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Study of Cervical Smear in Premenopausal and Postmenopausal Women in a Tertiary Care Hospital of Uttar Pradesh.

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Abstract: *Cancer cervix is the commonest malignancy in developing countries and is second most common cancer in women worldwide. The best way to detect cervical cancer is by regular Papanicolaou smear (Pap).This study was carried out in 380 cases in the department of pathology in collaboration with department of obstetric and gynaecology. All the cases above 18 years of age were included in the study. Pregnant women, Menstruating women, Women with obvious invasive cancer at the time of clinical examination were excluded from the study .Detailed clinical history and pelvic examination of the patients was done. Cervical scrape smears were taken and stained by Papanicolaou stain.The smears were classified according to Bethesda system, 2014.Out of 380 cases, 52 cases were found to be unsatisfactory. 328 cases were found to be satisfactory which were further evaluated. Age group varied from 18 to 70 years, with maximum number in the age group 30-39 years.Maximum smears were inflammatory, of which non specific inflammation was commonest. In the specific inflammatory cases, bacterial vaginosis was followed by candida and trichomonas. Epithelial abnormalities were seen in 12 cases. These were ASC-US, LSIL, HSIL and Squamous Cell Carcinoma. LSIL was observed in premenopausal females and HSIL in postmenopausal.A cervical smear examination is a good tool for screening females. It can detect patients in precancerous stage. Treatment of patients in early precancerous stage can reduce cervical cancer before full development.*

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I. Introduction

Cancer cervix is although on decline yet it is the commonest cause of death in developing countries.[(1)]Premalignant lesions precede invasive disease by upto 10 years which can be picked upon Pap smear examination and treated.[(2)] Human Papilloma Virus (HPV), a sexually transmitted oncogenic virus plays a major role in development of cervical squamous intraepithelial lesion (SIL) and cervical carcinoma.[(3)] A number of epidemiological factors play part in causation of cervical cancer, of which Human Papilloma Virus play an important role.HPV affects more commonly to pre-menopausal women. In addition to HPV infection, other risk factors are smoking, high parity, absence of male circumcision, prolonged use of oral ctraceptives (OCPs), immune suppression and co-infection with Human Immunodeficiency Virus, Herpes Simplex Virus, Chlamydia Trachomatis.[(4)]HPV 16 and 18 (high risk) plays major role in development of HSIL, carcinoma cervix and HPV 6 and 11 (low risk) for LSIL.

Burden of disease can be reduced by vaccinating females for HPV, use of cervical cytology screening (Pap Smear examination) and safe sexual practice.[(5)] The best way to detect cervical cancer is by regular Pap smear examination. But correlation with corresponding colposcopic directed biopsy is the gold standard. In resource poor country, like India Pap test is very cost effective and easily available.The aim of our study was to screen females for presence of cervical dysplasia and the risk factors associated with it.

II. Material And Method

This study was carried out in 380 cases in the department of pathology in collaboration with department of obstetric and gynaecology in a tertiary hospital of Uttar Pradesh. All the cases above 18 years of age were included in the study. Pregnant women, Menstruating women, Women with obvious invasive cancer at the time of clinical examination were excluded from the study .

Detailed clinical history presenting complaints (like per vaginum discharge, PV bleeding, lower abdominal pain and backache) and pelvic examination of the patients was done. On the day of taking Pap Smear care was taken that local douche, antiseptic cream and no local internal examination was done. The patient was

placed in dorsal lithotomy position. After proper positioning, gently a sterile Cusco's bivalve speculum was introduced through vagina and cervix was visualized. The longer projection of Ayre's spatula was placed in the cervix near squamocolumnar junction and rotated through 360^0.Cervical scrape smears were taken and stained by Papanicolaou stain. The cellular material was quickly and gently smeared on a clean glass slide. The glass slide was put into Coplin jar containing 95% ethyl alcohol as a fixative and stained by Pap technique.

The smears were classified according to Bethesda system 2014.

Statistical analysis-It was done by descriptive statistics and p value was calculated. p value was considered significant when it was < 0.05.

III. Results

A total of 380 cases were enrolled for the screening of cervical dysplasia.According to the Bethesda system 52 cases were unsatisfactory. Remaining 328 cases were further evaluated.Age range of these females was from 18-70 years with maximum number in the age group of 30-39 years (n=132,40.24%) Table1. Majority of subjects were aged between 20-29 years (n=277,84.64%) at the time of first coitus TableI. Majority of patients screened were para 3-4 (n=169,51.5%) Table no.1.

Table no.1: Age, age at first coitus and parity distribution of screened subjects

Most of the patients were non smokers (n=323/328,98.48%). Hindus were more than Muslim with

AGE GROUP	NO OF SUBJECTS	PERCENTAGE
18-19 YEARS	13	3.90
20-29 YEARS	128	39.10
30-39 YEARS	132	40.24
40-49 YEARS	37	11.28
>50 YEARS	18	5.48
AGE AT FIRST COITUS	NO. OF SUBJECTS	PERCENTAGE
16-19	43	13.00
20-29	277	84.64
>30	8	2.40
PARITY	NO. OF SUBJECTS	PERCENTAGE
NULLIPAROUS	10	3.1
1-2	113	34.4
3-4	169	51.5
>4	36	11.0
TOTAL	328	100

Hindu:Muslim ratio of 2.58:1. Majority of patients were in lower socioeconomic status (195,59.45%). More than half of the patients did not use contraceptive method. Amongst contraceptive methods, commonest method was barrier, while oral pills were the least commonly used Table no. 2.

Table no. 2: Distribution of subjects according to contraceptive usage

METHOD	NO. OF SUBJECTS	PERCENTAGE
None	178	54.27
Barrier	66	20.13
Ligation	43	13.10
IUCD	37	11.28
ORAL	04	1.22
TOTAL	328	100

Pain in lower abdomen and back, discharge P/V were found to be the most common presenting symptoms Table no. 3.

Table no. 3: Distribution of subjects according to presenting symptoms

PRESENTING SYMPTOMS	NO. OF SUBJECTS	PERCENTAGE
DISCHARGE PER VAGINA	118	36.0
PAIN LOWER ABDOMEN AND BACK	180	54.87
PRURITIS VULVA	10	3.0
POST COITAL BLEEDING PER VAGINA	09	2.74
INTERMENSTRUAL BLEEDING PER VAGINA	14	4.26
MENORRHAGIA	26	7.90
POST MENOPAUSAL BLEEDING	02	0.60
DYSURIA	27	8.23
DYSPAREUNIA	13	3.96
SOMETHING COMING OUT OF VAGINA	04	1.21
PRIMARY INFERTILITY	15	4.57

Cervix was healthy, followed by cervicitis on PS examination. Inflammatory smear was the commonest cytological finding. Pap smear was considered positive if it showed LSIL/HSIL or worse and negative if reported as normal/ inflammatory/ ASC-US/ASC-H. In this study inflammatory smears were 296, 90.24% followed by LSIL/HSIL/SCC Table no. 4.

Table no. 4: Result of cytological examination

CYTOLOGICAL EXAMINATION FINDINGS	NO. OF SUBJECTS (N=328)	PERCENTAGE
NORMAL	20	6.09
INFLAMMATORY	296	90.24
ASC-US	02	0.60
ASC-H	00	00
LSIL	05	1.52
HSIL	03	0.91
AGUS	00	00
SCC	02	0.6

LSIL was seen a decade early than HSIL and SCC. LSIL was seen in 30-39 year of age and HSIL and SCC in 40-49 years and >50 years respectively Table no. 5

Table no. 5: Association of dysplasia cases with age

AGE GROUP	TOTAL CASES(N=328)		DYSPLASIA CASES(N=8)				SCC	
			LSIL (N=5)		HSIL (N=3)		(N=2)	
	NO.	%	NO.	% POSITIVITY	NO.	% POSITIVITY	NO.	% POSITIVITY
18-19	13	04	0	0	0	0	0	0
20-29	128	39.2	0	0	0	0	0	0
30-39	132	39.84	**4**	3.0	0	0	0	0
40-49	37	11.36	1	2.70	**2**	5.40	**1**	2.70
>50	18	5.6	0	0	1	5.50	**1**	5.50

It was observed that association of dysplasia with age at the first coitus was found to be significant (p value <0.001). Prevalence of dysplasia was higher in subjects with parity more than 4 (p<0.001) Table no. 6

Table no. 6: Association of dysplasia cases with age at first coitus and parity

AGE AT FIRST COITUS	TOTAL CASES(N=328)		DYSPLASIA CASES(N=8)				SCC	
			LSIL (N=5)		HSIL (N=3)		(N=2)	
	NO.	%	NO.	% POSITIVITY	NO.	% POSITIVITY	NO.	% POSITIVITY
16-19	43	13	1	2.32	1	4.32	**2**	1.23
20-29	277	84.64	**4**	1.44	**2**	0.38	0	0
>30	08	2.4	0	0	0	0	0	0
PARITY	TOTAL CASES(N=328)		DYSPLASIA CASES(N=8)				SCC	
			LSIL (N=5)		HSIL (N=3)			
	NO.	%	NO.		NO.	%	NO.	
NULLIPAROUS	10	3.1	0	2.5	0	0	0	0
1-2	113	34.4	1	0.88	0	0	0	0
3-4	169	51.5	**3**	1.77	1	0.99	0	0
>4	36	11.0	1	2.77	**2**	5.55	**2**	5.55

IV. Discussion

The percentage of smears reported as unsatisfactory for evaluation in various studies was from 0.5% to 18.94%.[6-9] in our study the percentage of unsatisfactory smear was 13.68% which is almost similar to the study of Mahadiket.al.(2017)[8].

The prevalence of cervical epithelial abnormalities is variable in different parts of the world. In U.S. the prevalence rate of dysplasia varies from 2.3-6.6%.[10] In Middle East 1.65%-7.9%[11], in Israel 0.98-4.41% [12] and in India 1.39-7.8%.[13] In our study epithelial abnormalities were 3.65% which is in concordance with Gupta et.al. (2013) who reported it to be 3.23%.[9] The reason for these variation can be due to difference in population studied, prevalence of different risk factors at different places and criteria employed for diagnosis.

In present study LSIL was more common in age group 30-39 years and HSIL in 40-49 years. Dysplasia was more common in females who had first coitus between 20-29 years and parity 3.Similar findings have been reported in the past by Reddy et.al.[6] and Mahadik et. al.(2017)[8]

A number of workers in the past found smoking as one of the major risk factor.[14] In the present study the number of smoker females were very less so it is very difficult to comment on association of dysplasia with smoking.

The role of circumcision has been emphasized by large number of workers in the past who reported carcinoma cervix to be more common in hindus than in any other religion.[15]In this study also dysplasia was more common in hindus although the number of cases were too less.

It has been reported earlier that carcinoma is more common in low socio economic class in comparison to upper class and this has been attributed to over-crowding, in adequate food and poor hygiene, lack of knowledge about role of screening[9]. In this study also dysplasia as well as carcinoma were more common in females with lower socio economic status.

In a recent study from South India reported NILM inflammatory smears to be most common finding (96.09%)[16] In the present study it was 90.24% which is very close to them. This was followed by normal smears. Sujatha et.al(2017). also reported normal smears to be second most common[17]. In the specific infection bacterial vaginosis was followed by candida in the large number of workers who found fungal infections to be more common in comparison to bacterial vaginosis[18,19].

Few cases of dysplasia (LSIL) were found in inflammatory smear and in smear showing Trichomonas. These cases should be treated for infection and Pap smear repeated after completion of treatment.Reduction in cervical cancer incidence and mortality has been achieved by Papanicolaou (Pap) smear based screening programmes. However it is difficult to detect precursor lesions of cervical cancers, and there are chances of reporting false negative results. It requires repeated screening at short intervals[20].This has been overcome by HPV testing coupled with cervical screening.

V. Conclusion

In developed countries there are well organized screening programmes which has reduced the incidence and mortality rates of cervix carcinoma where as in developing country like India the scenario is different. Females with inflammatory smears, atypical squamous cells, should be closely followed. Cervical dysplasia was also seen in apparently healthy cervix and even in women who were asymptomatic. So all the females after the age of 30 years should be screened. But in resource poor country like India conventional Pap smear still remains the good tool to find precursor lesions of cervical cancer.

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