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Utility of Pap Smear in Diagnosis of Cervical Pre-Cancerous Lesions: A Two Year Study from Southern Assam

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ABSTRACT:
Backgroud: Pap smear test is a simple, sensitive , safe and cost effective method introduced by George Papinicolaou in 1940 in the diagnosis and prevention of cervical cancer. The objective of the study is to find the prevalence of various cervical lesions using pap smear method in the southern part of assam.
Material and Method: The study was carried in the Department of Pathology, Silchar Medical College and Hospital, Assam,India From 01-01-2021 to 31-12-2022 using conventional Pap smear method and reported according to the Bethesda system.
Results: A total number of 1447 smears were assessed during the study period, of which 692(47.61%) were normal, 565(39.04%) showed inflammatory changes, 19(1.31%) were ASCUS, 51(3.52%) were LSIL, 11(0.76%) were HSIL and 03(0.20%) were SCC. 109(7.53%) were unsatisfactory and were advised to repeat the test.
Conclusion: . Pap smear test should be established as a routine screening procedure in combination with an HPV-DNA test to increase the sensitivity for detection of cervical pathology. Every women above the age of 30 years should undergo routine cervical cancer screening even into the post menopausal period.More number of hospital based study with large sample size is needed to be conducted in India and other developing countries for assessing the reproductive health and prevalence of cervical pathology in women.

I. INTRODUCTION:-

Globally cervical cancer is the second most common cause of mortality and morbidity among women after breast cancer. 180% of new cases of cervical cancers are diagnosed in the developing countries.2 cervical cancers are associated with poverty and sexually transmitted infection and have a high prevalence in developing countries 1 The mainrisk factor for cervical cancer is Human Papilloma Virus(HPV)3.More than one fifth of all cervical cancer death occurs in india.4Every year 122,844 women in india are diagnosed with cervical cancer and 67,477 women die from this disease.5 Although cervical cancer is an aggressive malignancy but it is a preventable disease due to its long pre-invasive stage.6 cervical intraepithelial neoplasia (CIN)I/ low grade squamous intraepithelial lesion(LSIL) needs around 13 months to evolve to the stage of CIN II/III/ High grade squamous intraepithelial lesion(HSIL). But it takes around 10-15 years to develop to cervical cancer.7,8Early detection and appropriate treatment are possible if robust screening is implemented.6 Pap smear test is a simple, sensitive , safe and cost effective method introduced by George Papanicolaou in 1940 in the diagnosis and prevention of cervical cancer.9The smear results are reported in the Bethesda system. 10The overall sensitivity of pap test in detecting a high grade squamous intraepithelial lesion in 70.80% .11

II. MATERIALS AND METHOD:-

The cross sectional study was carried out at Silchar medical college and hospital during January 2021 to December 2022. Total 1,447 cases were screened. Women of more than 21 years of age with complaints of white discharge, itching, pain in abdomen and post coital bleeding were included in this study.Women not willing to participate,Already diagnosed with cervical cancer,Pregnant women,Menstruating females were excluded from the study.All the women in this study were informed with details about the procedure during the time of test by the investigation. Smears were taken by trained technician using modified Ayres wooden spatula 360 degree. slide was prepared , labelled and fixed in 95% ethyl alcohol (transport medium) immediately and subsequently stained by pap stain. After staining the slides were mounted with DPX(Dibutylphthalate polystyrene xylene), screened and reported by cytopathologist according to the Bethesda system.

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III. RESULTS:-

During the two year study ,1447 patients underwent cervical smear pap test. the age of the patients ranged from 21 to over 60 years.

Table 1: Demographic details of patients

	NUMBER	PERCENTAGE
AGE:-		
21-30	445	30.75
31-40	398	27.50
41-50	327	22.59
51-60	258	17.82
>60	19	1.31
MARRITAL STATUS:-		
MARRIED	1,447	100%
PARITY:-		
NULLIPAROUS	74	5.11%
PAROUS	1373	94.88%
SOCIO-ECONOMIC		
STATUS:-	897	61.99%
RURAL	550	38.00%
URBAN		

TABLE 1shows that most women belonged to rural communities and all women who took part in the pap smear test were married.

Table 2: Symptoms of women attending gynaecology OPD

SYMPTOM	NUMBER	PERCENTAGE
WHITE DISCHARGE	1247	86.17%
ITCHING	1106	76.43%
PAIN ABDOMEN	324	22.39%
IRREGULAR CYCLE	187	12.92%
POST COITAL BLEEDING	33	2.28%
SOMETHING COMING OUT OF VAGINA	19	1.31%

TABLE 2showsthat white vaginal discharge was the most common symptom (86.17%) followed by itching per vagina (76.43%) and pain abdomen (22.39%)

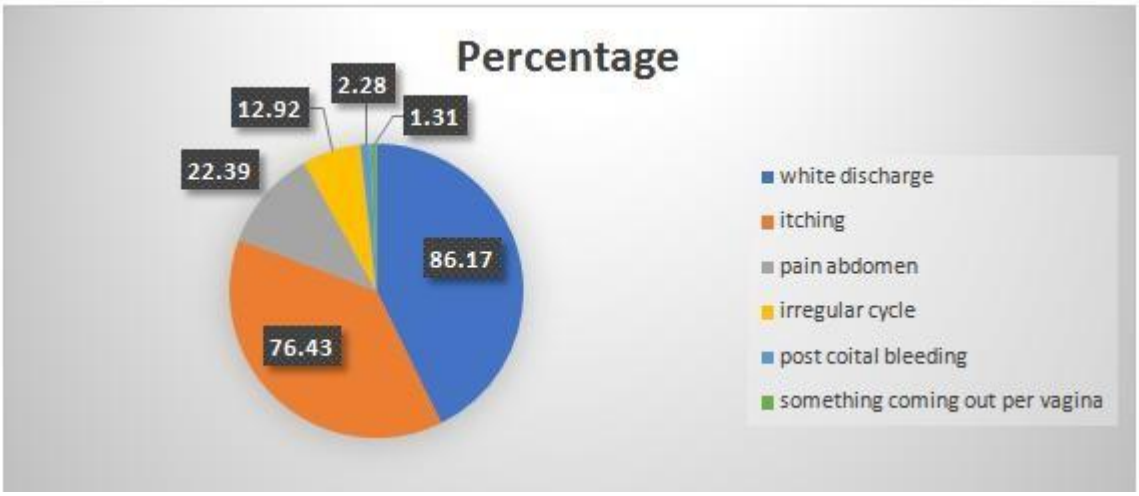

FIGURE 1: Pie chart depicting symptoms of participating patients.

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TABLE 3: PER SPECULUM EXAMINATION FINDINGS OF THE CASES

FINDING	NUMBER	PERCENTAGE
HEALTHY LOOKING VAGINA	480	33.17%
WHITE DISCHARGE PER VAGINA	1236	85.41%
HYPERTROPHIED CERVIX	148	10.22%
CERVICAL EROSION	272	18.79%
BLEED ON TOUCH	34	2.34%
UV PROLAPSE	19	1.31%

TABLE 3 shows that(33.17%) cases had healthy looking cervix . white discharge per vagina (85.41%) followed by cervical erosion (18.79%) were the two most common per speculum examination finding.

TABLE 4:- SUMMARY OF PAP SMEAR STUDIED FOR ALL THE PARTICIPANTS

	NILM *	INFLAMMATORY SMEAR	ASCUS *	LSIL *	HSIL *	SCC *	UNSATISFACTORY SAMPLE	TOTAL
21-30	206	184	09	05	00	00	41	445
31-40	188	160	07	13	00	00	30	398
41-50	151	129	02	12	06	00	27	327
51-60	135	92	01	14	04	01	09	256
>60	09	00	00	07	01	02	02	21
TOTAL NUMBER	689	565	19	51	11	03	109	1447
PERCENTAGE	47.61 %	39.04%	1.31%	3.52 %	0.76 %	0.20 %	7.53%	100%

*NILM- Negative for intraepithelial lesion or malignancy, ASCUS- Atypical squamous cells of undetermined significance, LSIL- Low squamous intraepithelial lesion, HSIL-High squamous intraepithelial lesion, SCC-Squamous cell carcinoma.

TABLE 4shows 47.61% of the participants were negative for malignancy and 39.04% had inflammation. the epithelial abnormalities ASCUS, LSIL AND HSIL were found in 1.31%, 3.52% and 0.76% of women respectively. Unsatisfactory reporting occurred for 7.53% while the remainder had adequate sample reporting.

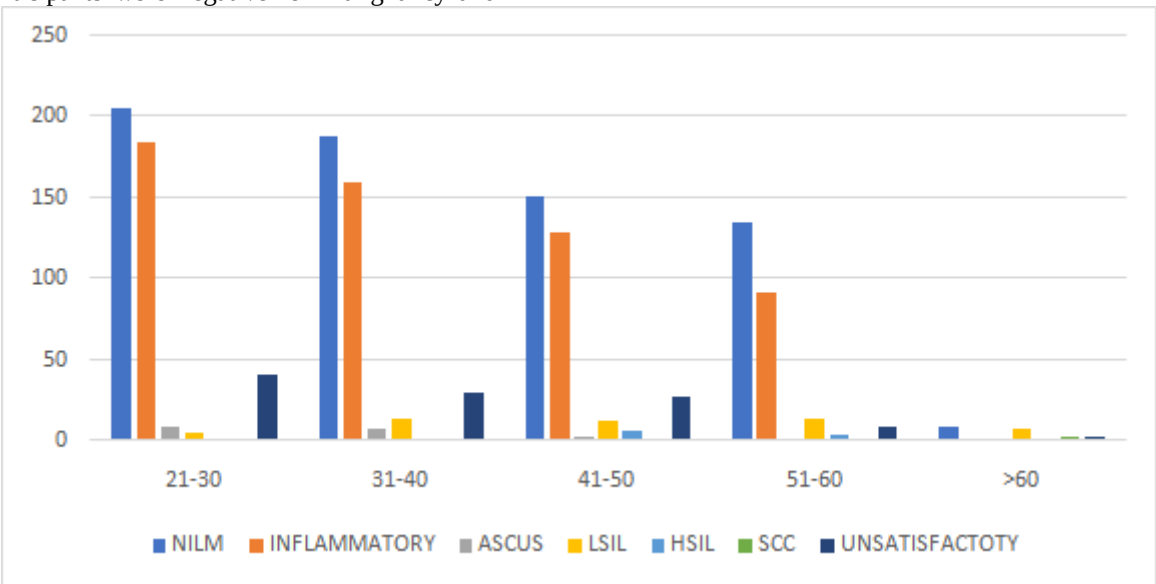

FIGURE 2: Bar diagram of showing prevalence of various lesions in different age group

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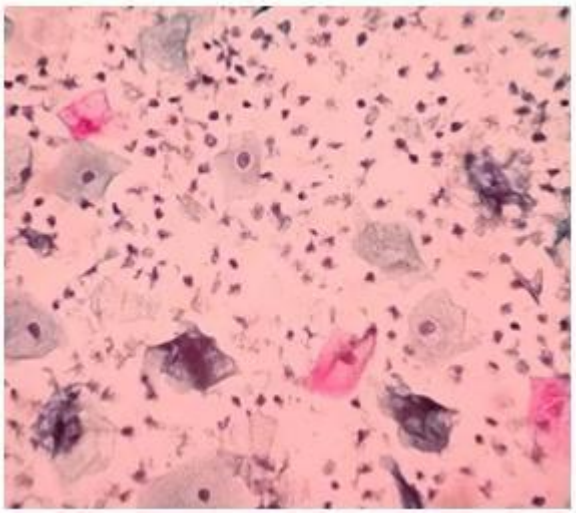

FIGURE 3: Low squamous intraepithelial lesion(LSIL)

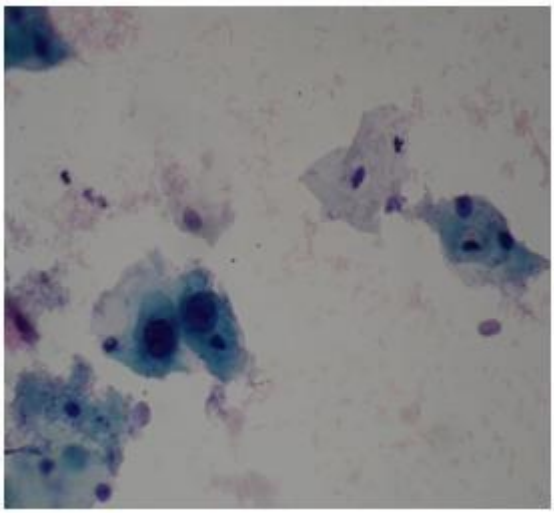

FIGURE 4: High squamous intraepithelial lesion(HSIL)

IV. DISCUSSION:-

In the present study, maximum of the abnormal cytology were detected in pateints between 40-60 years age group. LSIL and HSIL were found in 4.44% and 1.70% of the women in this age group respectively.

Gupta et al 12 reported thatin the age group of 30-39 years, most of the abnormal cytology cases (40.37%) were detected, followed by 35.96% in the age group 20-29years.in the age group 30-39 years LSIL was found to be 1.36% and HSIL was only 0.91% in the age group of 40-49 years.

Vaghela et al 13 reported that in the age group of 40-49 years LSIL was the most frequent epithelial abnormality found in 12.4% cases, followed by HSIL in 5% of the cases. In our study most prevalent symptom was white discharge (86.17%) similar to that of other studies.14, 15

Our study showed unsatisfactory report rate of 7.53% which might have been due to technical error. in Vaghela et al. study, the unsatisfactory report rate was 4.8%, comparable to our study.

In our study ASCUS was found in 1.31% of the patients, LSIL in 3.52% and HSIL in 0.76% which are comparable with the results by verma et al. 16 who found ASCUS in 1%, LSIL in 5.5% and HSIL in 2.5% of their total pateints.

Padmini et al.17 also reported ASCUS (8%), LSIL(5%) and HSIL(3%) in the total pap smear test.

In contrast to our study Saha et al. 18reported ASCUS 5.92% to be the most common cytological abnormality.

Higher number of LSIL(8.6%) and HSIL(3.8%) were found in a study by Nayani and Hendre.19

For cervical cancer there are various screening test like pap smear, liquid pap cytology anatomical cervical screening techniques, visual inspection of cervix after Lugol's Iodine ans Acetic Acid application, speculoscopy , cervicography. out of all these exfoliative cytology has been regarded as the gold standard for cervical screening programmes.20

The role of HPV in development of cervical cancer is proved beyond doubt. If PAP smear is associated with HPV-DNA testing then we can increase the sensitivity.

The American cancer society recommends that all women should begin cervical cancer screening after 3 years of beginning coitus. It is also recommended every 1-2 years, women who have crossed the age of 30 years and have had 3 consecutive normal PAP results may be screened after 2-3 years.

WHO (World health organization) 1992 recommends screening every women once in her lifetime at 40 years or before 45 years age.21

V. CONCLUSION:-

Indeveloping countries like India with predominant rural population having low socio-economic status, marriage at an early age, poor medical facility and lack of awareness, the incidence of cervical cancer is quite higher.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 in combination with an HPV-DNA test to increase the sensitivity for detection of cervical pathology. Every women above the age of 30 years should undergo routine cervical cancer screening even into the post menopausal period.

More number of hospital based study with large sample size is needed to be conducted in India and other developing countries for assessing the reproductive health and prevalence of cervical pathology in women.

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