

Role of Pap Smear In Studying Prevalence of Epithelial Cell Lesions of Cervix In Different Age Groups In Tertiary Care Hospital.

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Abstract

Introduction: Cervical cancer is the leading cause of death in women in the developing countries. It is readily preventable, curable and can be diagnosed at pre-invasive stage with adequate and repetitive cytological screening with pap smears.

Aims And Objectives: To study the role of pap smear in studying prevalence of inflammatory, pre-malignant and malignant lesions of cervix in different age groups.

Materials and Methods: This study was conducted during the period of one year in which 1103 patients in age group 16-82 years with various complaints were screened. Smears obtained were fixed in 95% ethyl alcohol and stained with pap stain. Slides were reported according to Bethesda system.

Results: Out of 1103 patients, 9 were excluded from study because of inadequate smears due to obscuring blood/inflammation, refusal by patient or uncooperative patients. Out of 1094 cases, 1024 patients(93.6%) were Negative for Intraepithelial Lesion or Malignancy (NILM), 38 cases(3.47%) showed Low Grade Squamous Intraepithelial Lesion (LSIL), 9 cases(0.82%) showed High Grade Squamous Intraepithelial Lesion (HSIL), 8 cases(0.73%) showed Atypical Squamous Cells of

Undetermined Significance (ASCUS) and 15 cases(1.37%) were of Squamous cell carcinoma cervix. The most frequent epithelial cell abnormality was LSIL (38 cases, 1.37%) and most prevalent in the age group 41-60 years. 326 cases showed inflammatory changes due to bacterial vaginosis, candida and trichomonas.

Conclusion: Pap smear is an effective and inexpensive screening tool for early detection of cytological abnormalities of the cervix.

Keywords: PAP Smear, Bethesda, Cervical Cancer

Introduction

Cervical cancer ranks as the 2nd most common cause of female cancer in women aged 15 to 44 years in India. (5).

Globally; 5,00,000 new cases of cervical cancer are diagnosed annually and 2,80,000 women die of the disease. In India, 126000 new cases of cervical cancer occur annually. (3).

In the past few decades, the mortality due to cervical cancer has reduced and the credit goes to pap smear screening which is rapid, sensitive, simple and cost effective screening tool for detection of premalignant and malignant lesions. Besides this, this test also aids in the detection of infectious, inflammatory conditions, radiation

or chemotherapy induced changes, hormone induced changes and age related atrophic changes. Hence, women need to be educated about the importance of pap smear screening regularly as cervical cancer is preventable if its detected at an early stage.

Our study was aimed to detect the prevalence of epithelial cell abnormalities and their pattern in different age groups by conventional pap smear method in tertiary care hospital.

Materials and Methods

This retrospective study was carried out at RNT Medical College and Hospital during the time period of January 2018 to December 2018. Those patients who were symptomatic were referred by gynaecologists to the cytopathology department for pap smear screening. Total 1103 patients were screened in the age range of 16-80 years. History and symptoms along with parity were recorded. Most of the females presented with abdominal/back pain, vaginal discharge, bleeding per vaginum or something coming out per vaginum. Pregnant and menstruating females were excluded from our study. Informed consent was obtained from each female after explaining the whole procedure of pap smear.

Smears were taken by using modified Ayres wooden spatula. Slides were prepared, labeled, fixed in 95% ethyl alcohol immediately and subsequently stained by Pap stain. After staining, slides were reported according to The 2001 Bethesda system.

Results

Out of 1103 patients, 9 were excluded from study because of inadequate smears due to obscuring blood/inflammation, prolapse of uterus, refusal by patient or uncooperative patients. In majority of cases (1025 cases), no gross pathology was seen on per speculum examination. Cervical erosion in reproductive age group

(30 cases), bleeding on touching the speculum (15 cases), uterine prolapse in pre and post menopausal women were noted (24 cases).

Out of 1094 cases, 1024 patients (93.6%) were Negative for Intraepithelial Lesion or Malignancy (NILM); 38 cases (3.47%) showed Low Grade Squamous Intraepithelial Lesion (LSIL); 9 cases (0.82%) showed High Grade Squamous Intraepithelial Lesion (HSIL); 8 cases (0.73%) showed Atypical Squamous Cells of Undetermined Significance (ASCUS) ;15 cases (1.37%) were of Squamous cell carcinoma cervix.

NILM included non-specific inflammation , atrophy, trichomoniasis, candidal infection, bacterial vaginosis and herpes simplex viral infection. The most frequent epithelial cell abnormality was LSIL (38 cases, 3.47%) and most prevalent in the age group 41-60 years. Most of epithelial cell abnormalities were detected in age group 31-40 years (380 cases, 34.73%).Carcinoma cervix was prevalent among age group 41-50 years. 326 cases showed inflammatory changes due to bacterial vaginosis, candida and trichomonas.

Table no.1- Distribution of epithelial cell abnormalities with respect to age group

Age Group	NILM		ASCUS		LSIL		HSIL		CA CX	
	No.	%	No.	%	No.	%	No.	%	No.	%
≤20	30	2.93		0.00		0.00		0.00		0.00
21-30	335	32.71		0.00		0.00		0.00		0.00
31-40	375	36.62	3	37.50	2	5.26		0.00		0.00
41-50	165	16.11	3	37.50	14	36.84	3	33.33	7	46.6
51-60	77	7.52	2	25.00	13	34.21	3	33.33	4	26.67
61-70	34	3.32		0.00	8	21.05	2	22.22	3	20.00
71-80	6	0.59		0.00		0.00	1	11.11	1	6.67
>80	2	0.20		0.00	1	2.63		0.00		0.00
Total	1024	100%	8	100%	38	100%	9	100%	15	100%

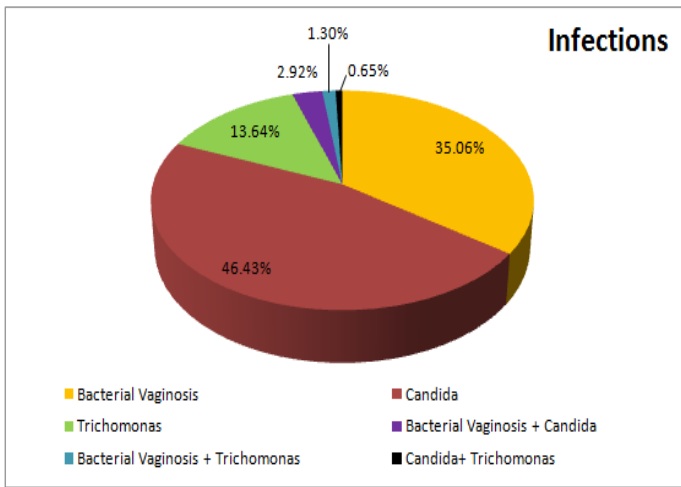


Figure no. 1- Distribution of infections

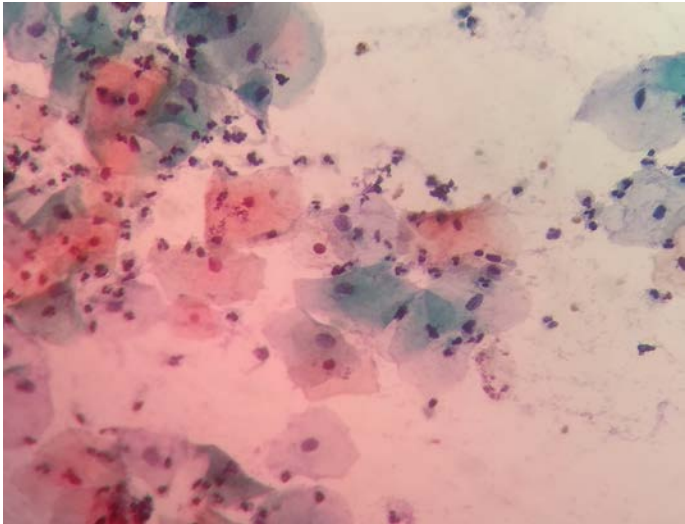


Figure no. 4- NILM

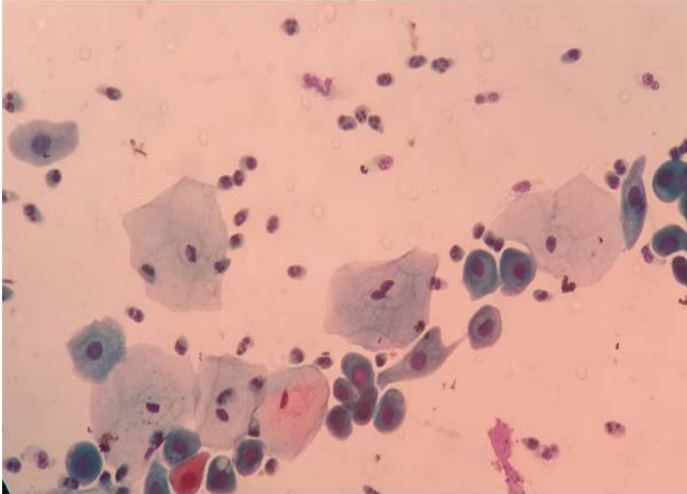


Figure no. 2- ASCUS

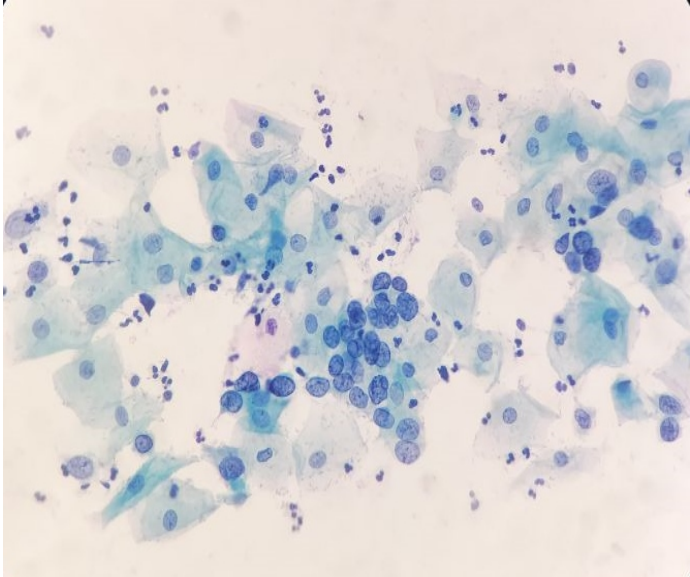


Figure no. 5- LSIL

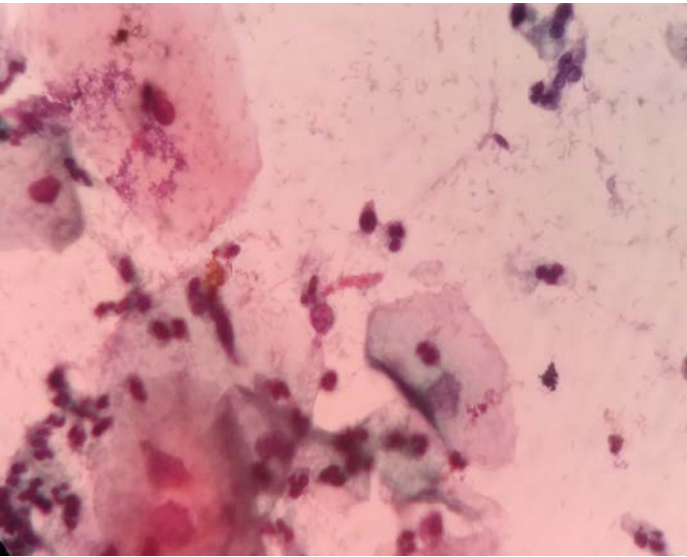


Figure no. 3- Candida

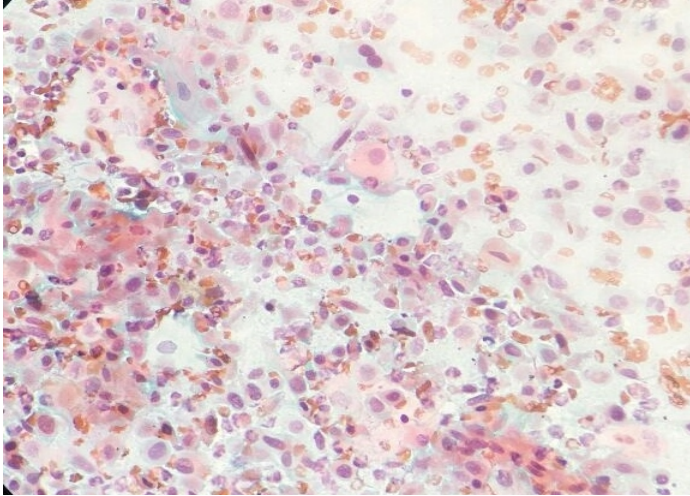


Figure no. 6- SCC Tadpole cells

Discussion

Its a well known fact that pap smear has excellent specificity (95%) and moderate sensitivity (44-74%) for early detection of pre-invasive and invasive lesions of the cervix.

Table no. 2- Comparison of various studies with the present study with respect to epithelial cell abnormalities

	Mean age (years)	NILM (% cases)	ASCUS (% cases)	LSIL (% cases)	HSIL (% Cases)	SCC (% Cases)
Patel M M et al(2011)	31-40	57.48	4.12	0.1	0.1	0.7
Vaghela B K et al(2014)	30-39	53	2.75	15	6	3
Bamanikar S A et al(2014)	31-40	88.93	2.32	1.96	0.36	0.54
Umarani M K et al(2014)	31-40	82	4.87	1.62	0.64	0.28
Nair G G et al(2016)	51-60	94.87	0.15	1.58	0.49	0.20
Rawat K et al(2016)	30-40	54.07	1.3	0.79	0.45	0.17
Nandwani et al(2016)	31-40	86.88	3.16	2.59	2.77	3.48
Shivakumar S U et al(2017)	31-40	73.17	3	4.92	2.55	1.49
Shashidhar M R et al(2017)	31-40	95	1.62	0.64	0.00	0.64
Present study(2017)	41-60	93.6	0.73	3.47	0.82	1.37

Majority of females in our study presented with NILM; even the post menopausal age group also presented with NILM. The studies as depicted in above table show the same finding. Among the epithelial cell abnormalities; LSIL was most commonly observed followed by carcinoma cervix and our study corroborated with the studies shown in table no.2.

Pap test not only plays a crucial role in detection of cervical cancer and its precursor lesions, but also aids in the diagnosis of infective and inflammatory conditions including the identification of causative organism, hormone related benign epithelial changes and changes due to therapeutic agents (3).

The population residing in areas adjoining Udaipur belong to low socio-economic status, have low literacy rate and poor hygienic conditions which are risk factors for cervical carcinoma. Moreover, symptomatic women who presented to gynae department were screened for study which was limitation of our study as it was not a true reflection of incidence and prevalence of epithelial abnormalities of the population.

For every epithelial abnormality; colposcopy, visual inspection under acetone (VIA), biopsy was advised but follow up couldn't be done as majority women didn't show up for the same.

Conclusion

In our study, it was concluded that premalignant and malignant lesions of cervix are common in reproductive age. Pap smear is an inexpensive and affordable tool for cervical cancer screening as its applicable to large masses but proper counselling and awareness is needed to encourage women for regular screening. Pap smear screening should be started at age 21 years or 3 years after start of sexual activity or whichever is earlier. This must be continued even in the post menopausal age group also. Moreover, human papilloma virus (HPV) infection which is risk factor for cervical cancer can be prevented through vaccines and women should be encouraged about these vaccines.

Conflicts of Interest: This study has no conflict of interest to declare by any author.

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