

Cytological Screening for early Diagnosis of Cervical Intraepithelial Neoplasia (CIN) and early Carcinoma of Cervix.

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Abstract- This study was an prospective study conducted on 500 women attending OPD of D. Y. Patil Hospital, Kadamwadi, Kolhapur.

Aim of D. Y. Patil study was to know the efficacy of Pap Smear cytology in screening for early diagnosis CIN & ca Cx & co-relation of cytological finding with histological findings.

It was found that, elderly age group women are at incensed risk of precancerous & cancerous lesions of Cx. Women who were of < 16 years at the time of there marriage are at increased risk of precancerous & cancerous lesion of cx. In this, women who were married >40 years are at increased risk of precancerous lesions & ca cx women with parity 3 – 4 are at increased risk of precancerous lesion CIN & ca cx in this study out of 500, 316 women having c/o White discharge per vaginum (WDPV) 86 women have precancerous lesion of cx & in this out of 195 women having absence of White discharge per vaginum (WDPV) 16 women's have precancerous lesion. In this women's having c/o PCB 62% has precancerous lesion & women not having c/o post cotal bleeding 16% has precancerous lesion. In this out of 60 women who had menstrual disturbans 30 women have precancerous lesions.

In this study out of women who had intermenstrual bleeding 40% women have precancerous lesions, & only 16% precancerous lesions are seen in women not having intermenstrual bleeding. In this study out of 310 women who are in lower socioeconomic class, 68 had precancerous lesion & 175 women who are in medal class, 35 had precancerous lesion. In this, women who were not using any contraception are at increased risk of precancerous lesion.

Index Terms- CIN) Cervical Intraepithelial Neoplasia, (Ca Cx) Carcinoma Cervix, PCB post coital bidding

I. INTRODUCTION

According to the World Health Organization, cervical cancer is the second most common type of cancer among women's, and was responsible for over 250,000 deaths in 2005. Approximately 80% of these deaths occurred in developing countries. Without urgent intervention, deaths due to cervical cancer are projected to rise by almost 25% over the next 10 years.

Cancer cervix has been considered preventable because it has a long preinvasive state and availability of screening

programs and treatment of preinvasive lesions is effective. It has been well established that well-organized screening by cytology has substantially reduced the incidence of morbidity and mortality from cervical cancer in developed countries.^{1,2,3}

Many developing countries do not have ample resources to implement cytology-based prevention programs, which necessitates well-organized laboratories to collect material and specialized personnel apt to render a diagnosis.⁴

The goal of screening of carcinoma of cervix is to diagnose and treat carcinoma cervix in early preinvasive states make the disease ideal for screening procedures. Here is the importance of a simple and relatively inexpensive procedure which could help to prevent a benign curable condition from developing into life threatening proportions. But the fact must be accepted that in the best of hands cervical smears are only an indicator. False negative are up to 15-30% in most cases.⁵ the final diagnosis must be made on pathological studies.

The success story in most developed countries can be attributed to a well executed screening programme, But in country like India where the revenue and resources are limited the results also have its limitations. For a programme like cervical screening to be successful in India it would require mass screening, A regular follow up with an accessible and affordable treatment and above all a good public awareness which at the present stage is a virtue of the elite who are at a lower risk.

II. METHODOLOGY

Study was carried out for a period of the year form May 2012 to Aug. 2014 in Dept. of OB/GY in D. Y. Patil Hospital, Kadamwadi, Kolhapur.

Aim was cytology screening for early diagnosis of CIN & early Ca Cx.

Objectives are to study efficacy of pap smear cytology for CIN & Ca Cx and to evaluate & interpret cases of epithelial lesion. According to Bethesda 2001 classification system & correlation of cytological finding with histological findings.

Informed consent was taken from each woman. Relevant obstetric & gynecology history was taken & recorded.

Inclusion criteria

Women of age (married) between 1665years presenting to the gynaec OPD with/without symptoms.

Women with symptoms like vaginal discharge, postcoital bleeding,

postmenopausal bleeding, intermenstrual bleeding and persistent leucorrhoea not responding to antibiotics.

- Women with normal looking cervix but symptomatic.
- Women with cervical lesions like polyps, erosion, hypertrophied cervix, cervix with nabothian cyst.

Women with clinical evidence of acute pelvic infection

Exclusion criteria

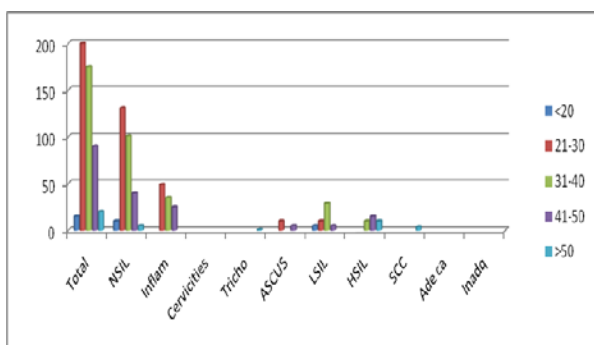
- Women with bleeding at the time of examination.
- Women who had been previously treated for carcinoma cervix
- Pregnant women.

- Women with frank lesions.
 - Women with previous cervical surgery
- Women's were subjected to pap smear & Cervical biopsy
Cervical smear reporting as per Bethesda 2001 clarification.
Biopsy was taken from abnormal area of categorized in to
normal / Inflammatory
Chr. Cervicitis
CIN – I. II. III
Sq. Cell Ca
Adeno Ca

III. RESULTS

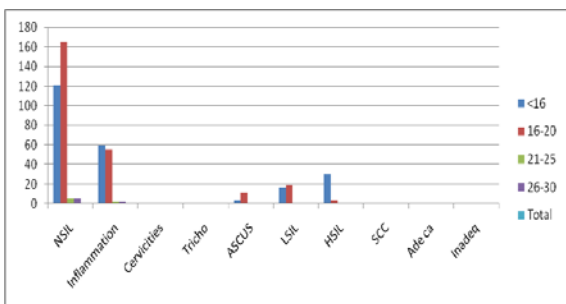
AGE DISTRIBUTION :-

Elderly age group women are at increased risk of precancerous & cancerous lesion of cervix.



1) AGE AT MARRIAGE :-

Women who were <16 years at the time of their marriage are at increased risk of precancerous & cancerous lesion of cervix.



1) YEARS OF MARRIAGE:-

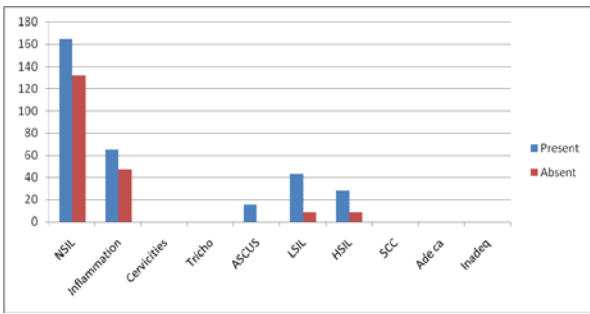
women who were married >40 years are at increased risk of precancerous & cancerous lesion of cervix.

2) PARITY:-

women with parity 3-4 are at increased risk of precancerous & cancerous lesion of cervix.

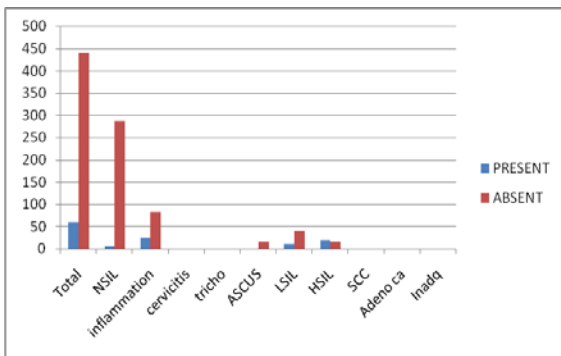
3) POSTCOITAL BLEEDING:-

women's having complaint of post coital bleeding 62% has precancerous lesion and women not having complaint of post coital bleeding 16% has precancerous lesion.



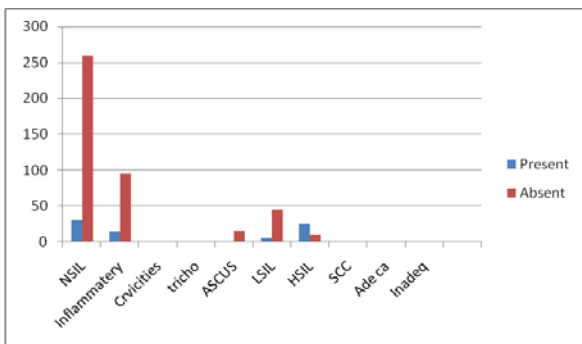
4) MENSTRUAL DISTURBANCES:-

In this study out of 60 women who had menstrual disturbances 30 women have precancerous lesion.



5) INTERMENSTRUAL BLEEDING:-

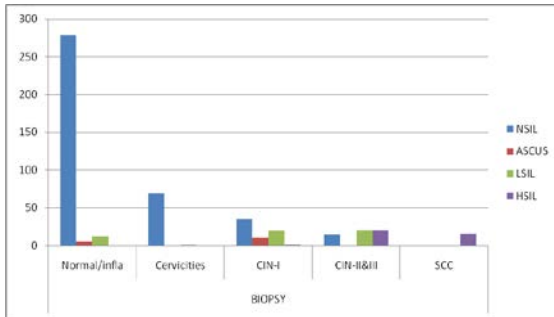
In this study out of women who had intermenstrual bleeding 40% women have precancerous lesion. And 16% precancerous lesion are seen in women’s not having complaint of precancerous lesion



6) SOCIOECONOMIC STATUS:-

In this study out of 310 women who are in lower socioeconomic class,68 had precancerous lesion & 175 women who are in middle class,35 had precancerous lesion.

7) CORRELATION OF CYTOLOGICAL FINDING WITH HISTOPATHOLOGICAL FINDING :-



- 397 NILM279 Normal/Inflam, 69 Cervicitis, 35 CIN-I, 14 CIN-II&III
- 16 ASCUS.....5 Cervicitis, 10 CIN-I
- 52LSIL.....12Normal/Inflam, 1 Cervicitis, 19 CIN-I, 20 CIN-II&III
- 36HSIL.....1CIN-I,20 CIN-II&III, 15SCC

SENSITIVITY=TP/TP+PN = 85/85+49= 85/134= 63%

SPECIFICITY= TN/TN+FP=348/348+18=348/366=95%

DIAGNOSTIC ACCURACY= TP+TN/TP+TN+FP+FN= 348+85/85+348+49+18= 433/500= 86%

IV. DISCUSSION

Cervical cytology-Sensitivity

Study	Sensitivity	Reference Standard
Goel et al (2001)	50.0	Colposcopy/Biopsy
Hendrik S Cronje et al	53.3	Colposcopy/Biopsy
R. Sankaranarayanan et al ¹⁴ (Multicentric- 2003) Kolkata Trivandrum Mumbai	36.6 72.3 70.0	Colposcopy/Biopsy
Present study	63	Biopsy

In a study conducted by Goel et al the sensitivity of Pap smear was found to be 50%. In a study by Cronje HS et al reported sensitivity was 53.3%.

A multicentric study by Sankaranarayanan et al showed sensitivity of Pap smear ranging from 36.6% to 72.3%. In the present study, the sensitivity of Pap smear was 63%e which is in correlation with Goel et al (2001) and R. Sankaranarayanan et al (Multicentric- 2003) at Kolkata.

Cervical cytology-Specificity

Study	Specificity	Reference Standard
Goel et al (2001)	97.0	Colposcopy/biopsy
Hendrik S Cronje et al	97.0	Colposcopy/biopsy
R. Sankaranarayanan et al ¹⁴ (Multicentric-	94.6 87.2 97.9	Colposcopy/biopsy

2003) Kolkata Trivandrum Mumbai	98.6	
Present study	95	Biopsy

In a study conducted by Goel et al the specificity of Pap smear was found to be 97% In a study by Cronje HS et al reported specificity was 97%

A multicentric study by Sankaranarayanan et al showed specificity of Pap smear ranging from 87.2% to 98.6% In the present study, the specificity of Pap smear was 95.0 which are in correlation with Goel et al, Cronje HS et al and by Sankaranarayanan et al at Trivandrum.

As a screening test, the Pap smear has been found to have a low sensitivity, between 50% and 80%, resulting in a high false-negative rate of 9-40%. However, the specificity of cytological evaluation is high. The sensitivity of the Pap smear has been found to be even lower in developing countries. The possible reason for this may be the large percentage of cervicitis and inflammatory smears, which mask mild dysplasia.

AGE

The mean age of our study population is 35.3 +10.2 years. Women with age group of 31- 50 years are likely to have more precancerous lesions

Hence from the above data, screening for cervical cancer before the age of 35 is necessary to detect premalignant lesions.

AGE AT MARRIAGE

The mean age at marriage of this study group is 16.8 + 2.29 years, which is an important risk factor. 40.7% of the participants are married at age less than 16 years. Women with age at marriage less than 16 years are likely to have more precancerous lesions Early marriage is still prevalent in India particularly in rural setup. Education and stringent laws are important to tackle this social problem.

DURATION OF MARRIED LIFE

Long duration of marital life and hence prolonged sexually active period has been implicated as a risk factor. Women married for more than 30 years likely to have more precancerous lesions

PARITY

High parity (para 3 or more) has also shown significant association with pre-cancerous and cancerous lesions. Women with parity of 3 and more are likely to have more precancerous lesions .

SOCIO ECONOMIC STATUS

61% of lesions were seen in patients belonging to the low socioeconomic status (as per the B. G Prasad classification). The reasons for this distribution may be early age at marriage, multiparity, malnutrition and early health seeking.

SYMPTOMS

Even though white discharge is present in 77.7% of the participants this complaint is not significantly associated with the risk of precancerous lesions compared to history of post coital bleeding which significantly associated with precancerous lesions and invasive cancer . Hence these patients should be promptly evaluated for presence of malignancy.

Limitations of this study

In this study, sample is selected from the population attending OPD. This population is not representative of general population. Hence when these tests are used for screening in general population the estimated sensitivity and specificity may not be achievable.

V. CONCLUSION

1. The regular screening of population by Pap smear is a cost-effective method for early detection of premalignant and malignant cervical lesions and down staging of carcinoma cervix. The procedure is simple, inexpensive and can be performed in the outpatient department. Hence, it should be recommended routinely as a method of improving reproductive health, & as a mans screening programme. It is cost effective & easy to perform can also be done by medico as well as trained medical co-workers.
2. Considering the high rate of cervical neoplasia in developing countries, there is a great need for an organised, well-targeted screening program. It should involve periodic gynaecological examinations along with education of women about danger signals. It will certainly bring down the high mortality due to carcinoma cervix and above all will alleviate the suffering caused by this disease.
3. As with all screening tests, cervical cytology is also limited by both false negative and false positives. To bring down false negative and false positive rates pathologists should have sufficient time to screen every slide completely and thoroughly with knowledge, concentration, skilled judgement and a relaxed mind.
4. For increasing sensitivity of pay smear it can be combined with other screening procedures like colposcopy, VIA, VILI.
5. In this study sensitivity of pap smear is 63% & Specificity is 95% with diagnostic accuracy of 86%.

ACKNOWLEDGEMENTS

We thank everyone who have helped us in the course of the study.

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