Original Research Paper

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CORRELATION OF COLPOSCOPY WITH BIOPSY IN CASE OF ABNORMAL CERVICAL CYTOLOGY

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ABSTRACT **Background :** Cancer cervix is the most common genital cancer among women in India. Wide Spread use of screening and confirmatory methods has Increased detection rate of preinvasive stage of disease. **Objectives:** This study was aimed to evaluate Correlation of pap Smear and colposcopy in detection of premalignant lesions of cervix and to find out the role of colposcopy and its relation with cervical biopsy to evaluate abnormal cervical cytology. **Material and Methods :** This prospective clinical study was conducted over a period of one year from July 2022 to June 2023 in Gynecology OPD of SRN Hospital and KNMH,Prayagraj after taking approval from the institution Ethical committee with a sample size of 100 woaman with abnormal PAP Smear report. **Results:** Out of total 100 abnormal PAP Smear Cases ,underwent colposcopic and histopathological examination 35 % detected as non-specific cervicitis,24% detected as CIN I , 23% detected as CIN II and 15 % detected as CIN III and 3% detected as squamous cell carcinoma.In our study accurate estimation of colposcopy occurs in 73% cases ,in 9% patients colposcopicaly overestimated and 18% cases underestimated. **Conclusion:** The regular screening of population by Pap smear is cost effective method for early detection of premalignant and malignant cervical lesions .Colposcopy is better tool for the evaluation of women with abnormal Pap smears, unhealthy cervix, and seems to be more accurate in detecting CIN. colposcopy eliminates the need for repeated follow up as in pap smear . Hence, colposcopy with biopsy should be incorporated in women with abnormal cervical cytology

KEYWORDS :

INTRODUCTION

Cancer cervix is the most common genital cancer among women in India[1]. Accounting for 80% of all female genital tract cancers. Early detection of pre-invasive disease and treatment of Cervical intraepithelial neoplasia has the potential to improve the outcome of patients.Cancer cervix is preventable[2] because,it has a long preinvasine state,Anatomical availability of cervix for repeated examination ,Effective screening method and Availability of curative treatment of preinvasive lesions. Substantial reduction in prevalence of cancer cervix in developed world has been proved to be due to widespread, organized screening programs.

Various Cervical Cancer Screening tools and confirmatory test currently available which requires different Level of expertise cost and time.These are visual inspection with acetic acid (VIA) and Visual inspection with Lugol's Iodine (VILI), PAP test, Liquid based cytology (LBC) and HPV DNA testing,Colposcopic and Histopathological examinations.

PAP Smear is Cytological examination of exfoliating or scrapped cell to detect dysplasia[3], Abnormal Pap smear result including Atypical Squamous cells of undetermined significance (ASCUS), ACS-H(atypical squamous cell in which high grade lesion must not be excluded), low grade Squamous intraepithelial lesions (LSIL), HSIL(high grade Squamous intraepithelial lesion) require further investigation like Colposcopy and Cervical Biopsy. Colposcopic examination involves the systemic evaluation of lower genital tract with special emphasis on superficial epithelium and blood vessels of connective tissue stroma.Reid and Scalzi proposed the reid colposcopic index to make colposcopic diagnosis less subjective [4].On the basis of REID SCORE colposcopic findings devided into CIN 1[score 0-2], CIN 2[score 3-4], CIN 3 [score 5-8] [5].Colposcopy directed biopsies were taken and diagnosis results were categorised as chronic cervicitis,CIN 1, CIN 2, CIN 3, Squamous cell carcinoma (SCC)according to WHO. WHO advises Screening strategy with cytology by PAP smear followed by colposcopic examination and directed biopsies. Where facilities are available in an effort to decrease the burden of this major public health problem. [6]

Aims And Objectives

This study was aimed to evaluate Correlation of pap Smear and colposcopy in detection of premalignant lesions of cervix and to find out the role of colposcopy and its relation with cervical biopsy to evaluate abnormal cervical cytology.

MATERIALS AND METHODS

This is a prospective clinical study of 100 women with abnormal pap smear report or unhealthy cervix attending the Gynecology OPD of SRN Hospital and KNMH after taking approval from the institution Ethical committee. Informed consent was taken from each woman. Relevant obstetrics &gynecology history was taken and recorded.

Inclusion Criteria
- Women of age 20-60 years
- Women with symptoms like vaginal discharge, postcoital bleeding, intermenstrual bleeding.
- Women with clinically unhealthy Cervix on naked eye examination (erosion, hypertropic Cervix, bleeding on touch ulcer, simple leukoplakia, keratinisation)
- All women underwent PAP smear testing, only those women who had abnormal cytology reports, included as further study subjects.
- Women came with pap smear reports showing dysplasia

Exclusion Criteria
- Women with bleeding at the time of examination.
- Unsatisfactory smear for examination.
- Pregnant women.
- Women under went hysterectomy
- Women with Frank invasive cancer.

In women with abnormal pap smear reports ,Colposcopy was done in post menstrual period. Women were subjected to colposcopy examination machine details as BORZE model no DVC 14, 000, with green filter, TV camera, and CTV display, focal length 25 mm and magnification 7. 5*10 * and working distance of 25 cm. Abnormal Colposcopic findings like acetowhite areas, abnormal vascular pattern, abnormal iodine staining areas were analysed and on the basis of Reid score Colposcopic findings devided into CIN 1 (score 0-2), CIN 2(score 3-4), CIN 3 (Score 5-8). All patients were analysed and taken for biopsy.Biopsy was taken by punch biopsy forceps from suspicious Colposcopic lesion while four quadrant biopsy was taken in normal Colposcopic cases under sedation and paracervical block with 1% lignocaine injection in whom either pap smear or colposcopy or both or

any were abnormal.

Colposcopic directed biopsies were processed, histopathological slide prepared and stained with hematoxylin and eosin and examined under light microscope. Biopsy results were categorised as chronic cervicitis, cervical intraepithelial neoplasia CIN 1, CIN 2, CIN 3, carcinoma in situ, squamous cell carcinoma and adenocarcinoma.

RESULTS

In our study total 100 patients as per the inclusion and exclusion criteria attending Gynecology OPD of SRN hospital and KNMH prayagraj.Patients with abnormal cervical cytology reports subjected to colposcopy and further biopsy.

Table 1: Distribution Of Women According To Age, Socio-economic Status,region,education,married Life, obstretic History

Variables	Categories	No of Patients	%
Age	20-30 years	8	8%
	31-40 years	37	37%
	41-50 years	45	45%
	51-60 years	10	10%
Socio economic Status	Upper	2	2%
	Upper middle	22	22%
	Lower middle	48	48%
	Upper lower	12	12%
	Lower	16	16%
Region	Rural	80	80%
	Urban	20	20%
	Total	100	100%
Education	Illiterate	73	73%
	Literate	27	27%
Married Life	<5	1	1. 0%
	6-10	20	20. 0%
	11-15	24	24. 0%
	15-20	20	20. 0%
	>20	35	35. 0%
Obstetric history	Para 1	3	3. 0 %
	Para 2	22	22. 0 %
	Para 3	54	54. 0 %
	Para 4 & above	21	21. 0 %

In our study out of 100 woman with abnormal pap smear maximum no of woman belongs to 41-50 years ,mean age in our study was 41.7 years.Majority of patients belong to lower middle class of socioeconomic status.Majority of woman belongs to rural area that was 80% and mostly women was illiterate.Maximum no of women with married life >20 years,and maximum of them were multiparous i.e. para 3

Table 2: Distribution Of Women According To Abnormal Pap Smear, Colposcopic And Histopathological Findings:

Variables	Categories	No of Patients	%
PAP Smear	ASCUS	40	40%
	LSIL	38	38%
	HSIL	15	15%
	ASC-H	7	7%
Colposcopic findings	Normal	38	38%
	CIN I	26	26%
	CIN II	21	21%
	CIN III	15	15%
Histopathology findings	Non specific Cervicitis/Inflammatory	35	35%
	CIN-1	24	24%
	CIN-2	23	23%
	CIN-3	15	15%
	SQUAMOUS CELL CARCINOMA	3	3%

In our study according to PAP smear report , out of 100 women cases of ASCUS were 40%,LSIL cases were 38%,HSIL cases were 15% and ASC-H cases were 7%All these women underwent colposcopic examination. It was found that 38% were normal, 26% were CIN I,21% were CIN II and 15% were CIN III.Whereas Histopathological examination of these women showed that Non specific Cervicitis/Inflammatory were 35%,CIN 1 were 24%, CIN 2 were 23%,CIN 3 were 15% and squamous cell carcinoma cases were 3%

Table 3: Correlation Of Pap Smear And Colposcopic Finding (based On Reid Index)

PAP SMEAR	COLPOSCOPIC FINDING (Based on reid index) Likely to be				Total
	NORMAL	CIN I	CIN II	CIN III	
ASCUS	21(21%)	17(17%)	2(2%)	0(0%)	40(40%)
LSIL	17(17%)	7(7%)	14(14%)	0(0%)	38(38%)
ASC-H	0(0%)	2(2%)	3(3%)	2(2%)	7(7%)
HSIL	0(0%)	0(0%)	2(2%)	13(13%)	15(15%)
Total	38(38%)	26(26%)	21(21%)	15(15%)	100(100%)
p-value (Fisher Exact test) & significance	0. 072×10-14 (<0. 05) Significant				

In our study, 40% ASCUS results on Colposcopic findings as 21% normal, 17% CIN I, 2% CIN II. 38% LSIL cases detected on colposcopy as 17 % normal, 7% CIN I, 14% CIN II. 7% ASC-H revealed as 2% CIN I, 3% CIN II and 2% CIN III. 15% HSIL cases results into 2% CIN II, 13% CIN III.

Table 4: Correlation Of Pap Smear And Histopathological Examination

Histopathological Examination	PAP smear				Total
	ASCUS	LSIL	ASC-H	HSIL	
Benign	17(17%)	18(18%)	0(0%)	0(0%)	35(35%)
CIN I	14(14%)	8(8%)	2(2%)	0(0%)	24(24%)
CIN II	9(9%)	12(12%)	0(0%)	2(2%)	23(23%)
CIN III	0(0%)	0(0%)	4(4%)	11(11%)	15(15%)
SCC	0(0%)	0(0%)	1(1%)	2(2%)	3(3%)
Total	40(40%)	38(38%)	7(7%)	15(15%)	100(100%)
p-value (Fisher Exact test) & significance	0. 028×10-11 (<0. 05) Significant				

Total 100 abnormal pap smear cases under went into biopsy in which 40 ASCUS results into 17% nonspecific chronic cervicitis, 14% CIN I, 9% CIN II cases. 38% patient of LSIL results in to 18% nonspecific chronic cervicitis, 8% CIN I, 12% CIN II. 7 % ASC-H cases results in to 2% CIN I, 4% CIN III, 1% SCC. 15% HSIL results into 2% CIN II, 11% CINIII, 2% SCC.

Table 5: Correlation Between Histopathological Findings With Colposcopic Finding

Histopathological findings	COLPOSCOPIC FINDING				Total
	Normal	CIN I	CIN II	CIN III	
Benign	31(31%)	4(4%)	0(0%)	0(0%)	35(35%)
CIN I	7(7%)	14(14%)	3(3%)	0(0%)	24(24%)
CIN II	0(0%)	8(8%)	15(15%)	0(0%)	23(23%)
CIN III	0(0%)	0(0%)	2(2%)	13(13%)	15(15%)
SCC	0(0%)	0(0%)	1(1%)	2(2%)	3(3%)
TOTAL	38(38%)	26(26%)	21(21%)	15(15%)	100(100%)
p-value (Fisher Exact test) & significance	0. 022×10-14 (<0. 05) Significant				

Out of total 100 cases, under went histopathological examination, 35 patientdetected as non specific cervicitis, 24% detected as CIN 1, 23% detected as CIN 2, 15% as CIN 3, 3% patient detected as Squamous cell carcinoma.

Table 6: Validity Of Colposcopy Using Reid Index With Histopathology.

Reid Index	Over Estimation	Under Estimation	Accurate Estimation	Total
Normal	0(0%)	7(7%)	31(31%)	38(38%)
CIN I	4(4%)	8(8%)	14(14%)	26(26%)
CIN II	3(3%)	3(3%)	15(15%)	21(21%)
CIN III	2(2%)	0(0%)	13(13%)	15(15%)
Total	9(9%)	18(18%)	73(73%)	100(100%)

In present study, accurate estimation of Colposcopy occurs in 73% cases, in 9% patient colposcopically overestimated, and in 18 % cases underestim

DISCUSSION

In our study majority of patients belongs to age group of 41-50 yrs. Mean age in the present study was 41.7 yrs which was comparable to

the study of Chandrakala Joshi et al (2015)[7] and Dinesh Kumar et al(2021)[8]. All these studies indicate that carcinoma Cervix is common in elderly age groups. majority of patients belongs to rural areas and lower middle class, Similarly studied by Nagaramadevi et al(2012)[9].

There was higher the incidence of CIN, when the duration of exposure of sexual intercourse to the woman increases, so duration of marriage and intercourse had a distinct role in the genesis of cervical dysplasia.In our study, incidence of CIN is maximum in women with marriage life >20 years,Similarly, Saha thapa et al(2005) [10]study shows mean age of marriage was 21 yrs, nagaramadevi et al[9] study shows mean age of marriage was 19yrs. In our study, maximum patients 54 % were in the parity 3 group. Similarly, Pooja Gupta et al (2020)[11]study shows as parity increases chances of malignancy increases, Kirtipal subedi et al (2019)[12] study shows maximum patient were in the parity 3-4.

All patients with abnormal cervical cytology reports included in our study. In which ASCUS in 40% cases, LSIL in 38% cases, HSIL in 15 % cases and ASC-H in 7 % patient.which was comparable to study of Kirtipal subedi (2019)et al [12]All women with abnormal cervical cytology was taken for Colposcopic examination and further biopsy was taken. In our study, on the basis of Reid Colposcopic index score all abnormal Colposcopic findings was categorised as CIN I in 26% cases, CIN II in 21% cases, CIN III in 15% cases. Normal Colposcopic findings seen in 38% patients.Kirtipal subedi (2019) et al [12] study shows normal in 45%, CIN 1 in 23%, CIN 2 in 16%, CIN 3 in 15% cases. In our study, histopathology reports for all abnormal cervical cytology shows 35% non specific cervicitis/inflammatory, 24 % CIN 1, 23% CIN 2, 15% CIN 3 and Squamous cell carcinoma in 3% cases. In our study, accurate estimation for benign lesion was 31% and underestimation was 7%. For CIN 1 accurate estimation was 14%, under estimation 8%, over estimation 4%. For CIN 2, 15% accurate estimation done, 3%over estimation and 3% under estimation done.For CIN 3, 13% accurate estimation, and 2% over estimation done.While evaluating the validity of Colposcopy with histopathology, colposcopy seems to make an accurate diagnosis in 73% cases, overestimating in 9% cases, and underestimating in 18% cases. Kirtipal subedi et al (2019) [12] study shows validity of Colposcopy with histopathology, colposcopy seems to make an accurate diagnosis in 75% of cases, overestimating in 15% cases, and underestimating in 8% of cases.

CONCLUSION

Earlier diagnosis of Cervical intraepithelial neoplasia (CIN)in adult women is a desirable objective. CIN lesions and early invasive cancers should be diagnosed in an early stage for appropriate management. In India and other developing countries, social, educational and medical resources lag behind. Colposcopy is better tool for the evaluation of women with abnormal Pap smears, unhealthy cervix, and seems to be more accurate in detecting CIN. colposcopy eliminates the need for repeated follow up as in pap smear which has defined low sensitivity. Hence, colposcopy with biopsy should be incorporated in women with abnormal cervical cytology. Colposcopy using RCI (Reid Colposcopic index) has satisfactory diagnostic efficacy and the good correlation with histopathology makes it a valid tool in order to detect timely changes that precedes the cancer cervix.

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