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A Study on Pattern of Cervical Pap Smear Abnormalities with Respect to Age

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Abstract
Aims and Objective: *Worldwide, cervical cancer is the 2nd most common cancer in women. 80% of all the cases of cervical cancer occur in the developing countries. Cervicovaginal cytology (Pap) is an effective means of screening for cervical lesions. The aim is to study the spectrum of squamous epithelial lesions and their prevalence among different age groups. cervical cancer is the second most common cancer among the women in the developing countries (India). This is a Prospective, hospital based study done in a hospital at NMCH, Patna and carried for a period of two year.*
Material and Methods: *The patients presenting with complaints of vaginal discharge, backache, pain hypogastrium, dyspareunia and post coital bleeding were included in the study. Unsatisfactory smears, age <18 yrs, pregnancy, women who underwent hysterectomy, women with vaginal bleeding were excluded. The smears were reported according to the 2001 Bethesda system.*
Result: *Out of 220 cases, 240(91.95%) were reported as Negative for intraepithelial lesion and 21(8.04%) cases were found to be abnormal pap smears - 15(5.74%) cases of LSIL, 2(0.76%) cases of HSIL and 4(1.53%) cases of ASCUS . Their prevalence among different age groups was - 161(61.68%) in reproductive age group, 55(21%) in perimenopausal age group and 45(17.24%) in postmenopausal age group. Abnormal cervical lesions can be diagnosed early by Pap smear examination. The prevalence of the abnormal smears was found to be more among perimenopausal age group followed by postmenopausal and then the reproductive age groups.*
Conclusion: *Abnormal cervical lesions are not uncommon and it can diagnose early by Pap smear examination*
Keywords: *Cervicovaginal cytology, Papanicolaou stain, Pap smear, Abnormal cervical lesions, Screening.*

Introduction
World wide data shows that cervical cancer is the second most common cancer in women, comprising of approximately 12% of all cancers, and being the most common in developing countries[1](India). Cervical intraepithelial neoplasia and cervical cancer remains important health problems worldwide with high mortality and morbidity for advanced lesions[2]. According to Bethesda system, preinvasive cervical lesions are

classified into 2 groups: high grade squamous intraepithelial lesion and low grade squamous intraepithelial lesions[3]. The carcinoma cervix can be prevented by intercepting at the preinvasive stage[4]. Papanicolaou stained cervical smears (Pap smear) is a simple and highly effective procedure for the detection of premalignant cervical lesions[5,6]. The Pap test is a cytological test designed to detect abnormal cervical cells from cervical transformation zone[7]. A strong relation is observed between initiating of screening and reduction in mortality from cancer of cervix[8,9].

Aims and Objectives

- To study the spectrum of epithelial lesions in cervical cytology smears.
- To study the distribution of epithelial lesions in different age groups.

Materials and Methods

Inclusion Criteria: patients presenting with complaints of vaginal discharge, backache, pain hypogastrium, dyspareunia and post-coital bleeding.

Exclusion Criteria: Age< 21 yrs, pregnancy, women who underwent hysterectomy, women with vaginal bleeding. Distribution of patient into groups, Reproductive (<40 yrs) Perimenopausal (40-50 yrs) Postmenopausal (>50 yrs)[10].

Method of Sample Collection: smears were collected by an Ayre's spatula after exposing the cervix by Cusco's speculum. The samples collected were transferred to glass slides and fixed in 95% ethanol. The slides were then sent to pathology department for pap stain.

Smear Adequacy: Two clusters of well-preserved endocervical glandular and/ or squamous metaplastic cells, with each cluster composed of at least five cells[11]. Reporting: The Bethesda system 2001 was used for reporting the findings of cervical cytology

Result

In the study 220 cases were studied, 17(7.72%) cases were found to be abnormal pap smears in which 11(5%) cases were LSIL (low grade squamous intraepithelial lesion), 3(1.36%) cases were HSIL (high grade squamous intraepithelial lesion) and 3(1.36%) cases ASCUS (atypical squamous cells of undetermined significance). Out of 220 cases 203(92.27%) were reported as Negative for intraepithelial lesion. The different age groups included in the study are reproductive age group (<40) yrs, perimenopausal age group (40-50 yrs) and post-menopausal age group (>50 yrs).Out of 144(65.44%) in the reproductive age group 2(0.90%) cases had LSIL, 1(0.45%) cases ASCUS and 141(97.90%) were reported as negative for intraepithelial lesion. Among 39(17.72%) case in perimenopausal age group, 4(10.25%) cases had LSIL, 1(2.56%) case HSIL, 2(5.12%) cases ASCUS and 32(82.05%) cases were reported as negative for intraepithelial lesion. Of the total of 37(16.81%) cases in post-menopausal age group, 5(13.51%) cases LSIL, 2(5.41%) case HSIL and 30(81.08%) reported as negative for intraepithelial lesion (Table)

Table shows distribution of lesions in various age groups

Result of the smear.	Reproductive age group (<40 yrs).		Perimenopausal age group (40-50 yrs).		Postmenopausal age group (>50 yrs).
	No of Cases	%	No of Cases	%	No of Cases
Negative for Intraepithelial lesion	141	97.92	32	82.05	30
LSIL	2	1.39	4	10.26	5
HSIL	-	-	1	2.56	2
ASCUS	1	0.69	2	5.13	-
Total	144(65.45%)	100.00	39(17.72%)	100.00	37(16.81%)

Discussion

Now a days, cervical screening is necessary because the cervical precancerous lesions do not present with obvious signs and symptoms [12].The important predisposing factors implicated are sexual intercourse and infection by human papilloma virus transmitted by sexual mode. About 15% of the cancer are not associated with HPV, occurs due to other pathways of cancer development including host gene mutation[14]. According to study done in India, by J Giftson Senapathy J et al, there is an estimated annual global incidence of 5, 00,000 cancers, in that India contributes 1, 00,000, ie, one fifth of the world burden (Shanta, 2003)[12]. According to national cancer registry program of India, cancers of uterus and breast are the leading malignancies in India hence there should be an effective mass screening program aimed at specific age group for detecting precancerous condition before they progress to invasive cancers[15]. The incidence of cervical cancer has decreased more than 50% in the past 30years because of wide spread screening with cervical cytology[13].

The present study is compared with Ghazal Aswad et al.; in 2006[16], Ranabhat SK et al.; in 2011[13] and Dhiraj B Nikumbh et al.; in 2011[17]. Comparing with Khattack et al.; in 2003[19], 8 cases (2.67%) were having cervical epithelial lesion and 95 % were normal. Magdy et al.;[18], reported 9.29 % as abnormal smears . According to the study by Ranabhat SK et al.; in 2011[18], 80% of the abnormal lesions were found in the age group above 40 years as about 80% of the patients above 30 years[13]. A study by Vaidya A et al.; in Kathmandu shows the maximum numbers of cases were in the age group 45-49 years[19]. A previous study by Mandakini et al.; in 2011[15] shows that the incidence of ASCUS was found to be highest in the age group of 31-50 years [15] .In Saudi Arabia, the study reports that the mean age revealed for ASCUS (45 years), LSIL (55 years), and HSIL (35.8 years)[18]. The previous study by Mandakini, Ranabhat and Vaidya A were correlates with our study.

The American cancer society recommends that all women should begin cervical cancer screening after 3 years of beginning of coitus. It is also recommended that 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- years[15]. Pap smear cytology should be initiated in all women at the age of 21 years[16].

Conclusion

Out of 220cases, 240(91.95%) were reported as Negative for intraepithelial lesion and 21(8.04%) cases were found to be abnormal pap smears - 15(5.74%) cases of LSIL, 2(0.76%) cases of HSIL and 4(1.53%) cases of ASCUS. The Pap smear should be as routine test for all sexually active, young females, for the early detection of cervical precancerous conditions. The Pap smear is valuable, inexpensive, uncomplicated, non-invasive screening tool for detection of premalignant and malignant lesions of cervix. Annual screening for three years should be performed, once a negative test is reported in women of 30 to 64 years age group.

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