Original Research Article

A study on cervical cancer screening using pap smear in urban area in state of Meghalaya, India

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ABSTRACT

Background: Cancer cervix is fourth most common cancer in world second most common in India. The objective of the study is to identify abnormal pap smear cytology in women undergoing the test.
Methods: This retrospective study conducted in 200 women attending gynae OPD of Military Hospital, Shillong, Meghalaya, India between January 2016 to December 2017. Pap smear test was done, and classification was done as per Bethesda system 2014.
Results: 105 women had normal cytology findings and 23 had abnormal cytology.
Conclusions: Cervical cancer is the most common cancer for which screening is done. If pap smear is done every 3 years as per the guidelines mortality due to cervical cancer can be reduced. Every woman should undergo pap test at least once in her life before the age of 45 years. Timely screening of preinvasive lesion allows prevention from invasive cervical cancer.

Keywords: Cervical cancer, HSIL, LSIL, NILM, Pap smear

INTRODUCTION

Cervical cancer is fourth most common cancers in world.[1] It is also among the commonest cause of deaths in developing countries like India. Developing countries account for 83% of cervical cancer and includes 15% female cancers. The situation in developing countries is different where it accounts for only 3.6% of new cases with a cumulative risk of only 0.8%.[2-4]

It second most common malignancy in India.[5] There are 1,22,844 cancer cervix cases in India every year.[1] Timely diagnosis and treatment allows significant reduction by maternal mortality and morbidity. lifetime probability of cervical cancer is approximately 1 in 53 Indian women compared with 1 in 100 women in more developed regions of the world.[6]

In absence of a nationwide screening program there is always a disparity between cancer detection and treatment. As in rest of India cancer cervix is leading cancer in North Eastern states too.

In state of Meghalaya it is second most common cancer in female and accounts for 11.2% female cancers.[7]

Keeping in view the high incidence of the cervical cancer in the state of Meghalaya this study attempts to screen women attending Gynecology OPD of our institution and also impart awareness among them.

Aims and objective of this study were the study aimed to find incidence of abnormal pap smear cytology during screening, to evaluate awareness regarding screening program, to assess impact of screening program on

women's health and to analyze result and plan follow up and treatment of patients.

METHODS

The study included 200 women attending gynae OPD of Military Hospital, Shillong, Meghalaya, India between January 2016-17.

Inclusion criteria

• Married women between 21 to 65 years

Exclusion criteria

• Women below 21 years.
• Women without sexual exposure.
• Women above 65 years.

Procedure

The method utilized was conventional pap smear cytology. Speculum examination of cervix was done.

Smear from ectocervix was taken using broad end of arye spatula rotating it 360 degrees. Sample from endocervix was taken using cytobrush and smear was made on a separate slide. After labelling slides were kept in 95% Ethanol fixative and sent to the laboratory. Evaluation was done using Bethesda system 2014.[8]

• Negative for intraepithelial lesion or malignancy
• Epithelial cell abnormalities
    a) Squamous cell abnormalities
    b) Atypical squamous cells (ASC)
    c) ASC of undetermined significance (ASC-US)
    d) ASC, cannot rule out high grade lesion (ASC-US)
    e) Low-grade squamous intraepithelial lesion (LSIL)
    f) High grade squamous intraepithelial lesion (HSIL)
    g) Squamous cell carcinoma
    h) Glandular cell abnormalities
    i) Atypical glandular cells specify site of origin, if possible
    j) Atypical glandular cells, favor neoplasia
    k) Adenocarcinoma in situ Adenocarcinoma
• Non-Neoplastic findings
    a) Cellular variations (atrophy, keratosis, metaplasia)
    b) Reactive cellular changes (inflammation, repair, radiation)
    c) Glandular cells status post hysterectomy
    d) Organism: Trichomonas vaginalis, Fungal organisms consistent with Candida spp, Shift in flora suggestive of bacterial vaginosis, cellular changes consistent with herpes simplex virus, cellular changes consistent with cytomegalovirus, Bacteria consistent with Actinomyces spp
    e) Other Non-Neoplastic findings
• Endometrial cells in woman ≥45 years of age
• Other malignant neoplasms (specified)

All the women with abnormal finding were followed up and underwent treatment as per standard protocol.

RESULTS

Most of the women who participated had undergone this test for the first time and were not aware of the test. Demographic distribution is summarized in Table 1.

Table 1: Sociodemographic distribution.

		Number (n)	Percentage
Age group	21-30	39	19.5
	31-40	116	58
	41-65	45	22.5
Parity	Nullipara	6	3
	Primipara	27	13.5
	Multipara	167	83.5
Marital status	Yes	200	100
	No	0	0
Education	Illiterate	12	6
	10th Pass	118	59
	12th Pass	52	26
	Graduate and above	18	9
Contraception use	None	63	31.5
	Barrier	47	23.5
	Coitus interruptus	24	12
	IUCD	14	7
	Tubal ligation	36	18
	Others	8	4
Smoking or tobacco use	No	188	94
	Yes	12	6

Mean age of women who underwent study was 36±7.5 years. Out of 200 women 167 (83.5%) were multiparous and only 6 (3%) were nulliparous. All the women were married and gave history of monogamous relationship. Majority of women were educated only up to 10th class (59%) and only 18% were graduate and above. 63 (31.5%) women did not use any family planning methods. Most of them did not give any history of addiction to smoking or tobacco in any form.

Prior to taking test women were asked about presence of any symptoms. 21% women were asymptomatic. Most common presenting complaint was discharge p/v (52%). Intermenstrual bleeding post coital bleeding and pruritis

vulvae were present respectively in 10%, 4% and 18% women. Table 2 summarizes the clinical presentations.

Table 2: Clinical presentations.

Presenting complaints	Number	Percentage
Asymptomatic	32	16
Discharge p/v	104	52
Intermenstrual bleeding	20	10
Post coital bleeding	8	4
Pruritis vulvae	36	18

On speculum examination (Table 3) most common finding was healthy looking cervix (53%) followed by discharge (48%). 34.5% women had cervical erosion, 27% had chronic cervicitis and 12% bled on touch.

Table 3: Speculum findings.

Speculum examination	Number	Percentage
Healthy cervix	106	53
Cervical erosion	69	34.5
Chronic cervicitis	54	27
Discharge	96	48
Bleeding on touch	24	12

When cytological examination (Table 4) was done it was found that 52.5 % were reported to be negative for intraepithelial lesion (NILM), 36% had inflammatory smear,3.5% had ASCUS, ASC-H was found only in 0.5%, LSIL and HSIL were reported in 4 and 1% women respectively. There was no case of glandular cell abnormality.

Table 4: Pap smear cytology.

Pap smear cytology	Number	Percentage
NILM	105	52.5
Inflammatory	72	36
Nonspecific findings	5	2.5
ASCUS	7	3.5
ASC-H	1	0.5
LSIL	8	4
HSIL	2	1
SCC	1	0.5
Glandular cell abnormality	0	0

Abnormal findings in pap smear were followed up as per ASCCP 2013 guidelines and coloposcopic examination followed by cervical biopsy was done if indicated.[8] Out of 21 abnormal findings in pap smear cytology 15 required cervical biopsy.

CIN 1 was reported in 6 histopathological specimens and CIN2 and 3 in 3 and 2 cases repectively.one was diagnosed to be invasive squamous cell carcinoma. These histopathological abnormalities were managed further as per the guidelines.

DISCUSSION

Cervical cancer is the most common cancer for which screening is done. Cervical cancer is preceded by premalignant stage and it take 10-15 years to progress. It is a well-known fact that cervical smear cytology can detect precancerous lesion of cervix at early stages and can reduce mortality and morbidity related to cervical cancer. Risk factors for cervical cancer are persistent or chronic infection with high risk HPV 16, 18, 31, 33, 45, 58; immunodeficiency; tobacco smoking; immunodeficiency; presence of other sexually transmitted diseases and long term oral contraceptive use.[9]

Total fertiliy rate in India is 2.3 and India state of Meghalaya it is 2.7 and in the present study also the mean parity was 3±1.4 which can be considered high parity.[10] There is not much awareness of contraception in women of our study group. In the present study it was found that 31.5% women used no contraception and oral contraceptive usage was only 4%. Although smoking along females is common in females in state of Meghalaya (43.7%) but in the present study population only 6% women.[11]

If pap smear is done every 3 years as per the guidelines mortality due to cervical cancer can be reduced up to 80%.[12] In the present study most of the women got their pap test done for the first time. The mean age of the present study population was 36±7.5. Most commonly cancer cervix occurs between 40-50 years and its pre-invasive lesions occur 5-10 years prior. It is therefore recommended that every woman should undergo pap test at least once in her life before the age of 45 years.[13,14]

In present study there were 200 smears examined and 3.5% were reported to be ASC-US whereas only 0.5% consisted of ASC-H. LSIL and Hsil comprised of 1% and 0.5% respectively. Only 0.5% patients had squamous cell carcinoma. High percentage of inflammatory pattern with increased neutrophils in smears also indicate poor perineal hygiene.

Table 5: Comparison of abnormal pap smear cytology.

	Present study	Sunita et al[15]	Nayir et al[16]
ASCUS	3.5%	2.3%	1.7%
ASC-H	0.5	-	0.2%
LSIL	4%	1.9%	0.5%
HSIL	1%	0.3%	0.1%
SCC	0.5%	0.5%	-
Total	9.5%	5%	2.5%

In the present study 95 (45.5%) women were found to have abnormal pap smear cytology whereas in study conducted by Sunita et al 433 (77.32%) reports were abnormal.[15] Inflammatory smear reports were 72 (36%)

in our study, whereas it was high in studies conducted by Nayir et al 403 (71.96%).[16] Comparison between epithelial cell abnormality in our study and other studies is given in Table 5. The difference between cervical smear findings may be because of difference in socio demographic distribution, age and difference in awareness regarding screening programs. With the present study we conclude that among women in early marriages, high parity, illiteracy leading to poor personal hygiene which leads to infections oral contraceptive use are major risk factors for cervical cancer. In spite of these risk factors there was low prevalence of atypical epithelial cell abnormalities. Modifiable factors in risk factors should be further evaluated such as patterns in cultural characters, sexual behavior and contraceptive awareness

CONCLUSION

Screening of cancer cervix can detect preinvasive lesions like CIN and timely intervention can be done and prevent development of invasive cancer. But knowledge regarding cervical cancer and pap smear is very poor. It is therefore important that there should be awareness program and educational activities for cervical cancer. Patients attending outpatient department for routine problems should also be counselled for the same. By introducing a well-planned screening program, we can reduce cervical cancer related mortality and morbidity.

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