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Original Research Article

Evaluation of abnormal cervix with Pap-smear, colposcopy and cervical biopsy in rural western U.P. at tertiary care hospital

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Abstract

Background: Cervical cancer is the third most common cancer in women worldwide. An estimated 371,000 new cases of cervical cancer are identified every year. In India, there are about 126,000 new cases and 70,500 deaths due to cancer cervix every year. Even though 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.
Materials and Methods: It was prospective observational study in 88 patients attending gynaecology opd. Out of 88 patients, 13 patients were lost in follow up after Pap smear.
Result: In result, there were 10 patient's with reids index 8 to 10 and 7 patients in her histopathology showed High grade intraepithelial neoplasia that is CIN 2, 3.
Conclusion: In this study, patient with higher rieds index had more likely chances of cervical dysplasia.

Keywords: Histopathology, Neoplasia.

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1. Introduction

Cervical cancer is the third most common cancer in women worldwide. An estimated 371,000 new cases of cervical cancer are identified every year. In India, there are about 126,000 new cases and 70,500 deaths due to cancer cervix every year.[1] 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.[2,3] Preventing invasive cancer through early detection and treatment of cervical intraepithelial neoplasia is currently the most cost-effective, long-term strategy for controlling cervical cancer.

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 gynaecological care. Cervical cancer has a prolonged inactive period and can be effectively avoided through early detection utilizing different screening methods such as Pap smear, HPV DNA testing, visual inspection with acetic acid, and visual inspection with Lugol's iodine. Nevertheless, colposcopy remains the gold standard for evaluating the accuracy of all screening methods. Primary issues experienced during colposcopy include insufficient expertise, challenges in interpretation, discrepancies, and non-adherence to established diagnostic protocols.

The incidence of cervical cancer has decreased by more than 50% in the past 30+ years, due to the increasing use of cervical cancer screening with cervical cytology.[4]

Papanicolaou test, also known as the Pap test or the Pap smear. It was developed by Dr. George Papanicolaou in the 1940s who discovered that precancerous and cancerous cells could be identified in cytologic samples from vaginal aspirates.[5]

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Pap smear is an integral part of the comprehensive health care of women. Besides being a tool of cancer diagnosis, it is used for the identification of infections such as trichomonas, herpes and HPV as well as for the classification of the hormonal pattern. Smears with inflammatory changes were seen mainly in women in the reproductive age group. Non-specific inflammatory smears formed the majority of cases in the studies of Nikhumb et al,[6] Bhojani et al,[7] and Vaghela BK et al.[8]

Pap smear test is a secondary preventive method aimed at identification of premalignant and malignant lesions, which may need follow-up and/ or treatment.[9]

Reid and Scalzi proposed the Reid colposcopic index (RCI) to make colposcopic diagnosis less subjective relies on critical analysis rather than on pattern recall.[10]

The Reid colposcopic index (RCI) is a systematic and objective method of colposcopically grading the severity of premalignant lesions of cervix. The index considers four colposcopic signs: lesion margin, colour of acetowhitening, blood vessels and iodine staining.[11]

2. Materials and Methods

This study was conducted in TSM Medical College, Lucknow for duration of 18 month, from July 2022 to January 2023. It was prospective observational study in 88 patients attending gynaecology opd. Pap smear had been taken in all 88 patients. Out of 88 patients, 13 patients were lost in follow up after pap smear so colposcopy done only for 75 patients.

2.1. Inclusion criteria

1. Married female more than 21 years of age
2. Women with complain of vaginal discharge
3. Women with complain of post coital bleeding
4. Unhealthy looking cervix on clinical examination
5. Family history of cervical cancer

2.2. Exclusion criteria

1. Visible growth on cervix
2. Unmarried females
3. Pregnant female
4. Postpartum females upto 6 weeks of delivery

After explaining the colposcopic procedure to patient, informed and written consent was taken from women. Relevant medical and reproductive history taken, and systemic and local examination done. After that, patient taken for colposcopy. Colposcopy is performed using a colposcope. The patient is positioned in a modified lithotomy position on the examination table with heels resting. A tray containing essential colposcopy instruments is placed next to the patient. Usually, a medium-sized bivalve speculum is used. Warm, clean water is the preferred lubricant for the speculum as it warms the metal without affecting the interpretation of cervical specimens. Once the speculum is inserted, opened, and fixed in place, the colposcope is positioned a few inches away from the vulva and the light source is turned on. Normal saline is then applied to the cervix using a cotton ball to examine for any lesions and blood vessels. The green filter on the colposcope helps in visualizing the blood vessels during the examination.

In the next step freshly prepared 3% acetic acid was applied with cotton ball to the whole cervix for 3 minutes and the cervix was examined for the presence of acetowhite areas.

In the last step we applied Lugol's iodine to the whole cervix and the extent of iodine uptake was seen. After all the three steps Reid's index was calculated for each patient on the basis of margin of lesion, colour of acetowhite areas, presence or absence of vessels, iodine uptake.

Finally punch biopsy was taken with punch biopsy forceps from the areas identified as abnormal and/or doubtful for the patients with REID'S colposcopy index 3-8. Biopsy was not performed in patients with REID'S colposcopy index was 0-2.

The histopathological results of were shown in numbers and percentages.

3. Results

In our study the total number of patients were 75 in whom colposcopy was performed, out of which 40 patients had REID'S colposcopy index 0-2 in these patients biopsy was not done but they were advised regular follow up in gynaecology OPD. Thirty five (46.67%) patients had REID'S index 3-8 in which biopsies were performed. So the sample size (n) was 35 out of which 15(X) biopsies were positive for CIN (including CIN 1, CIN 2 and CIN 3) and 20 biopsies were negative for CIN. Therefore the sample proportion (p') was 0.42857(x/n). The requested confidence level (C.L) was 0.95. After substituting the above data in our study the confidence interval was calculated which came out to be equal to 0.2632272.6064691. It was estimated with 95% confidence that between 26% to 60% of all the women who underwent cervical biopsy, developed CIN.

Table 1 showed that most of the patients were in 3rd and 4th decade and belong to middle class socio –economic status. Study conducted by Durdi et al.,[12] mean age of patients was 36 years. Study by Nikumbth et al.[13] mean age was 37 years study by Bharani et al.[14] Indore, the mean age of patients was 39.93 years.

Table 2 belong to most of the patients come to gynaecology opd with complain of discharge per vaginum (45.33%), pain abdomen (14.66 %) and abnormal uterine bleeding (9.33%). Study conducted by Raksha et al.,[15] most of patient had complain of discharge per vaginum (74%), pain abdomen (26%) and itching in private parts (15%).

Table 1: Showed socio-demographic profile of patient

Age (in years)	Number (n=75)	Percentage (%)
21-30	15	20 %
31-40	25	33.33%
41-50	25	33.33%
51-60	10	13.34%
>60	0	0%
Socio-economic status		
Lower	15	20%
Middle	40	53.33%
Upper	0	26.67%
Living Status		
Rural	28	37.33 %
Urban	47	62.665
Menstrual history		
Premenopausal	69	92 %
Postmenopausal	6	8%

Table 2: Showed different type of complain presented to OPD

Presenting Complain	Number (n=75)	Percentage (%)
Discharge per vaginum	34	45.33%
Pain in lower abdomen	11	14.66%
Vaginal itching	7	9.33%
AUB (Intermenstrual bleeding, menorrhagia etc)	18	24%
Postmenopausal bleeding	5	6.66%

Table 3: Represents Pap smear result

PAP Smear Result	Number (n=75)	Percentage (%)
NILM	21	40%
Inflammatory	14	25.33%
ASCUS	7	16%
AGC	2	4%
LSIL	6	8%
HSIL	5	6.66%
SCC	0	0%

NILM: Negative for intra epithelial lesions/malignancy; ASCUS: Atypical squamous cells-of undetermined significance; AGC: Atypical glandular cells; LSIL: Low grade squamous intra epithelial lesion; HSIL: High grade squamous intra epithelial lesion; SCC: Squmous cell carcinoma

Table 3 depicted that 40% of patients had NILM (negative for intra epithelial malignancy) in their pap smear screening result. 25.33% had inflammatory smear, 16% had ASCUS (atypical squamous cells of undetermined significance). Atypical glandular cells in 4%, LSIL (low grade intra epithelial lesion) in 8% and HSIL (high grade intra epithelial lesion) in 6.66%.

Table 4 showed that reids colposcopic index for 53.33% patients was 0-2, 33.33% patients score was 3-5 and 13.34% patients reids score was 6-8.

In **Table 5** histopathological finding of cervical biopsy were chronic cervicitis in 40% of patients, squamous cell metaplasia in 8.57%, cervical erosion in 8.57% and cervical intraepithelial neoplasia (CIN) 1 in 22.86%, CIN 2 in 12.43%, CIN 3 in 8.57%.

Table 4: Represent number of patients with different reids index

Reid`s Colposcopic index	Number (n=75)	Percentage (%)
0-2	40	53. 33 %
3-5	25	33.33 %
6-8	10	13.34 %

Table 5: Denotes histopathological finding of cervical biopsy

Histopathological finding of cervical biopsy	Number (n =35)	Percentage (%)
Chronic cervicitis	14	40 %
Squamous cell metaplasia	3	8.57%
Cervical erosion	3	8.57 %
CIN 1	8	22.86%
CIN 2	4	11.43 %
CIN 3	3	8.57 %
Squamous cell carcinoma	0	0 %

4. Discussion

The sociodemographic parameters of present study were very much similar to that of other studies. In the present study, we included women 21 to 60 year age and most of them belong to 3rd and 4th decade and this age was comparable to other study.

In our study, most of the patient presented to opd with complain of discharge per vaginum, pain abdomen and abnormal uterine bleeding and similar type of result find on study done by Durdi et al.[12] and Raksha et al.[15]

In our study the total number of patients were 75 in whom colposcopy was performed, out of which 40 patients had REID'S colposcopy index 0-2. In these patients biopsy was not done but they were advised regular follow up in gynaecology OPD. Thirty five (46.67%) patients had REID'S index 3-8 in which biopsies were performed. So the sample size (n) was 35 out of which 15(X) biopsies were positive for CIN (including CIN1, CIN 2 and CIN 3) and 20 biopsies were negative for CIN. Therefore the sample proportion (p') was 0.42857(x/n). The requested confidence level (C.L) was 0.95. After substituting the above data in our study the confidence interval was calculated which came out to be equal to

0.263227-.6064691. It was estimated with 95% confidence that between 26% to 60% of all the women who underwent cervical biopsy, developed CIN.

In our study, reids score more than 5 found in 10 patient and when these patients cervical biopsy taken, CIN 2-3 reported in 7 patients that is 70%.

5. Conclusion

This study directly correlate that higher the reids colposcopic index, higher the chances of cervical dysplasia. So colposcopy could be better adjunctive tool with Pap smear in low resource setting.

6. Source of Funding

None.

7. Conflict of Interest

The author declares no conflict of interest.

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