

Detection of Various Cytological Atypia and Inflammation of Cervix on Histopathological and Cytological Examination Among Hospital Based Population: A Retrospective Report Analysis.

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Abstract: Background: Carcinoma cervix is the 2nd most common cancer among the women in India and globally it is 4th most common among women. Most of the risk factors of this cancer have been identified till date. Analysis of risk factors of this cancer shows that it is one of the preventable cancers of human being. It can be detected several years prior to obvious neoplastic changes in cervix. There are several simple, cost-effective screening methods available for early detection of cellular atypia. Risk factors can also be controlled by HPV vaccination and behavioral changes. Lack of awareness about the risk factors and screening methods of this cancer among general population and unavailability of screening tests in national health program are responsible for high prevalence of this highly preventable cancer.

Objective: We wanted to find out the prevalence of cervical cytological changes among a small group of women population. Our aim was to establish the necessity of routine cervical cytological examination at regular interval as a screening method.

Material & Method: We did a retrospective analysis of cervical cytological examination reports of women who did not have apparent cervical abnormality to find out the proportion of various abnormal cytological reports.

Result: cytological reports of 378 patients we took for analysis shows that percentage of chronic inflammatory changes is 46.82 which is twice the proportion of normal cellular feature. Percentage of squamous metaplasia is 6.88%, LSIL is 5.56% and HSIL is 2.12%.

Conclusion: Prevalence of chronic inflammatory changes in the cervix is high among the normal population. Most of the risk factors of this cancer had also been identified. Among these risk factors HPV virus is a strong attributing factor for carcinoma cervix. Increasing awareness of people about the risk factors of this cancer, strict implementation of cost-effective screening tests in public health program and proper utilization of reliable preventive measures incidence of cervical cancer can be reduced to a significant extent.

Key words: Carcinoma cervix screening, Pap smear, cervical cytology, prevention of ca-cervix, pre-malignant lesions of cervix.

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I. Introduction

Cervical epithelium is subjected to the effects of various reproductive hormones, infective agents and immunological agents throughout the life. All the risk factors are showing that sexually active women with multiple sex partners are prone to such cancer. HPV virus has been identified as a single most important risk factor for this cancer. There are certain types of this virus that have significant malignant potential. Cervical cancer is the 2nd most common cancer among women in India after breast cancer, it accounts for 14% of all female cancer cases. As per GLOBOCAN, it is the fourth most common cancer in women with an estimated 528000 new cases and 266000 deaths in 2012.¹

This is one of the preventable cancers and can be prevented by several screening methods as well as by avoiding well known risk factors. Vaccination of a girl against HPV before becoming sexually active can prevent this cancer significantly.

Several simple, cost-effective screening methods are available for prevention of cervical cancer. These are Pap smear, HPV – DNA testing, direct visualization with acetic acid and Colposcopic examination. These screening methods can detect premalignant stages if done properly and timely. Cytological examination by Pap smear with or without HPV-DNA testing can detect cervical cancer at the earliest possible time that is in the stage of cellular atypia. This is noninvasive and cost effective method and can be done by any health care provider.

Unfortunately because of lack of awareness, lack of availability of screening methods and HPV vaccination in national program incidence of cervical cancer and its mortality is still out of reach.

In our study we tried to find out the prevalence of abnormal cellular changes in cervix in our study population.

II. Material and method

Study period was 2 years- January 2015 to December 2016. Total number of patients was 378. Patients attended in our Gynae OPD of COMJNMH, WBUHS with abnormal vaginal discharge and married for > 5 years, irregular spotting were examined clinically with speculum. Those who were found healthy looking cervix were advised to do Pap smear test. Those who were found to have abnormalities clinically were advised to do histopathological examination of the lesion. We took their reports and also histopathological reports of specimens of total hysterectomy.

We did a retrospective analysis of cervical cytology reports as well as cervical biopsy reports of the patients. Proper permission was taken from hospital authority prior publication of these reports.

Inclusion criteria:

All the cervical cytology reports of patients who did cervical Pap smear test in the study period, all the cervical biopsy reports done routinely following total hysterectomy and, all the cervical biopsy reports done for abnormal cervical findings on clinical examination in that said period.

Exclusion criteria: Diagnosed cases of cervical cancer, clinically high suspicion of malignant cases (friable cervix, bleeds to touch), unmarried/those who did not had history of sexual intercourse and some of the patients did not turn up for pap smear examination were automatically excluded from the study.

In this study all most all of our patients were from poor socioeconomic background and Hindu by religion. We recorded their age and cytological and histopathological findings. According to the different age group distribution of different cytological and histopathological findings we made a table and analyzed them.

III. Result and analysis

This retrospective analysis of cytological and histopathological reports are showing that the prevalence of chronic inflammatory changes are highest (46.82%) among all even more than normal cytological appearance (23.02%) of cervical epithelium. Prevalence of squamous metaplasia was 6.88%, LSIL was 5.56% and HSIL was 2.12%. These were premalignant lesions. Whereas, Cellular hyperplasia without any nuclear atypia were 5.56% this was mostly among young age group women who presented with cervical polyp.

Table 1: different cytological and histopathological findings among different age groups.

Cervical cytology & histopathology	Age <25 yrs	Age 25-35 yrs	Age 35-45 yrs	Age -45-55 yrs	Age >55 years	total	percentage
Acute inflammation	5	7	0	0	6	18	4.76
Chronic inflammation	23	38	41	54	21	177	46.82
ASCUS	0	02	03	06	0	11	2.91
AGUS	0	0	01	03	0	04	1.06
LSIL	02	05	04	09	01	21	5.56
HSIL	0	01	0	05	02	08	2.12
Cellular hyperplasia	07	04	05	03	0	19	5.03
Squamous metaplasia	0	05	08	05	08	26	6.88
SCC	0	0	0	02	05	07	1.85
Normal cytology	27	22	10	09	19	87	23.02

IV. Discussion

Cervical cancer is the second most common cancer among women in India. It accounts for 22.86% of all cancer cases in women and 12% of all cancer cases in both men and women.¹One woman dies of cervical cancer every 8 minutes in India.²All the risk factors are showing that sexually active women with multiple sex partners are prone to such cancer as there is high prevalence of persistent HPV infection among them.³

According to GLOBOCAN- 2012 data new cases registered every year were 123000, Deaths were 67500 per year and Median age 38 years (21-67 years).^{5,6}

Several screening tests are available to detect cervical cancer in premalignant stage. These are Pap smear, liquid based Pap cytology, automated cervical screening, visual inspection of cervix with Lugol's iodine and acetic acid, speculscopy, colposcopy, cervicography. Pap smear screening is considered as gold standard screening. Its sensitivity can be improved by HPV-DNA testing.

According to WHO guideline published in 2013 screening for cervical cancer should be started with Pap smear & HPV-DNA testing at 21 to 29 years of age will be continued at 3 years interval up to the age of 65 years or after hysterectomy of noncervical causes. Colposcopy examination should be offered to those with

abnormal cytology report. Stage ASCUS and above will be managed immediately with biopsy and cryotherapy or conization or LEEP. In our hospital colposcopy was unavailable so we did direct visual examination with Lugol's iodine and cervical biopsy from abnormal site.

Rural women are at higher risk of developing cervical cancer, and it is less common in Muslim than Hindu women.⁷ Three expert panel meetings were held in different regions of India from 2016-2017 comprising of 15 member experts in each panel. An article was published summarizing their meeting reports. They concluded that preventive strategies to detect the cancer in premalignant stage and large scale use of HPV vaccine in near future can reduce mortality rate significantly. Whereas wide spread availability of newer diagnostic and therapeutic tools for management of cancer cervix in densely populated areas is not cost effective.^{8,9} Cervical cancer is the 3rd largest cause of cancer mortality in India. It accounts for nearly 10% of all cancer related deaths in India.⁹ Overall survival rate is 48.7%. It varies according to the stage of the disease when treatment started.^{10,11}

V. Conclusion

Risk factors of cervical cancer indicate that chronic inflammation by HPV virus is one of the predisposing factors for carcinoma cervix. Analysis of cytological reports of our cases indicates that prevalence of chronic inflammatory smear among our study group is highest among all (46.82%). Because of unavailability of tests to detect HPV virus in these samples in our hospital cause of such inflammation remain unknown. Such inflammations could be avoided by preventing sexually transmitted infection and vaccination of young girls against HPV virus before becoming sexually active. Intraepithelial lesions could only be detected by routine screening with cytological examination at regular interval. Detection of HPV virus in cervical smear increases the predictability of subsequent cervical cancer.¹²

Risk of cervical cancer among women with HPV negative NILM is extremely low in comparison to those with HPV positive status at different stages of intraepithelial lesions. There are several therapeutic options available for different stages of neoplasia or premalignant conditions. Survival rate is higher if the cancer is detected at earlier stages even best if treatment started at premalignant condition. Here lies the importance of screening for cancer cervix.

Abbreviations:

HPV- Human Papilloma Virus

ASCUS – Atypical squamous cell of undetermined significance

AGUS – Atypical glandular cell of undetermined significance

LSIL – low grade squamous intraepithelial lesion

HSIL – high grade squamous intraepithelial lesion

NILM – negative for intraepithelial lesion or malignancy

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