement between colposcopic diagnosis using Reid's index and histopathological diagnosis.

Conclusions: Correlation of colposcopic impression with directed biopsy is described as the reference investigation or 'gold standard' for the diagnosis of cervical precancerous lesions.

Keywords: Colposcopy, Histopathology, Reid colposcopic index

INTRODUCTION

“Cancer of the uterine cervix is now regarded as a preventable disease”- by WHO cancer committee was a milestone in the history of cervical cancer.

Cancer cervix is in the top rank of gynecological cancers in the developing countries. In India, it is the most common (80%) cancer of all the genital tract malignancies and is one of the leading causes of cancer deaths amongst women. It occurs in approximately 1 in 53 Indian women during their lifetime compared with 1 in 100 women in more developed regions of the world.

In India, in 2002, 134,000 new cases were reported and about 72,600 women died of the disease.¹ Even after a decade, in 2012, no significant decline in the incidence (123,000) as well as mortality (67,000) has been observed. Despite the fact that maximum number of cervical cancer cases are in developing countries, only 5% of women have ever been screened as compared with 40-50% of women in developed countries.² The major factor contributing to decline of incidence of cervical cancer in developed countries is early detection and treatment of precancerous cervical lesions as a part of routine gynecological care.

Cervical cancer has a long latent period and can be prevented by simple treatment of cervical intraepithelial

neoplasm, often on outpatient basis. It is important that screening programmes identify women at risk while the disease is in preinvasive stage. Human papilloma viral (HPV) DNA has been found in almost all cases of invasive cervical cancer, making it a chronic disease with an infectious etiology. Around 3-10% of women with HPV develop persistent infections, and are at high risk of developing cervical cancer. The fact that precancerous changes in cervical epithelium persists for years, initiates programs focusing on “secondary prevention”, that is, detection and treatment of precancerous lesions, focusing on preventing cervical cancer cases.

Various methods are available for screening of cervix for detection of epithelial abnormality, they vary in their detection and prevention scope. Today colposcopy is commonly used to detect cervical preinvasive disease, with the goal of preventing the development of invasive cervical cancer.³ This technique can be performed quickly and easily in the outpatient department. It is more than a simple intermediate link between cytologic screening and histologic diagnosis.⁴ Further advancement in colposcopic interpretation was proposed by Reid and Scalzi, by introducing the Reid’s colposcopic index (RCI).

Correlation of colposcopic impression with directed biopsy is described as the reference investigation or ‘gold standard’ for the diagnosis of cervical precancerous lesions.⁵ Such a strategy is expected to decrease the incidence of invasive cancer by early detection of preinvasive stage which can be treated at the same sitting, “see and treat approach”.

METHODS

Study design and site

It was a prospective observational study that took place at the department of obstetrics and gynecology, Bhabha Atomic Research Centre (BARC) Hospital, Mumbai, from October 2017 to October 2019.

Method of selection

100 patients were selected in age group 21-65 year with varied parity and socioeconomic status with following exclusion/inclusion criteria.

Exclusion criteria

Pregnant women, women within 6 weeks after delivery, those with acute infections or genital malignancies, patient on intravaginal medication, menstruating women/women bleeding during examination, post hysterectomy and post radiation treatment.

Inclusion criteria

Sexually active women with complaints of vaginal discharge, pain abdomen, postcoital or inter menstrual and

postmenopausal bleeding, women with unhealthy looking cervixes, women with non-conclusive/abnormal cytology report were included in the study.

Materials required

Equipments

Colposcope, examination table, three small bowls for saline and reagent, Cusco’s speculum, Sim’s speculum of 3 sizes, anterior vaginal wall retractor, sponge holding forceps, cotton swab sticks, Ayer’s spatula, cyto brush, clean glass slides and vials, sterile glove, cervical punch biopsy forceps, endocervical curette, roller gauze

Reagents, solutions and jars

Normal saline, acetic acid 3-5%, Lugol’s iodine 50%, fixative for Pap smear, fixative for biopsies, betadine solution, Coplin’s jar for Pap smear with reagent preservative.

Methodology

On selecting patients based on criteria, procedure will be described done and consent taken. Patient was subjected for per speculum examination and in the presence of abnormal findings, advised for Pap smear. Based on Pap smear results according to Bethesda staging, were advised for colposcopy. Patient was counselled regarding the procedure. Firstly, visual inspection of vulva and perineal area was done under bright light. The widest possible Cusco’s speculum was inserted in vagina to obtain a good view of cervix. Then the patient was subjected to colposcope, initially in low power and then under higher magnifications. When squamo-columnar junction was completely visible, colposcopy was termed satisfactory. Cervix was studied quadrantally for various vascular patterns without and then with green filter. Further 5% freshly prepared acetic acid was applied for 1 minute and if acetowhite areas are seen it was studied with respect to colour, tone, surface, margin and duration of stay. Lugol’s iodine was applied and area with mustard yellow or brown colour was looked for. The Reid’s colposcopic scoring was done and depending upon the findings, biopsy was taken from suspicious lesion and sent for HPR examination in labelled bottle with fixative. Hemostasis was achieved. Speculum was removed and patient was allowed to recover. Colposcopic findings were documented and explained to the patient in post procedure counselling. Patient was asked to attend hospital in case of complications e.g., bleeding, pain or foul swelling discharge etc. and to come for further follow up and treatment on basis of histopathological report.

Statistical analysis

Observations are tabulated and analysed using Microsoft office. The sensitivity, specificity, positive predictive value, negative predictive value, strength of correlation

calculated. Colposcopic diagnosis according to Reid's colposcopic scoring were compared with HPR and statistical significance was derived using p value by SPSS 25th version software.

RESULTS

Influence of age

Mean age of women was 45.54±10 years, minimum age was 31 years and maximum was 62 years. It is evident from present study that incidence of cervical cancer is low in women under age of 30 years, but the incidence increases in women aged 31-40 years and reaches a maximum above 40 years.

Colposcopic diagnosis p value=0.091 Not significant. Histopathological diagnosis p value= 0.170 not significant. The study was found not to be significant.

Influence of socioeconomic status (as per modified Kuppaswamy classification 2018) on cervical lesion

Out of 100 cases, maximum (38) cases belonged to UM. Based on colposcopy 71%, 53%, 57% had CIN from LM, UM, UL socioeconomic status and 11.8%, 7.9%, 42.9% were confirmed to have of dysplasia on histopathology among them. In present study, 2 cases of invasive cancer belonged to LM and UL SES.

Colposcopic diagnosis p value =0.009 significant. Histopathological diagnosis p value =0.05 significant. The study was found to be significant.

Influence of literacy

Out of 100 cases, 69% were graduate, 13% between 11-12th standard, 18% between 5-10th, of which 48%, 77%, 72% were CIN in each group by colposcopy and 8.7%, 7.7%, 22.3% were confirmed cases of dysplasia by histopathology in each group. Both cases of invasive cancer in the study, belonged to 5-10th standard group.

Colposcopic diagnosis p value =0.03 significant. Histopathological diagnosis p value =0.02 significant. The study was found to be significant.

Influence of residential area on cervical lesion

In present study, 79 women belonged to urban area. Out of 56 cases of CIN detected by colposcopy, 45 (57%) were from urban women. Out of 21 rural women, 11 (52.3%) were CIN on colposcopy and only 1 (4.8%) was confirmed dysplasia on biopsy as compared to 10 women of urban area (12.7%). Inflammation was the most common biopsy impression among rural as well as urban population (85.7% and 87.3%). Both cases of invasive cancer belonged to rural area.

Colposcopic diagnosis p value =0.05 significant. Histopathological diagnosis p value =0.02 significant. The study was found to be significant.

Influence of parity on cervical lesion

Out of 56 cases of CIN, 33 (49.2%) were of parity two; 14 (66.7%) of parity three. Para 2 was associated with 6 dysplasia and para 3 with 3 dysplasia. Out of four para 4, 2 were associated with dysplasia. Invasive cancer was documented in para 3 and above

Colposcopic diagnosis p value =0.01 significant. Histological diagnosis p value =0.01 significant. The study was found to be significant

Influence of age at marriage

Out of 100 cases, majority (72%) had marriage between 19-24 years of age. Out of 56 cases of CIN diagnosed by colposcopy, 39 (54.1%), had marriage between 19-24 years and 9 (69.3%) had marriage at <18 years of age. Both invasive cancer patient had age of marriage <18 years.

Colposcopic diagnosis p value =0.01 significant. Histopathological diagnosis p value =0.02 significant. The study was found to be significant

Influence of age at 1st child birth

Out of 100 cases, 65 women gave birth to their 1st child at age between 21-25 years, of which 36 (55.3%) were CIN by colposcopy and 8 (12.3%) had dysplasia on biopsy, 17 women gave birth to their 1st child before 20 years of age, of which 11 (64.7%) were CIN by colposcopy, 2 (11.8%) had dysplasia on biopsy and 2 had invasive cervical cancer.

Colposcopic diagnosis p value =0.03 significant. Histopathological diagnosis p value =0.08 not significant. The study was found significant for colposcopic diagnosis.

Influence of place of delivery

In the present study, maximum 90% women delivered at hospital and 10% delivered at home. Out of 10 home deliveries, 6(60%) were detected as CIN and 2 cases as invasive cervical cancer by colposcopy. Women who delivered at hospital showed 50 cases (55.5%) of CIN by colposcopy of which 11 (12.2%) were dysplasia on HPR.

Colposcopic diagnosis p value =0.01 significant. Histopathological diagnosis p value =0.01 significant. The study was found to be significant.

Influence of contraceptive practices

In present study, permanent method (45) followed by barrier (21) was the commonly used methods of contraception.

Table 1: Distribution according to contraceptive method and correlation of colposcopic diagnosis.

		Colposcopic diagnosis				Total
		Inf	CIN1	CIN2-3	Inv Ca	
Contraception methods	Natural	5 (38.5%)	5 (38.5%)	3 (23.1%)	0 (0%)	13 (100%)
	TL	15 (33.3%)	17 (37.8%)	11 (24.4%)	2 (4.4%)	45 (100%)
	IUCD	5 (33.3%)	7 (46.7%)	3 (20%)	0 (0%)	15 (100%)
	Barrier	13 (61.9%)	3 (14.3%)	5 (23.8%)	0 (0%)	21 (100%)
	OCP	4 (66.7%)	2 (33.3%)	0 (0%)	0 (0%)	6 (100%)
Total		42 (42%)	34 (34%)	22 (22%)	2 (2%)	100 (100%)

Table 2: Distribution according to contraceptive method and correlation of HPE.

		Histological diagnosis				Total
		Inf	LSIL	HSIL	Inv Ca	
Contraception methods	Natural	11 (84.6%)	2 (15.4%)	0 (0%)	0 (0%)	13 (100%)
	TL	37 (82.2%)	2 (4.4%)	4 (8.9%)	2 (4.4%)	45 (100%)
	IUCD	15 (100%)	0 (0%)	0 (0%)	0 (0%)	15 (100%)
	Barrier	18 (85.7%)	3 (14.3%)	0 (0%)	0 (0%)	21 (100%)
	OCP	6 (100%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
Total		87 (87%)	7 (7%)	4 (4%)	2 (2%)	100 (100%)

Colposcopic diagnosis p value=0.50 not significant. Histopathological diagnosis p value =0.39 not significant. The study was found not to be significant.

Association and impact of various clinical complaints

It is evident from the Table 3 that the most common complaint was discharge per vagina (74%) followed by pain abdomen (26%).

Table 3: Association with various clinical complaints.

Clinical complaints	No. of cases	Percentage
Discharge per vagina	74	74
Pain abdomen	26	26
Itching in private parts	15	15
Inter menstrual bleeding	10	10
Post coital bleeding	11	11
Post menopausal bleeding	9	9

Table 4: Distribution according to clinical complaints and correlation of colposcopic diagnosis.

Clinical complaints	Colposcopic diagnosis				Total
	Inf	CIN1	CIN2-3	Inv Ca	
Discharge P/V(DP/v)	29 (39.2%)	27 (36.5%)	16 (21.6%)	2 (2.7%)	74 (100%)
Pain abdomen (PA)	12 (46.2%)	10 (38.5%)	3 (11.5%)	1 (3.8%)	26 (100%)
Itching in private parts (ITC)	9 (60%)	3 (20%)	3 (20%)	0 (0%)	15 (100%)
Inter menstrual bleeding (IMB)	4 (40%)	3 (30%)	3 (30%)	0 (0%)	10 (10%)
Postcoital bleeding (PCB)	6 (54.5%)	2 (18.2%)	3 (27.3%)	0 (0%)	11 (100%)
Post menopausal bleeding (PMB)	4 (44.4%)	4 (44.4%)	0 (0%)	1 (11.1%)	9 (100%)

Table 5: Distribution according to clinical complaints and correlation of HPE.

Clinical complaints	Histological				Total
	Inf	LSIL	HSIL	Inv Ca	
Discharge per vaginam	64 (86.5%)	5 (6.8%)	3 (4.1%)	2 (2.7%)	74 (100%)
Pain abdomen	21 (80.8%)	2 (7.7%)	2 (7.7%)	1 (3.8%)	26 (100%)
Itching in private parts	14 (93.3%)	1 (6.7%)	0 (0%)	0 (0%)	15 (100%)
Inter menstrual bleeding	9 (90%)	1 (10%)	0 (0%)	0 (0%)	10 (100%)
Postcoital bleeding	10 (90%)	1 (9.1%)	0 (0%)	0 (0%)	11 (100%)
Post menopausal bleeding	8 (88.9%)	1 (11.1%)	0 (0%)	0 (0%)	9 (100%)

Colposcopic diagnosis p value =0.091 not significant. Histopathological diagnosis p value =0.170 not significant. The study was found not to be significant.

Correlation between cytology and colposcopy

In present study, out of 51 cases of inflammatory findings on cytology 67% (28) had inflammatory findings on colposcopy, (11) 32% were CIN1 and (12) 55% were CIN2 and CIN3. Out of 6 cases of LSIL by cytology,

(4)12% were CIN1, (2) 9.1% were CIN2 and CIN3. Out of 2 cases of HSIL by cytology (2) 9% were CIN2/3. The 2 cases of invasive cancer detected cytologically were invasive on colposcopy and on HPE too.

Colposcopy as gold standard compared with cytology, the sensitivity was 4.1%, specificity was 100%, PPV was 100%, NPV was 48.8%. The p value =0.01 which was found to be significant.

Table 6: Correlation of cytologic and colposcopic findings.

Colposcopic diagnosis	Cytological diagnosis						Total
	Inf	ASCUS	LSIL	HSIL	Inv Ca	Neg	
Inf	28 (66.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (33.3%)	42 (100%)
CIN1	11 (32.4%)	2 (5.9%)	4 (11.8%)	0 (0%)	0 (0%)	17 (50%)	34 (100%)
CIN2-CIN3	12 (54.5%)	2 (9.1%)	2 (9.1%)	2 (9.1%)	0 (0%)	4 (18.2%)	22 (100%)
Inv Ca	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2 (100%)

Table 7: Cytology and colposcopic values comparison.

Cytology	Colposcopy		Total
	Positive	Negative	
Positive	14 (100%)	0 (0%)	14 (100%)
Negative	44 (51.1%)	42 (48.9%)	86 (100%)
Total	58 (58%)	42 (42%)	100 (100%)

Correlation between colposcopic findings to HPE

In present study, out of 100 cases, 56 were diagnosed by colposcopy to have CIN and 11 were confirmed as

dysplasia on histopathological examination. Out of 34 cases of CIN1, 2 were confirmed to be LSIL; out of 22 cases of CIN2 and CIN3, 9 were HSIL and 2 cases of colposcopically diagnosed invasive cancer had invasive Ca histopathologically too.

Table 8: Correlation of colposcopy to HPE.

Colposcopy	Histopathology				Total
	Inf	LSIL	HSIL	Inv Ca	
Inflammation	42 (100%)	0 (0%)	0 (0%)	0 (0%)	42 (100%)
CIN1	32 (94.1%)	2 (5.9%)	0 (0%)	0 (0%)	34 (100%)
CIN2/CIN3	13 (59.1%)	5 (22.7%)	4 (18.2%)	0 (0%)	22 (100%)
Inv Ca	0 (0%)	0 (0%)	0 (0%)	2 (100%)	2 (100%)
Total	87 (100%)	7 (100%)	4 (100%)	2 (100%)	100

Table 9: Colposcopy and HPE.

Colposcopy (RCI)	HPR		Total
	Positive	Negative	
Positive	13	45	58
Negative	0	42	42
Total	13	87	100

The p value =0.01 which was found to be significant. Sensitivity =100%, specificity =48.3%, PPV =22.4%, NPV =100%.

DISCUSSION

In present study, mean age of women was 45.54±10 years. Out of 100 cases, maximum 51 number of women belonged to age group 41-50 years, followed by 21 cases in 31-40 years. Study conducted by Durdi et al, mean age of patients was 36 years.⁶ Study by Nikumbh et al mean age was 37 years.⁷ study by Bharani et al at Indore, the mean age of patients was 39.93 years.⁸ In a study by Verma et al mean age was 31-40 years.⁹

In the present study 96.2% of cases in the age group 31-40 years had cervical inflammation and only 3.8% had dysplastic biopsy report. It is evident from present study that the incidence of cervical cancer increases in women after 30 years of age and maximum frequency of LSIL HSIL and cervical carcinoma was observed in more than 40 years of age. It is evident from present study that incidence of cervical cancer increases in women after 30 years of age.

In present study, out of 100 cases, maximum 38 cases belonged to UM, 34 cases to LM and 7 cases to UL socioeconomic status, out of it 70.6%, 52.7%, 57.1% had CIN from LM, UM, UL socioeconomic status based on colposcopic findings and 11.8%, 7.9%, 42.9%, were confirmed to have dysplasia on histopathology among them. In present study, 2 cases of invasive cancer belonged to LM and UL SES. In a study by Mayavati et al, statistically significant association between Lower SES and cervical dysplasia was seen.¹⁰

Poor personal hygiene, poor living conditions, unstable marriages and dietary deficiencies are factors associated with low SES and hence with increased risk of cervical cancer. The present study conducted at BARC Hospital involved maximum people above the lower middle and none from the lower socioeconomic status. As per study maximum incidence of dysplasia was detected in the upper lower socioeconomic status.

In present study, out of 100 cases, 69% were graduates, 13% had studied between 11-12th standard, 18% between 5-10th, of which 47.8%, 76.9%, 72.2% were detected as CIN in each group by colposcopy and 8.7%, 7.7%, 22.3% were confirmed cases of dysplasia by histopathology in each group. Both cases of invasive cancer in the study, belonged to 5-10th group.

A study by El Moselhy et al concluded that low education and occupation levels are significant risk factors.¹¹

It is evident from study that the cases of dysplasia decreased as the level of education increased. Low socio-economical and educational levels have been associated with a less use of medical services and hence responsible for increased incidence of cervical cancer inspite of health coverage

In present study out of 100 cases, maximum 79 women belonged to urban area. Out of 56 cases of CIN diagnosed by colposcopy, 45 (57%) were from urban area. Out of 21 rural women, 11 (52.3%) were CIN on colposcopy and only 1 (4.8%) was confirmed dysplasia on biopsy as compared to 10 women from urban area (12.7%). Inflammation was the most common biopsy impression (85.7% and 87.3%) among rural and urban population. Both cases of invasive cancer belonged to rural area.

A study by Raychaudhuri et al showed higher incidences of cervical cancer among rural population.¹² Study by

Srivastava et al revealed that rural area was a risk FOR preinvasive and invasive cervical carcinoma.¹³ Infection with high risk HPV16 were found mor in rural areas, hence were at increased risk of developing CIN and subsequently, cervical cancer.

Increase in parity is associated with increase in severity of disease. In present study, out of 56 cases of CIN, 33 (49.2%) were of parity 2; 14 (66.7%) of parity 3. Para 2 was associated with 6 dysplasia and para 3 with 3 dysplasia. Out of 4 para 4 patients, 2 were associated with dysplasia. Invasive cancer was documented in para 3 and above

In a study by Gupta et al, frequency of dysplasia and cervical carcinoma was more in para 3 and above.¹⁴ Study by Mhaske et al, significant association was present between multiparity and development of dysplasia.¹⁵

Thus, multiparity is a well-known risk factor as it not only points about frequency of coitus but also on the damage on the cervix during child birth.

In the present study, out of 100 cases, majority, (72%) had marriage between 19-24 years of age. Out of 56 cases of CIN diagnosed by colposcopy, 39 (54.1%) had marriage between 19-24 years and 9 (69.3%) had marriage at <18 years of age. Both invasive cancer patient had age of marriage <18 years.

In a study by Verma et al mean age of marriage was 20 years, and development of dysplasia had association with early marriage.⁹ Study by Taherian also identified age at marriage of less than 15 years as being significantly associated with cervical cancer.¹⁶

Early marriage before the age of 18 years could be associated with unprotected sexual exposure, early exposure to sexual activities and pregnancy at an early age which are all well known risk factors of cancer cervix. Additionally, early marriage restricts social and geographic mobility limiting access to health information and education.

In the present study 2 cases of invasive cancer had age of marriage below 18 years, maximum cases of dysplasia were in 19-24 years group.

In present study out of 100 cases, 65 women gave birth to their 1st child at age between 21-25 years, of which 36 (55.3%) were CIN by colposcopy and 8 (12.3%) had dysplasia on biopsy, 17 women gave birth to their 1st child before 20 years of age, of which 11 (64.7%) were CIN by colposcopy, 2 (11.8%) had dysplasia on biopsy and 2 had invasive cervical cancer.

In a study by Gupta et al, the frequency of LSIL was maximum in cases with >30 years age at first child birth, while HSIL and cervical cancer was maximum <20 years.¹⁴ Study by Mhaske et al 88.8% of women with

dysplasia had delivered their 1st child at or before 18 years.¹⁵ Early age of pregnancy is thus a risk factor, probably indicating an early damage to cervix.

In the present study, maximum 90% women delivered at hospital and 10% delivered at home. Out of 10 home deliveries 6 (60%) were CIN and none showed dysplasia on HPE. 2 home deliveries were invasive cervical cancer on colposcopy. Women who delivered at hospital showed 50 (55%) cases of CIN by colposcopy of which 11 (12.2%) were dysplasia on HPR.

Melissa et al studied that those with higher number of vaginal deliveries were at higher risk for CIN.¹⁷ This is due higher chances of trauma to cervix during home delivery conducted by untrained persons.

In the present study, it was not able to associate place of delivery with early precancerous lesion, but home deliveries were associated with invasive cancer and all 11 cases of dysplasia had hospital deliveries

In present study, permanent method (45) followed by barrier (21) were the commonly used methods of contraception. Out of 56 cases of CIN detected on colposcopy 28 (62.2%) had undergone permanent method of sterilization. Out of 11 cases of dysplasia on HPE, 6 had undergone permanent TL, 3 were using barrier methods, 2 were non users. Both cases of diagnosed invasive cancer had undergone permanent method of sterilization. No dysplastic lesions were reported in biopsy in OCP and IUCD users. In a study by Ramadevi et al out of 39% of women who had undergone sterilization permanently the incidence of CIN was 59%.¹⁸ It shows that genital trauma definitely plays role in severity of lesion in nonusers and in permanent contraception as it poses an increased risk for harboring HPV infections. Among nonusers, husband working out of station may be a predisposing factor causing infrequent but unprotected sex with high-risk male partner. Promiscuity and frequency of unsafe sex may be the reason for increased incidence of premalignant lesion in western countries. Some studies state that OCP use for more than 5 years has higher chance for cervical dysplasia by regulating oncogenic sequence of HPV.

In the study by Nikumbh et al leucorrhea (69.3%) was the main complaint followed by low backache (33.5%).⁷ In a study by Mamata et al most common complaint was discharge per vaginum (56%), among them CIN was found in 21.4%.¹⁸

In present study out of 74 of cases presenting with complaint of discharge per vaginum, 43 (58.1%) were diagnosed CIN by colposcopy, 8 (10.9%) confirmed by HPR. Low grade and high-grade dysplastic lesions in biopsy report were present in cases with discharge per vaginum and pain abdomen. 2 cases of invasive ca presented with complaints of discharge discharge per vaginum and pain abdomen.

In present study, out of 51 cases of inflammatory findings on cytology 67% (28) had inflammatory findings on colposcopy, (11) 32% were CIN1 and (12) 55% were CIN2 and CIN3. Out of 6 cases of LSIL by cytology, (4)12% were CIN 1, (2) 9.1% were CIN2 and CIN3. Out of 2 cases of HSIL by cytology (2) 9% were CIN2/3. The 2 cases of invasive cancer detected cytologically were invasive on colposcopy and on HPE too. Colposcopy as gold standard compared with cytology, the sensitivity was 24.1%, specificity was 100%, PPV was 100%, NPV was 48.8%.

In a study by Ramadevi et al Pap smear showed mild dysplasia in 10% moderate dysplasia in 3% and severe dysplasia in 29.4%.¹⁸ Pap smear correctly estimated CIN in 78% and under-estimated in 10% and overestimated in 12%. Sensitivity of Pap smear was found to be very low-29%. Study by Tatiyachonwiphut et al, the cervical cytology findings were consistent with colposcopic diagnosis in 63%.¹⁹ The study strength was extremely significant $p < 0.01$

In present study, out of 100 cases, 56 were diagnosed by colposcopy to have CIN and 11 were confirmed as dysplasia on histopathological examination. Out of 34 cases of CIN1, 2 were confirmed to be LSIL, out of 22 cases of CIN2 and CIN3, 9 were HSIL. 2 cases of colposcopically detected invasive cancer had invasive cancer histopathologically too. As compared to histopathology (confirmatory diagnosis) colposcopy was 100% sensitive, 48.3% specific with a PPV of 22.4% and a NPV of 100%.

The p value=0.01 which was found to be significant.

In a study by Verma et al, the sensitivity, specificity, predictive value and false negative rate of colposcopy for invasive disease was 50%, 100%, 100% and 1.61% respectively.⁹ Study by Ramadevi et al correlation between colposcopic findings and biopsy showed a good correlation for higher grade lesions (CIN II and CIN III).¹⁸ Sensitivity was found to be 83% and specificity was 81%.

Study was conducted on a small sample size and could have been performed on larger subjects.

CONCLUSION

Colposcopy is more than an intermediate link between cytology and histopathology. It is a highly sensitive tool in the early diagnosis of dysplasia and invasive cancer. Previously, due to lack of standard diagnostic protocols, conventional colposcopy caused interpretation difficulties, thus the main drawback being inter observer variability. Therefore, in the present study we correlated the colposcopic assessment by modified Reid's index with histopathological results. The RCI scoring system is not only useful in taking directed biopsy but also useful for further follow up of low-grade lesions, provided site specification is added. Hence, it greatly simplifies learning

colposcopy. Colposcopic guided biopsy is a gold standard for confirmation of diagnosis of CIN. Therefore, the greatest benefit of colposcopy and directed biopsy is to avoid over treatment of low-grade lesions and under treatment of high-grade lesions. Hence “single visit” screen and treat strategy would eliminate the need for repeated visits.

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

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