VOLUME - 10, ISSUE - 05, MAY- 2021 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Pathology

AN INSTITUTION-BASED DETECTION OF ABNORMAL CERVICAL CYTOLOGY IN PAPANICOLAOU SMEARS

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ABSTRACT

Introduction: Cancer of the cervix is the fourth most common cancer among women in the world. It accounts for 9%-13% of all cancers in females. Cervical cancer is the most common cause of death among women in developing countries.

Aim: To study the role of Pap smear in detecting premalignant and malignant lesions of cervix; and to determine the prevalence of various lesions.

Materials and Methods: A retrospective study was conducted in pathology department of Shaheed Nirmal Mahato Medical College, Dhanbad, Jharkhand from January 2017 to December 2020 on patients meeting the mentioned inclusion and exclusion criteria.

Results: A total of 3591 Pap smears were studied with respect to age group, clinical signs and symptoms, and cytology findings. Most of the patients were in age group of 31–40 (44.30%) years. The Pap smear findings revealed 35.90% as mild dysplasia (Low grade squamous intraepithelial lesion- LSIL/CIN-I) , 14.81% as moderate to severe dysplasia (High grade squamous intraepithelial lesion-HSIL/CIN-II,CIN-III), 0.29% as invasive carcinoma(suspected) besides 51% showed Negative for Intraepithelial Lesion or Malignancy (Inflammatory lesion as 44.70% and 6.30% as normal cytology. Mean age of the patients with diagnosis of LSIL was 30.3 years and for HSIL, it was 39.5 years.

Conclusion: Premalignant and malignant lesions of cervix are not uncommon in our set up and cervical cytology by Papanicolaou (Pap) smears is an effective means of screening for cervical premalignant and malignant conditions. Nonspecific inflammation and Low grade squamous intraepithelial lesion were most common finding among different age groups.

KEYWORDS : Carcinoma cervix, Papanicolaou smear, Cervical Intraepithelial Neoplasia.

INTRODUCTION:

Cervical carcinoma is the fourth most common carcinoma and is a significant cause of mortality around the world.[1] Factors like lack of resources, lack of effective screening programs, and poorly organized health system are among the important reasons for high incidence of cervical cancer in developing countries.[2] Carcinoma cervix is a curable cancer, if identified at an early stage.[3] Neoplasia of cervix begins in the transformation zone of cervix. Pap smear is a simple, safe, non-invasive, outdoor and effective method for detection of lesions of the cervix.[4] Conventional cervical smear is the widely used as cervical cancer screening test in the world.[5]

No form of cancer better documents the remarkable benefits of effective screening, early diagnosis, and curative therapy than does cancer of the cervix. The accessibility of the cervix to Pap testing and visual exam (colposcopy) as well as the slow progression from precursor lesions to invasive carcinoma (typically over the course of years) provides ample time for screening, detection, and preventive treatment.[6]

MATERIALS AND METHODS:

This study was conducted on 3591 Pap smears during the prepared from January 2017 to December 2020 on patients presenting with complaints like vaginal discharge, post-coital bleeding, foul-smelling discharge, inter-menstrual bleeding, infertility, dyspareunia and pain lower abdomen were included in this study. Those not willing to participate in the study or had a frank growth, had been treated for cervical cancer, or were pregnant were excluded from the study.

The patient was placed in lithotomy position and a sterile bivalve speculum was introduced through vagina and cervix was visualized. The longer projection of the Ayre's spatula was placed in the ectocervix near squamo-columnar junction and rotated through 360°. The sample was quickly smeared onto a labelled glass slide and fixed with 95% ethyl alcohol in a jar.

The prepared smears were then stained according to Papanicolaou's technique. The cytological interpretation of the smears was made accordingly.

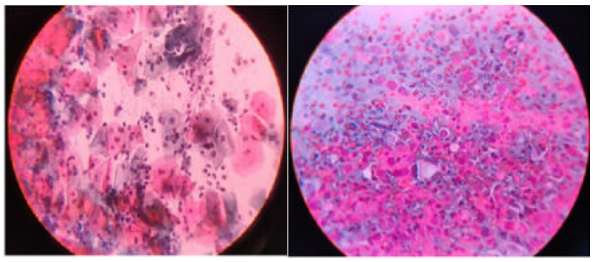
RESULTS:

During the study period, a total of 3591 cervical pap smears were reported in the pathology department for evaluation. Age of the patients ranged from 21 years to 67 years with majority (44.3%) belonging to the age group of 31-40 years (fourth decade) followed by 32.6% in third, 16.4% in fifth, 5.0% in sixth decade and 1.7% in seventh decade.

Out of the 1830 smears negative for any intra epithelial lesion or malignancy, 115 cases (6.30%) were of normal cytological findings. Inflammation was the most common diagnosis in the Pap smear 1715 cases (44.70%). Squamous intraepithelial lesion was seen in 1751 (50.71%) patients, out of which 1290 cases (35.9%) had Low grade intraepithelial lesion (LSIL) exhibiting koilocytic atypia in majority of the smears and 461 cases (14.81%) had high grade squamous intraepithelial lesion (HSIL), the smears showed severely dyskaryotic cells with irregular hyperchromatic nuclei with coarsely clumped chromatin. A total of 0.29% were those of Invasive Carcinoma (suspected) in the Pap smear.

Mean age of cases with low grade squamous intraepithelial lesion (LSIL) was 30.3 years and those with HSIL and invasive carcinoma were 39.5 years and 58 years, respectively. Most common clinical lesion seen in patients with SIL and carcinoma was erosion.

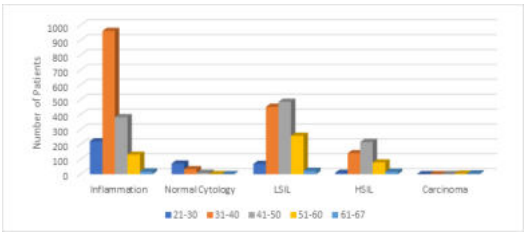
Pic 1 Pic 2



Inflammatory Lesion HSIL

Table 1

Age Group	Inflammation	Normal Cytology	LSIL	HSIL	Carcinoma
21-30	221	71	69	9	0
31-40	962	34	453	141	0
41-50	383	9	487	216	1
51-60	131	1	258	79	4
61-67	18	0	23	16	5
	1715	115	1290	461	10



DISCUSSION:

Cervical carcinoma is the fourth most frequent cancer worldwide in females. It is considered to be an ideal gynaecological malignancy for screening as it meets both test and disease criteria for screening. It has a long latent phase because of which it can be detected as identifiable and treatable premalignant lesions early.

The American Cancer Society, National Cancer Institute, American College of Obstetrics and Gynecologists recommend that all sexually active women above the age of 18 years should have annual Pap smear for three consecutive years. In case of three consecutive negative pap smears, the test can be extended for 3- 5 years.[7,8]

In our study, maximum patients were in the age group of 31 to 40 year (44.3%) which was similar to the study done by Dhakal et al (45.4%)[9] and Boicea et al (32.6%).[10]

In our study, mean age of patients with LSIL was 30.3 years, HSIL was 39.5 years and invasive carcinoma was 58 years. Elhakeem *et al*.[11] study also had a progressive increase in development of LSIL to invasive carcinoma with increasing age.

In present study, mild dysplasia (Low grade squamous intraepithelial lesion- LSIL/CIN-I) was seen in 35.90%, 14.81% as moderate to severe dysplasia (High grade squamous intraepithelial lesion-HSIL/CIN-II,CIN-III), 0.29% as invasive carcinoma(suspected) besides 51% as NILM (Inflammatory lesion - 44.70% and normal cytology - 6.30% The results are similar to those obtained by Patel *et al*.[12] and Anuradha and Sinha.[13] Few studies[14,15] have documented a lower prevalence rate for SIL and invasive carcinoma.

CONCLUSION:

Cervical cytology by Pap smear is a simple, safe and effective test to detect premalignant and malignant lesions of cervix at an early stage, and thus help in early and efficient management of the patients.

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