Research Article

Pattern of Pap smear cytology: our experience

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ABSTRACT

Background: To study the pattern of cervical smear abnormalities among patients attending the Gynaecology department in our hospital during the study period, in order to understand the magnitude of the problem in our region and to address the need for effective screening programmes.

Methods: It was a hospital based prospective study over a period of six months. According to our study criteria, pap smears were collected and reported. Frequencies of the epithelial abnormalities were calculated.

Results: A total of 630 pap smears were collected and reported in our study. Among them 256 were normal smears (40.6%), 362 were abnormal smears (57.5%) and 12 smears were unsatisfactory (1.9%). When we analysed the abnormal smears (362 smears), 338 were negative for intraepithelial lesions or malignancy (93.4% of abnormal smears or 53.7% of total smears), and 24 smears were classified as epithelial lesions (6.6% of abnormal smears or 3.8% of total smears). ASC-US, ASC-H, LSIL, HSIL, AGUS, Atypical endocervical cells and squamous cell carcinoma were found in 0.9%, 0.5%, 0.5%, 0.6%, 0.2%, 0.3% and 0.8% respectively.

Conclusions: Our results emphasize that we have to encourage and motivate the women for active screening. It also indicates the need for well-organized screening programmes which already exist in well developed countries in order to reduce the burden of cervical cancer.

Keywords: Cervical cancer, Pap smear, Cervical cancer screening

INTRODUCTION

To study the pattern of cervical smear abnormalities among patients attending the Gynaecology department in our hospital during the study period, in order to understand the magnitude of the problem in our region and to address the need for effective screening programmes.

Cervical cancer is the fourth most common cancer among women worldwide and the seventh overall, with an estimated 528,000 new cases in 2012. It is the second most common cancer in developing countries (445,000 cases), ranks only 11th in more developed countries (83,000 cases).[1] In India cervical cancer is the second commonest cancer among women between 15-44 years of age.[2] Globally 27% of total cervical cancer cases are from India which is home to 16-17% of world's women population.[3]

Pap smear remains the mainstay for mass screening programmes for cancer cervix. It is used as screening as well as diagnostic tool.[4,5] Mortality due to cervical cancer is prevented by adequate screening by pap test. It is a millennium development goal.[6]

Well organised cytology based screening programmes have drastically reduced the incidence and mortality due to cancer cervix in developed countries.[7] But in developing countries there is marked variation in the frequency of cancer cervix due to the differences in screening programmes and prevalence of risk factors.[8]

In order to address the need for screening in our region, it is essential to measure the magnitude of the problem in our region. In this study, we have analysed the cytological profile of the pap smears taken from the women attending our hospital during the study period. The results give an idea about the magnitude of the problem in our region and also guide us about how far we have to strengthen the cervical cancer screening programmes and create awareness among general public.

METHODS

The study was a hospital based prospective study in our teaching medical college and hospital over a period of 6 months (January 2015-June 2015). The study was conducted after getting permission from our Institutional Ethical Committee. A detailed informed consent was obtained from the patients. The study population was selected from the patients who were attending the Gynaecology department based on the inclusion and exclusion criteria of our study.

Inclusion criteria

- Age group 18-60 years
- Married women
- Women with leucorrhoea, low back ache, abnormal vaginal bleeding

Exclusion criteria

- Women with menstrual bleeding
- Cervical growths

Cervix was visualised using Cusco's speculum and pap smears were collected using Ayre's spatula from the transformation zone by gynecologist. Spatula was gently smeared on pre-numbered glass slides. Slides were fixed using 95% Sorbitol in Koplik's jar. Patient details were recorded and slides were sent to Department of Pathology for cytological analysis which was done based on Bethesda system -2001. The prevalence of abnormal pap smears was calculated from the number of abnormal smears divided by number of total smears. Percentage distribution of each diagnosis was identified out of abnormal pap smears and out of total smears. The data analysis was done with SPSS software version 20.0.

RESULTS

A total of 630 pap smears were collected and reported in our study. Among them 256 were normal smears (40.6%), 362 were abnormal smears (57.5%) and 12 smears were unsatisfactory (1.9%) (Table 1).

When we analysed the abnormal smears (362 smears), 338 were negative for intraepithelial lesions or malignancy (93.4% of abnormal smears or 53.7% of total

smears), and 24 smears were classified as epithelial lesions (6.6% of abnormal smears or 3.8% of total smears).

Table 1: Gross distribution of Pap smear results.

Pap smear result	Number	Percentage
Normal	256	40.6%
Abnormal	362	57.5%
Unsatisfactory	12	1.9%
Total	630	100.0%

Detailed results of the study were given in Table 2.

Table 2: Specific distribution of abnormal Pap smears.

Abnormal PAP smears	Number	% Out of abnormal smears	% Out of total smears
NILM	338	93.4%	53.7%
Infections	264	72.9%	42%
Atrophy	14	3.9%	2.2%
Reactive	60	16.6%	9.5%
Epithelial lesions	24	6.6%	3.8%
ASCUS	6	1.6%	0.9%
ASC-H	3	0.8%	0.5%
LSIL	3	0.8%	0.5%
HSIL	4	1.1%	0.6%
AGUS	1	0.3%	0.2%
Atypical endocervical cells	2	0.6%	0.3%
SCC	5	1.4%	0.8%
Total	362	100%	57.5%

ASC-US, ASC-H, LSIL, HSIL, AGUS, Atypical endocervical cells and squamous cell carcinoma were found in 0.9%, 0.5%, 0.5%, 0.6%, 0.2%, 0.3% and 0.8% respectively.

DISCUSSION

Cervical cancer is the single most common cancer among Indian women. During their lifetime, 1in 35 women in India will develop cervical cancer when compared to 1 in 192 women in the United States.[9] Cervical cancer is preceded by a long phase of premalignant lesion which can be detected by screening methods available and treated appropriately by simple procedures, which can prevent mortality due to cervical cancer.[5]

In our study, when we analysed the abnormal smears, 338 were negative for intraepithelial lesions or malignancy (93.4% of abnormal smears or 53.7% of total smears), 24 smears were classified as epithelial lesions (6.6% of abnormal smears or 3.8% of total smears).

Detailed results of the study were given in Table 1.

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Gupta et al in their study reported that 5.64% of smears showed epithelial abnormalities. ASC-US, HSIL, LSIL, Carcinoma and AGUS represented 3.36%, 1%, 0.34%, 0.41% and 0.13% respectively.[10] In another Indian study by Muley et al conducted in urban society showed only 1.39% epithelial abnormalities. ASC-US, LSIL, HSIL and SCC represented 0.64%, 0.216, 0.16% and 0.07% respectively.[11]

The less prevalence in urban society could be explained by awareness of screening programmes and appropriate utilisation by the people in urban areas. In a study by Afrakhteh et al showed 1.18% epithelial abnormalities and a study by Turkish Cervical Cancer and Cervical Cytology Research Group showed 1.8% epithelial abnormalities.[12,13] These low figures in two Islamic countries may denote a more efficient and advanced step towards the awareness and screening programmes, thereby decreased the number of advanced cases.

In one of the largest studies in Gulf countries showed 4.3% of cervical epithelial abnormalities and another study in Emirates showed 3.6% epithelial abnormalities.[14,15] The results were similar to our study results. When we compare our study results to Western countries prevention and treatment of cervical cancer in India remain a great challenge. Still there have been several research studies addressing cost effective screening options for possible wide-scale implementation in the future.[16-20]

Even though our study represented only a small part of our community, the results emphasized that we have to encourage and motivate the women for active screening. It should be a continuous process in order to prevent people dropping out for follow up visits and treatment procedures.

It is our responsibility to sensitize the entire community on all aspects with respect to cancer cervix. Screening programmes should be established taking into consideration of available resources. Data collection should be improved on screening, protocols should be established for patient follow up and guidelines should be identified for patient referrals similar to well developed countries. By doing so, morbidity and mortality due to cervical cancer will definitely reduce in near future.

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