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Research Article

Study on Cervical Cancer Screening in Women Using PAP Smear Attending Gynaecology Opd in Tertiary Care Rural Government Hospital in Central India

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Abstract

Cancer of the cervix is an increasing health problem and an important cause of mortality in women worldwide.

Aims: To screen women for cervical cancer with help of PAP smear for early detection.

Materials and methods: The study was conducted on 320 women attending Gynaecology OPD for different reasons over period of six months from June 2019 to November 2019. Patient were provided appropriate information regarding the pap smear test and its implications, Consented patient underwent Pap smear followed by cytological evaluation,

Results: None of the participant had pap smear test done earlier in their life. Mean age of participants was 36.2 years with most common presenting complain being leucorrhea. Cytological examination was done in all the 320 women who were included in the study, 92 (28.7%), smears were reported as NILM,110 (34.37%), were reported as inflammatory smear, 20 (6.25%), were reported as LSIL and 12 (3.75%), were reported as HSIL.

Conclusion: Pap smear is simple, safe, effective and economical screening tool for cancer cervix. Detection of abnormal epithelial cells at an early stage helps in better patient management and reduce morbidity and mortality. In low resource settings where women are not compliant for regular clinical visits, every patient should be made aware about the availability of test which can detect cancer cervix in its precursor stage. Moreover, PAP smear test should be offered to every patient attending gynaecology of age group 21-65 years.

ABBREVIATIONS

NILM: Negative for Intraepithelial lesions or Malignancy; HSIL: High Grade Sqaumous IntraEpithelial lesion; LSIL: Low Grade Sqaumous IntraEpithelial lesion

INTRODUCTION

Globally, cervical cancer is the fourth most frequent cancer among women [1]. According to the World Cancer statistics, >80% of all the cervical cancer cases are found in developing and low-resource countries, because of a lack of awareness, poor screening facilities and difficulty in running cytology-based screening programs [2]. In India, it has been estimated that 126,000 new cases of cervical cancer occur every year [3,4], despite availability of various screening modalities. Sexually transmitted Human Papilloma Virus (HPV), infection leads to the development of cervical intraepithelial neoplasia and cervical cancer. This cancer is one of the few cancers that can be easily detected at pre-malignancy phase. Screening for cervical cancer with the Pap test is an effective method for early detection of cervical cancer [5,6]. Many studies in the literature showed that there is a reduction in the incidence and mortality due to invasive cervical cancer worldwide because of early detection and screening with the Pap test as it detects early cervical epithelial cell abnormalities and mild-to-severe dysplasia to invasive cancer and facilitates early diagnosis [7-9]. This test not only plays a crucial role in the detection of cervical cancer and its precursor lesions but also aids in the diagnosis of other conditions as well such as infective and inflammatory

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conditions. Being simple, effective, and versatile, the Pap smear has become an integral part of routine clinical examination and large population at risk can be screened. Pap smear screening has sensitivity of 50%–75% and specificity of 98%–99% [10].

This study has been undertaken to evaluate women for pre cancerous lesions using Pap smear test at tertiary hospital.

MATERIALS AND METHODS

The study was conducted in the Department of Obstetrics and Gynecology at Shri VasantraoNaik Government Medical College Yavatmal over period of six months from May 2019 to November 2019. The study was commenced after approval from Institutional Ethical committee. A total of 320 women who were sexually active and over 21 years of age attending Gynecology OPD were enrolled in study.

Women belonging to the age group of 21-65 years attending gynaecology OPD with different complaints including vaginal discharge, foul smelling discharge, abdominal pain, intermenstrual bleeding, post coital bleeding, heavy bleeding, postmenopausal bleeding, etc were included in study.

Exclusion criteria are as follows:

- Women not willing to participate in the study,
- Known case of cancer cervix,
- Treated cases of cancer cervix.
- Pregnant population.
- Women with age less than 21 and more than 65 years.

All the women in study were sensitized about the screening method to detect carcinoma of cervix in preclinical stage. The women who volunteered to participate were re-informed about the Pap smear, biopsy if required and the required followup in case of an abnormal pap test result with the help of an information sheet that was provided to them and all queries were answered by the investigators. A detailed history was taken in all the women encompassing chief complaints, marital status, past history, personal history and clinical examination. It was ensured that no local douche, antiseptic cream, and no local internal examination were done on the day of test. The PAP smears were made with the conventional method. The participants were prepared in lithotomy position. A sterile bivalve speculum of appropriate size was inserted into the vagina without lubrication and was positioned that allowed complete visualization of the cervical os and ectocervix. First the sample of ectocervix was taken using a wooden spatula (Ayres), and the notched end of the spatula that corresponds to the contour of the cervix was rotated to 360° around the circumference of the cervical os. For each subject, an average of two smears were collected. The material was immediately smeared over labeled glass slide in rotary manner and was fixed within 30s before drying in 95% ethyl alcohol in Coplin jar. For endocervical cytology, endocervical brush was inserted into the endocervix until the junctions of the bristles of the brush with the end of handle were in approximation with external os. Then brush was rotated 180 (one half turn) in endocervical canal, then rolled on glass slide and fixed immediately in 95% ethyl alcohol and was sent to

Department of Pathology for examination.

Cytology laboratory reported the examination results according to the new Bethesda III classification system (2014) as follows:

Adequacy of sample

- Satisfactory
- Unsatisfactory
- -Inflammatory

-Squamous cell abnormalities

Atypical squamous cells (ASC)

ASC of undetermined significance (ASC-US)

- ASC, cannot rule out high grade lesion (ASC-US)
- Low-grade squamous intraepithelial lesion (LSIL)

High –grade squamous intraepithelial lesion (HSIL)

Squamous cell carcinoma

-Glandular cell abnormalities

Atypical glandular cells undertermined significance (AGUS)

Adenocarcinoma in situ

Adenocarcinoma

All the women with abnormal results were advised for followup and treatment as per the standard guidelines by World Health Organization (WHO).

RESULTS

A total of 320 women fulfilling inclusion criteria participated in the study with the mean age of 36.2 years. About 1.5% (05 women), knew that there are tests available that can detect the cancer of the cervix. However, none had the knowledge about the availability of a test that can detect the precancerous lesions. None of the participants never underwent this test earlier in their life.

In this study, participants were in the age group of 21–65 years, with mean age of 36.2 years. Most of the women were of low socioeconomic strata. Of 320 women, 14.37% (48), were nulliparous, 8.43% (27), were primiparous and 76.54% (245), were multiparous. 93.43% (299), women were married and stable in their relationship; 6.25% (20), were unmarried. 38.12% (122), of the participants never had the chance of attending the school or acquired primary education. 77.81% (249/320), women were using some kind of family planning methods. Socio demographic details has been shown in Table 1.

Out of 320, 89 (27.8%), gave history of smoking (biddi), and 02 (0.62%), gave history of occasional drinking and about 185(57.8%), gave history of tobacco chewing.

The presenting complaints of the study population and clinical findings on examination have been illustrated in Table 2 and 3 respectively. The most common presenting complaint was vaginal discharge (41.25%), followed by intermenstrual (18.75%), and post menopausal bleeding (18.17%). 1.87% (06),

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 Table 1: Socio-demographic characteristics of the women attending

 Gynaecology OPD for cervical cancer screening.

Parameter		Number	Percentage (%)	
	21-30 yrs	46	14.37	
Age Group	31-40 Yrs	220	68.75	
	41-65 yrs	54	16.87	
Parity Distribution	Nulliparous	48	15	
	Primiparous	27	8.43	
	Multiparous	245	76.54	
Education	Uneducated	122	38.12	
	Higher Secondary	59	18.48	
	Metric	118	36.87	
	Graduate	21	6.56	
M . 1. 1. C	Married	300	93.75	
Marital Status	Unmarried	20	6.25	
Contraception Usage	None	71	22.18	
	Barrier	46	14.37	
	Tubal ligation	96	30	
	IUCD	45	14.06	
	OCP	38	18.12	
	Others	4	1.25	

Table 2: Common Reasons of women attending gynaecology OPD.				
Chief complaints	Number	Percentage (%)		
Leucorrhea	132	41.25		
Irregular Bleeding	60	18.75		
Post coital Bleeding	25	07.81		
Post menopausal bleeding	58	18.12		
Menorrhagia	22	06.87		
Multiple problems(backache, lower abdominal pain, vulval itching)	17	05.31		
Contraceptive advice	06	01.87		

Table 3: Per speculum findings of the participants.				
Per speculum findings	Number	Percentage (%)		
Healthy looking cervix	102	31.87		
Discharge	90	28.12		
Cervical erosion	51	15.93		
Chronic cervicitis (nabothian cyst)	25	07.81		
Ectropion of cervix	22	06.87		
Bleeds on touch	30	09.37		

visited OPD for seeking Contraceptive advise with apparently no complaints.

On per speculum findings, three most common findings were normal appearing cervix (31.87%), discharge (28.12%), and cervical erosion (15.93%).

Cytological reporting documented 28.7% (92), smears as negative for intraepithelial lesions or malignancy (NILM), 34.37% (110), reported as inflammatory smear, 6.25% (20), reported as LSIL and 3.75% (12), reported as HSIL. In cases of 18

women (5.62%), the smears were repeated due to unsatisfactory sampling. 67 women were found to have squamous cell abnormalities like ASUS, ASCH, HSIL,

SCC and LSIL lesions on microscopy. Amongst them, 20 (6.25%), were found to have LSIL, 12 (3.75%), HSIL, 20(6.25%), AGUS. Cytological reporting have been shown in Table 4.

DISCUSSION

Cervical cancer is the most widely screened cancer in both developed and developing countries [11]. Nayir et al.[11], in their study showed that the population-based cervical cytology screening programs using Pap smear testing every 3-4 years have reduced cervical cancer incidence and mortality by up to 80% in developed countries in the last five decades. India accounts for 15.2 per cent of the total cervical cancer deaths in the world [12]. Although the incidence of carcinoma cervix has declined in the urban population, in the rural areas it continues to be highly prevalent [13]. The usual 10-20 years of natural history of progression from mild dysplasia to carcinoma cervix makes this cancer as relatively early preventable disease and provides the rationale for screening. The primary goal of screening is to identify precancerous lesions caused by HPV so they can be removed to prevent invasive cancers from developing. A secondary goal is to find cervical cancers at an early stage, when they can usually be treated successfully.

In our study, very few were aware about a test available that can detect the precancerous lesions of cervix and all the women under study underwent this test for the first time. This highlights the need of creating awareness among our population about the need of test, nature of the test, knowledge about the risk factors associated with the cancer cervix and its prevention.

In our study, majority of the women were of the age group 30-40 years, with mean age of 36.2 years. Similar results were reported in other Indian studies [14-16], although study by Nair et al.[17], conducted at Kanyakumari reported mean age of their population as 45.3 ± 4.6 years. It is recommended that the women should have at least one smear test before the age of 45 years [18].

Leucorrhea and irregular bleeding was the most common presenting complaint in our study, similar to other studies

Table 4: Cytological Interpretation by Bethesda System (2014).				
	Number	Percentage (%)		
Unsatisfactory	18	5.62		
Inflammatory	110	34.37		
NILM	92	28.7		
Atypical squamous cell	18	5.62		
ASC-US	13	4.06		
ASC-HS	02	0.62		
LSIL	20	6.25		
HSIL	12	3.75		
AGUS	20	6.25		
SCC	00	00		
Other non specific findings	15	4.08		

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Table 5: Comparison of epithelial cell abnormality of current study with other studies.						
	No of subject	LSIL (%)	HSIL (%)	ASCUS (%)	SCC (%)	ACCH (%)
Our study	320	6.25	3.75	1.32	0.00	0.6
Sarma et al	242	3.53	3.53	1.32	0.3	0.0
Nayani and Hendre	104	0.5	0.1	1.7	0.0	0.0
Sengul et al	1032	0.39	0.1	1.18	0.02	0.0
Nair et al	2028	1.58	0.49	0.15	0.2	0.0
Bal et al	300	2.7	0.7	0.3	1.3	0.0
Padmini	100	5.0	3.0	8.0	1.0	0.0
Shaki et al	1100	6.8	6	4	2.3	0.0
Ashok Verma et al	200	5.5	2.5	1.0	0.0	0.0
Nayri et al	1032	0.5	0.1	1.7	0.0	2.9

[14,17,19]. However, another study [15], reported irregular vaginal bleeding and menorrhagia as the predominant symptom in their study population.

31.87% of the study population had healthy looking cervix on per speculum examination followed by discharge in 28.12%, similar to finding of Nikumbh et al., [16]. Study by Shaki [14] et al., reported discharge as the most common per speculum finding [13].

In the current study, the most frequent reported cytological abnormality was inflammatory smears (34.37%) followed by NILM (28.7%), finding similar to Kulkarni et al [20]. Shaki et al.[14], observed NILM in 52.8% of the smears with inflammation in 23.8%. Another study [21], documented a lower rate of inflammatory smears (14.3%). Regular follow up of patients with inflammatory smears is essential as persistent inflammation might be a predisposing factor for CIN as studies [20,21], have reported that persistent inflammation was associated with CIN in 14.3% to 16.7% women. A large number of women with CIN would be missed if persistent inflammation on Pap smear is not evaluated further.

Table 5 compares epithelial cell abnormality in our study with other studies. The difference in the prevalence of inflammatory changes and cervical dysplasia could have been the result of social and cultural differences, age, incidence of related infections and presence or absence of cervical screening programmes in different societies.

CONCLUSION

Cervical cancer has long natural course of history and therefore, screening, if done properly and regularly will help to contain the disease. An important strategy towards the reduction of its burden is by early diagnosis and management. Pap smear, best known form of secondary prevention, has proven to be an effective screening tool for cancer cervix. Our study highlighted that majority of rural population is either unaware of the pap smear test and its implications or unwilling to take the test. Lack of awareness about cervical cancer and knowledge of risk factors are potential barriers to accessing cervical cancer screening services and related care. These barriers should be addressed through novel multi-faceted strategies which may include the

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peer-education, use of printed materials & electronic sources and active participation of healthcare facilities.

RECOMMENDATIONS

- 1) Knowledge about cancer cervix and importance of its early detection by regular screening programs should be imparted to each and every women attending gynaecological OPD.
- 2) Health care providers should encourage women to take the pap smear test and ensure regular follow up with appropriate and timely treatment.
- 3) Health-care systems should provide better infrastructure and financial support to conduct screening programs regularly in their area of responsibility, preferably with the help of local authority/government.

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