TO STUDY THE INTRAEPITHELIAL LESIONS OF CERVICAL SMEARS IN A TERTIARY CARE CENTRE

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Abstract

Aims and objectives:
1.To study the epidemiological factors, symptoms of women and per speculum examination findings.
2.To study the epithelial cell abnormality and compare it with other studies.
3.To compare the exfoliative cytology in detecting LSIL(Low Grade Squamous Intraepithelial Lesion), HSIL(High Grade Squamous Intraepithelial Lesion),SCC(Squamous Cell Carcinoma) and compare it with histopathological report wherever available.

Materials and Methods:
The present retrospective observational study was conducted in the department of pathology at Dr. Vasantrao Pawar Medical College, Nashik.A total of 1660 women who were more than 15 years were enrolled in the study. PAP smear was used as a method of screening for cervical cancer.
The smear was obtained using an Ayre spatula and is spread over a marked glass slide, which was placed in 95% ethyl alcohol and sent to the department of pathology for cytopathological examination.

Results:
A total of 1660 cases were studied for the age ranging from 25 to 80 years.
NILM(negative for intraepithelial lesion or malignancy) were seen in the age ranging from 20 to 65 year, Inflammatory smear from 25 to 75 year, LSIL(Low grade squamous intraepithelial lesion) from 40 to 45 year, HSIL(High grade squamous intraepithelial lesion) from 41 to 70year, ASCUS(Atypical squamous cells of undetermined significance) from 25 to 65 year, AGUS(Atypical glandular cells of undetermined significance) from 35 to 40 year, SCC(Squamous cell carcinoma) from 43 to 61 year.Most of the women with LSIL, HSIL or Carcinoma generally had three or more children. This indicates that multiparity is a significant risk factor. Most of the women in the study were Hindu. Most women belongs to Rural Communities. 3.6% women had history of oral contraceptive use. Copper T insertion was done in 6.4% of female. No female had history of retroviral disease. 55% of women were illiterate.White vaginal discharge was the most common symptom found in 37.95%, followed by abdominal pain in 26.08% and irregular cycle in 12.71%. On per speculum examination white discharge was commonly found in 35.54% followed by healthy looking cervix in 26.50% and cervical erosion in 19.87%.
Unsatisfactory sampling occurred for 8.42% , while remainder had adequate sample for reporting.
Of the total cases studied 51.35% were NILM, 47.1% were inflammatory, 1.01% were ASCUS, 0.12% were AGUS,0.06% were LSIL, 0.18% were HSIL and squamous cell carcinoma was seen in 0.18%.

Keywords:*Pap smear, Negative for intraepithelial lesion, Low grade squamous intraepithelial lesion*

1.INTRODUCTION:

Cancer of the cervix is an increasing health problem in women worldwide. The difference in incidence between developing and developed countries, where cervical cancer cases have been significantly reduced, is large. In developing countries like India, generally there are more cases of cervical cancer. The cervical cancer cases are found in developing nations due to lack of awareness and difficulty in running cytology-based screening programs.[1] More than one-fifth of all cervical cancer deaths occur in India.[2]

Cervical cancer is a preventable disease due to the long preinvasive stage. Early detection and appropriate treatment are possible if screening programme is implemented properly.[3] Early cervical epithelial changes can be identified using a Pap smear test, for detection of precancerous cervical intraepithelial neoplasia.

The developed countries has widespread screening programme. The overall sensitivity of the Pap test in detecting a high-grade squamous intraepithelial lesion (HSIL) is 70.80%.[4] A Pap screening done in association with an HPV DNA test increases the sensitivity for early detection of precancerous lesions.[5]There is a need to spread cervical cancer screening awareness by educating women and their all family members to insist visiting the hospital for a cancer screening. Pap smear-positive women need adequate treatment and regular follow-up. The aim of the present study was to evaluate women for intraepithelial lesions using the Pap smear test.

1. METHODS:

This retrospective study was carried out over 2 year at the Department of Pathology, Dr. Vasantrao Pawar Medical College, Nashik . The data was collected and analysed. Women with different complaints, including vaginal discharge, blood-mixed discharge, postcoital bleeding, postmenopausal bleeding, abdominal pain, and infertility were included in this study. Pregnant women were excluded from the study.The obstetrics and gynaecology department made the smear by reclining the patients in the lithotomy position, and a sterile bivalve speculum was then inserted into the vagina. The posterior vaginal wall was retracted posteriorly and the anterior vaginal wall anteriorly to allow proper visualization of the cervix and vaginal wall. A sample was taken from the ectocervix by rotating a wooden Ayre spatula 360°. The sample was quickly smeared onto a labeled glass slide and fixed with 95% ethyl alcohol in a jar. Later on the glass slides were sent to the Department of Pathology for cytopathological examination. Laboratory results were reported according to the new Bethesda System for Reporting Cervical Cytology 2014.

3.RESULTS:

A total of 1660 cases were studied for the age ranging from 25 to 80 years. NILM(Negative for intraepithelial lesion or malignancy) were seen in the age ranging from 20 to 65 year, Inflammatory smear from 25 to 75 year, LSIL(low grade squamous intraepithelial lesion) from 40 to 45 year, HSIL(High grade squamous intraepithelial lesion) from 41 to 70year, ASCUS(Atypical squamous cells of undetermined significance) from 25 to 65 year, AGUS(Atypical glandular cells of undetermined significance) from 35 to 40 year and SCC(Squamous cell carcinoma) from 43 to 61 year.(Table1)

Most of the women with LSIL, HSIL or Carcinoma generally had three or more children. This indicates that multiparty is a significant risk factor.(Table2)

Most women in the study were Hindu. Most women belonged to rural communities as compare to urban areas because of poor socioeconomic status.(Figure1)

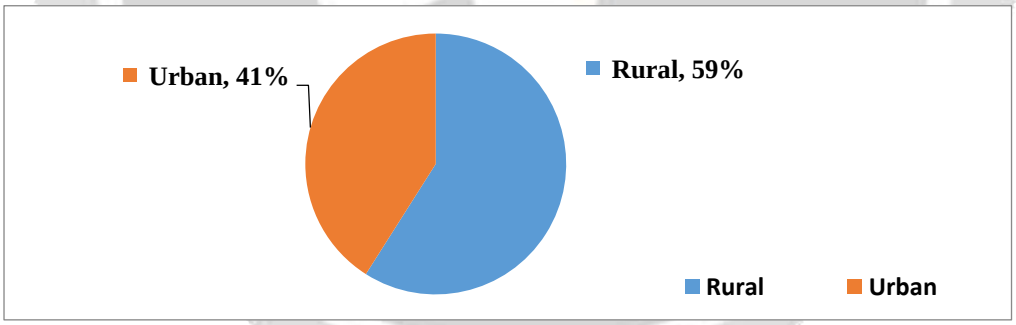
AGE	NILM (n=900)	INFLAMMATION (n=816)	AGUS (n=2)	LSIL (n=1)	HSIL (n=3)	SCC (n=3)
21-30	237	301	0	0	0	0
31-40	330	230	2	0	0	0
41-50	**161**	**120**	**0**	**1**	**1**	**1**
51-60	**110**	**114**	**0**	**0**	**1**	**0**

61-70	55	42	0	0	1	1
>71	7	7	0	0	0	1

(Table-1 : Age wise data showing various lesions**).** NILM-(Negative for intraepithelial lesion or malignancy) LSIL-(Low grade squamous intraepithelial lesion, HSIL-(High grade squamous intraepithelial lesion), ASCUS-(Atypical squamous cells of undetermined significance), AGUS-(Atypical glandular cells of undetermined significance) and SCC-(Squamous cell carcinoma)

PARITY	ASCUS (n=34)	AGUS (n=2)	LSIL (n=1)	HSIL (n=3)	CARCINOMA (n=3)
P1+	2	0	0	0	0
P2+	6	1	0	0	0
P3+	**22**	**1**	**1**	**2**	**2**
P4+	4	0	0	1	1

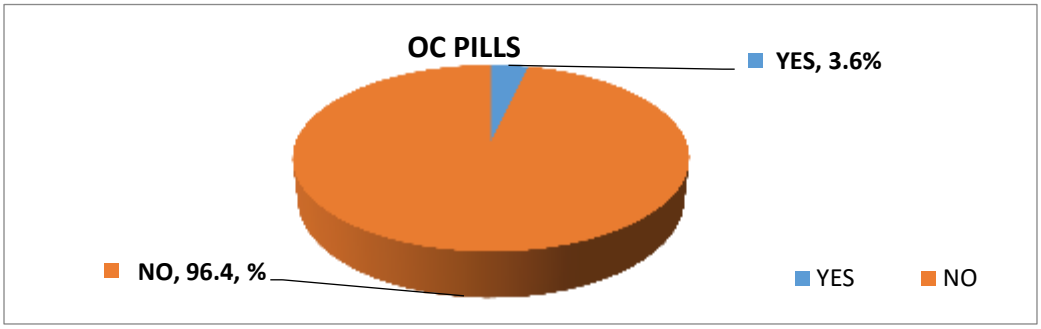
Table-2: On basis of parity. NILM-(Negative for intraepithelial lesion or malignancy) LSIL-(Low grade squamous intraepithelial lesion, HSIL-(High grade squamous intraepithelial lesion), ASCUS-(Atypical squamous cells of undetermined significance), AGUS-(Atypical glandular cells of undetermined significance) and SCC-(Squamous cell carcinoma)



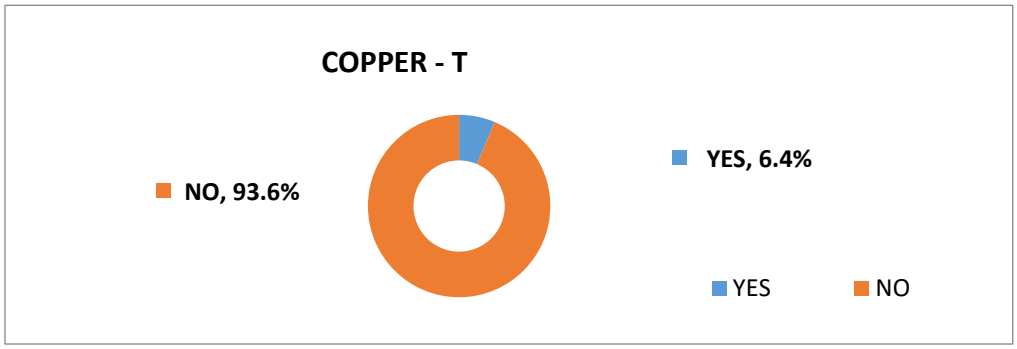
(Figure-1: Based on density of population)

3.6% women had history of oral contraceptive use, which was used as a method of contraception.(Figure2)

Copper T insertion was done in 6.4% of female.(Figure3)



(Figure-3: Oral contraceptive use by female)



(**Figure-4:**Copper-T insertion by female)

White vaginal discharge was the most common symptom found in 37.95%, followed by abdominal pain in 26.08% and irregular cycle in 12.71%.(Table3)

Symptoms	(n=1660)	%
White discharge per vaginum	**630**	**37.95**
Pain in abdomen	**433**	**26.08**
Asymptomatic	250	15.06
Irregular cycle	**211**	**12.71**
Postcoital bleeding	52	3.13
Postmenopausal bleeding	24	1.4

(**Table-3**: On the basis of patient history)

On per speculum examination white discharge was commonly found in 35.54% followed by healthy looking cervix in 26.50% and cervical erosion in 19.87%.(Table4)

Findings	(n=1660)	%
White discharge per vaginum	**590**	**35.54**
Healthy looking cervix	**440**	**26.50**
Hypertrophied cervix	210	12.65
Cervical erosion	**330**	**19.87**
Bleed on touch	90	5.44

(**Table-4**:On per speculum examination)

Of the total cases studied 51.35% were NILM(Negative for intraepithelial lesion or malignancy), 47.1% were inflammatory, 1.01% were ASCUS(Atypical squamous cells of undetermined

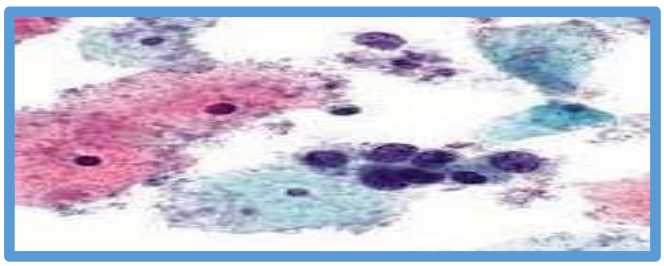
significance), 0.12% were AGUS(Atypical glandular cells of undetermined significance),0.06% were LSIL(Low grade squamous intraepithelial lesion), 0.18% were HSIL(High grade squamous intraepithelial lesion) and Squamous cell carcinoma was seen in 0.18%.(Table5)

PAP REPORT	n	%
NILM	**900**	**51.35**
INFLAMMATION	**816**	**47.1**
ASCUS	**34**	**1.01**
AGUS	**2**	**0.12**
LSIL	**1**	**0.06**
HSIL	**3**	**0.18**
Carcinoma	**3**	**0.18**

(Table-5: Illustrating the distribution of lesion in the female group studied). NILM-(Negative for intraepithelial lesion or malignancy) LSIL-(Low grade squamous intraepithelial lesion), HSIL-(High grade squamous intraepithelial lesion), ASCUS-(Atypical squamous cells of undetermined significance), AGUS-(Atypical glandular cells of undetermined significance) and SCC-(Squamous cell carcinoma)

On follow up of patient of Low Grade Squamous Intraepithelial Lesion and High Grade Squamous Intraepithelial lesion the findings were reproducible on cervical biopsy.On follow up of the patient of Squamous Cell Carcinoma one had Moderately Differentiated Carcinoma (Grade II) of vagina and vulva and other had Moderately Differentiated Large Cell Carcinoma non keratininsing type (Grade II) of cervical biopsy.(Figure5,6,7)

(Figure-5: Low grade squamous intraepithelial lesion -Few cells show nucleomegaly with irregular nuclei.)



(Figure-6: High grade squamous intraepithelial lesion -Atypical squamous cells with high N:C ratio, hyperchromatic nuclei and prominent nucleoli seen.)

(**Figure-7:** Few atypical squamous cells with high N:C ratio, pleomorphic and hyperchromatic nuclei with prominent nucleoli. Few cells were binucleated.)

4.DISCUSSION:

In the present study, most of the abnormal cytology was detected in the age group between 40 and 60 years.Gupta et al[6] reported that most of the abnormal cytology cases, i.e., 40.37%, in their study which were in the age group of 30–39 years, followed by 35.96% in the age group of 20–29 years.
LSIL was found in 0.06% (age group of 41–50 years) and HSIL in 0.18% (age group of 40–49 years). Vaghela et al[2] reported that LSIL was the most common epithelial abnormality, found in 12.4% of their individuals, followed by HSIL in 5% of the cases. For all epithelial abnormalities, the average age of the women was 49 years.White vaginal discharge was the most common complaint of the women in our study at 37.95%, similar to the rate in other studies.[7,8]Low socioeconomic status, oral contraceptive pills, multiparty and copper T are the known risk factors.
The Pap smear showed 51.35% of NILM and 47.1% of inflammation. Kulkarni and Atligan(9.10) studies reported 95% of NILM and 74.5% had inflammation indicated by the Pap smear test, respectively. A few studies[9.10] reported that women with persistent inflammation should be appropriately treated otherwise, the chance of development of cervical intraepithelial lesions increases. Our study had an unsatisfactory report rate of 9%, which might have been due to dryness of the smear or a technical error.
The 4.8% unsatisfactory report rate reported by Vaghela et al[11] might have been due to proper training of personnel and the use of the proper technique.In our study, the ASCUS(Atypical squamous cells of undetermined significance) was found in 1.01%, LSIL(Low grade squamous intraepithelial lesion) in 0.06%, and HSIL(High grade squamous intraepithelial lesion) in 0.18%. The results were comparable to study done by Verma et al [12] who found ASCUS(Atypical squamous cells of undetermined significance) in 1%, LSIL(Low grade squamous intraepithelial lesion) in 5.5%, and HSIL(High grade squamous intraepithelial lesion) in 2.5% of their screened women.
Padmini et al [13] also reported ASCUS(Atypical squamous cells of undetermined significance) (8%), LSIL(Low grade squamous intraepithelial lesion) (5%), and HSIL(High grade squamous intraepithelial lesion) (3%) in women screened with the Pap smear test.

5.CONCLUSION:

Pap smear testing is a very useful, simple, economical, and safe tool for detecting precancerous cervical epithelial lesions. It should be established as a routine screening procedure to reduce the treatment burden, morbidity, and mortality even in the current scenario. Every woman above the age of 30 years should undergo routine cervical cancer screening, even into the postmenopausal period as their priority. The Pap test has been regarded as the gold standard of cervical screening programs. When the Pap test is combined with an HPV DNA test, the sensitivity for detection of cervical pathology is increased. The community should be educated about the Pap smear test, including its goal and the required frequency of application, by widespread educational and media programs. Most women who visited an outpatient clinic are not aware of cervical cancer screening. Thus, there is a need to spread cancer screening programs to help prevent mortality and morbidity due to cervical cancer.

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