Cervical Pap Smear in Screening: A Retrospective Study

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Abstract

Background: Cancer of the cervix is the third most common cancer in women. In India and other developing countries cervical cancer is the leading cause of morbidity and mortality. Cancer cervix is readily preventable, and can be diagnosed at the pre-invasive stage with adequate and repetitive cytological screening with Papanicolaou (Pap) smears. *Objectives:* This is a retrospective study aimed to evaluate all previously conducted cervical smears examined at a teaching tertiary hospital during a 6 months period. *Methods:* Detailed clinical data and Pap smear cytology reports were obtained and data noted in a structured proforma. All the smears were reported as per the 2001 Bethesda system. *Results:* A total of 556 Pap smears were examined. Maximum number of patients was in the age group of 25-34years (28.1%). A total of 142 smears (25.5%) were reported to have normal cytological findings , 148 (26.6%) showed superficial squamous cells, 259 (46.6%) were inflammatory, 6 (1.1%) smears showed LSIL and 1(0.18%) showed HSIL. *Conclusion:* Premalignant and malignant lesions of cervix can be diagnosed easily by Pap smears. The epithelial cell abnormality rate in our study was 1.26%.

Keywords: Cervical Cytology; Pap Smear; Screening; Squamous Intraepithelial Lesion (SIL).

Introduction

Cancer of the cervix is a global health problem, comprises approximately 12% of all cancers among women globally. Incidence and mortality of cancer cervix in world is 530232 and 275008 per year while in India it is 134420 and 72825 per year respectively. It is the most common cancer among women after breast and colorectal cancer in the world, but in India and other developing countries cervical cancer is the leading cause of mortality and morbidity. Women in these countries usually present to the clinic only when they have symptoms, such as pain, discharge, and/or intermenstrual, postmenopausal or postcoital bleeding. Cancer of cervix is readily preventable, by early detection and appropriate timely treatment of its precursor lesions by simple Pap screening test. Though Pap smear is a routine screening test, the overall sensitivity in detection of high grade squamous intraepithelial lesion (HSIL) is 70 - 80%. The role of HPV in development of cervical cancer is proved beyond doubt. If Pap screening is combined with HPVDNA testing, the sensitivity increases. The epithelial changes can be treated, thus preventing cervical cancer. Intensive screening programmes in various countries show a striking reduction in morbidity and mortality from cancer of cervix. In general, in countries where Pap smear screening is routine, it is recommended that females who have had sex should seek regular Pap smear testing. Guidelines on frequency vary from every three to five years. If results are abnormal, and depending on the nature of the abnormality, the test may need to be repeated in six to twelve months. In 1988, the Bethesda system of terminology

has been introduced to sub-classify the lesions into grades: high grade and low grade Squamous Intraepithelial Lesions (SIL) for Pap smear reporting and some studies reported comparison of various terminologies. The Bethesda System (TBS) for reporting the results of cervical cytology was developed as a uniform system of terminology that could provide clear guidance for clinical management. The present study is intended to evaluate the pattern of cervical Pap smear cytology at a tertiary hospital and to correlate it with clinical findings.

Materials and Methods

This retrospective study was conducted on 556 patients to evaluate all previously conducted cervical smears of patients who attended the Obstetrics and Gynaecology outpatient department at a tertiary care hospital during the period January 2016 to June 2016. All patients who had undergone Papanicolaou (Pap) smear testing during this period were included in the study.

Smears were taken of all patients who presented with complaints of vaginal discharge, post-coital bleeding, intermenstrual bleeding, and pain in lower abdomen as well as those who had no complaints and had come for routine cervical screening. Relevant clinical data and Pap smear reports were obtained and data was noted in a structured proforma.

The smears were obtained with the help of Ayer's spatula to collect specimen from the squamocolumnar junction. The cellular material obtained on the spatula was quickly smeared on a clean glass slide. Two smears were prepared for each case. The glass slides were then fixed immediately by immersing them into the coplin jar containing 95% ethyl alcohol. The smears were stained with Papanicolaou stain. After mounting the slides with DPX (Distrenedibutyl phthalate xylene), slides were examined under light microscope and were reported by pathologists according to the 2001 Bethesda system.

Results

Maximum number of patients were in the age group of 25-34 years (28.1%). As per the patients presenting complaint, vaginal discharge (48.9%) was the commonest followed by lower abdominal pain (26.6%) and post menopausal bleeding (23.4%).

Based on the age group of women who reported

Age Group	No. of Women	Percentage
25-34 yrs	156	28.1%
35-44 yrs	142	25.5%
45-54 yrs	122	21.9%
>55 yrs	136	24.5%

Out of the 556 cases who underwent pap screening test, 142 (25.5%) were found to have a normal cytology, 148(26.6%) women had superficial squamous cells and 259 smears(46.6%) showed inflammatory cytology. 6(1.1%) women had LSIL and 1(0.18%) had HSIL.

Discussion

Cervical cytology is currently widely used as the most effective cancer screening modality. Objective data from hospital-based studies are required in order to detect the efficiency of the screening test. This study contributes to assessing current levels of cervical screening at a tertiary teaching hospital in Madurai, India. In our study, the mean age of patients with abnormal smears was 38.5 years. Vaginal discharge was the most common presenting complaint in our study. This study determines 550 cases (98.9%) of negative for any intraepithelial lesion or malignancy, with non-specific inflammation (259 cases, 46.6%) as the pre-dominant one.

The Epithelial Cell Abnormality (ECA) rate, that is the total of ASCUS, ASC-H, LSIL, HSIL and carcinoma diagnosis varied between 1.5 and 12.60% in various studies. The ECA rate of 1.26% in our study was comparable to those reported in literature.

Our study revealed LSIL(1.1%) to be the most common epithelial cell abnormality and 0.18% had high-grade Squamous Intraepithelial Lesions (HSILs). Our study thus elucidates the importance of Papanicolaou cervical screening test. Community health awareness campaigns and large scale Pap screening programmes for women should be undertaken.

Conclusion

This study emphasized the importance of Pap smears screening for early detection of premalignant and malignant lesions of cervix. In our study epithelial cell abnormality values correlate well with those in literature, proving that the methods are used reliably at our institution. We propose that larger studies are required to estimate the pattern of cervical cytological abnormalities along with detection of common HPV strains in cervical cancer in Indian population, as this knowledge would be useful for prevention of HPV infection either by vaccines or future targeted therapy.

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