Original Article

Cervical Cancer Screening Using Pap Smear Test and Clinical Correlation

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ABSTRACT

Objective: To screen for cervical cancer with the help of pap smear test and to analyze its clinical correlation.
Study Design: Prospective study
Place and Duration of Study: This study was conducted at the Pak International Medical College, Peshawar from Jan 2019 to Jan 2020.
Materials and Methods: The study was carried out on 40 sexually active women for over 4 months. All females were of >25 years. Pap smear was taken in lithotomy position. The sample was drawn from ectocervix by using wooden Ayre spatula rotated to about 360 degrees. It was then taken to lab for results. The lesions were categorized into negative intraepithelial neoplasm as well as epithelial cell abnormalities (ECA) in which both squamous and glandular cells were present. Treatment was given in accordance with the disease stage. The data that was collected was transformed into variables on IBM SPSS statistics 26.
Results: In this study, 40 women were taken out of which 15 women revealed negative results while 25 showed signs of inflammation as well as infection. 20 women were asymptomatic, 7 revealed white vaginal discharge and 6 women were having irregular cycle. These were the most common symptoms. Others showed contact bleeding (n= 2), urinary incontinence (n=1) or excessive vaginal discharge (n= 4). The age of participants ranges from 26 to 65 years of age with mean age 37.07 years. Most of the women were falling in the age group of 30 to 50 years. Women having inflammation were starting from lower age group from 28 to 46 years.
Conclusion: Cervical cancer can be avoided if adequate screening methods are used. The most frequent procedure for earlier detection and confirmation of cervical cancer is testing through Pap-smear A Pap smear is a quick, non-invasive, low-cost procedure. In a gynecologic setting, it is simple to diagnose precancerous lesions in women.
Key Words: Pap smear screening, cervical cancer, malignancy

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INTRODUCTION

Cervical cancer begins in the cells of cervix, which is the part of uterus that connects to vagina. After breast cancer, it is the 2nd most common cancer found in women resulting in about 300,000 deaths around the world. Most of the cervical cancers develops in low or middle-income countries, which do not have proper screening as well as vaccination programs.

It still occurs in the developing countries due to unawareness or difficulties of implementing cytology-based screening tests. Existing research suggests that early detection as well as treatment of premalignant lesions could help in preventing cervical cancer from progressing to its advanced stages. Thus, efficient screening programs, particularly the systematic use of the Papanicolaou (Pap) smear testing for diagnosing premalignant alterations in the cervix, have helped to limit the prevalence of cervical cancer in developing countries.[1]

Cervical cancer screening service is significantly lower with in East African area, wherein age-standardized prevalence rate of cervical cancer is greatest because of insufficient testing systems. Routine pap screenings can help to minimize the risk of cervical cancer.[2]

The Pap smear is a safe, low-cost, and effective cervical cancer screening test. The Pap test has an overall sensitivity of about 70.80% in identifying a high grade squamous intraepithelial lesion (HSIL). A Pap test combined with an HPV DNA test improves the sensitivity for early identification of precancerous lesions.[3] It is necessary to expand cervical cancer screening awareness, provide education to women about cancer symptoms, as well as encourage them to attend the hospital to screen for cancer. Women, as well as all family members, must be counselled about the importance of cancer screening. Women who test

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positive for Pap smears require appropriate therapy as well as continuous follow-up. As a result, we must enhance our health services as well as health care systems to incorporate basic health care screening. The objective of this study was to use the Pap smear test to screen women for precancerous lesions as well as examine its clinical correlations.

MATERIALS AND METHODS

This study was carried out on 40 women for over 12 months. It was conducted in Pak international medical college Peshawar from Jan 2019 to Jan 2020.All women were sexually active and were more than 25 years of age. This research includes women without complaints as well as women with various complaints such as white vaginal discharge, increased vaginal secretion, irregular menstrual cycle, contact bleeding, as well as urinary incontinence. Signed consent for the study was acquired from all women. A sterilized bivalve speculum was introduced into vagina of women in the lithotomy position. To provide appropriate visibility of the cervix as well as vaginal wall, the posterior wall of vagina was pulled posteriorly while the anterior wall of vagina was pulled anteriorly. The ectocervix was sampled by turning a wooden Ayre spatula 360 degrees. The samples were sent to the labs for the results.

The method categories lesions as either positive for intraepithelial neoplasm or positive for epithelial cell abnormalities (ECA), which includes squamous as well as glandular cells. Therapy was given depending on the specific stage of the illness.

After providing detailed information regarding the purpose of the research, all patients provided verbal informed permission.

Statistical Analysis: The data that was collected was transformed into variables on IBM SPSS statistics 26. Data was analyzed and results were obtained in the form of frequency tables as well as pie chart.

RESULTS

In this research, 40 women were screened by using pap smear. About 75% (n=30) was taken adequately while 25% (n=10) had inadequate sample. About 37.5% (n= 15) were tested negative for malignancy while 62.5% (n=25) showed signs of inflammation as well as infection. 28% (n= 7) revealed mild inflammation while 44% (n= 11) were with severe inflammation.

Table No.1: Inflammation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	negative	15	37.5	37.5	37.5
	mild	7	17.5	17.5	55.0
	Severe	11	27.5	27.5	82.5
	ASCUS	5	12.5	12.5	95.0
	LSIL	2	5.0	5.0	100.0
	Total	40	100.0	100.0	

Atypical squamous cells of unknown significance (ASCUS) as well as low grade squamous intraepithelial lesion (LSIL) were found in about 20% (n= 5) and 8% (n= 2) respectively.

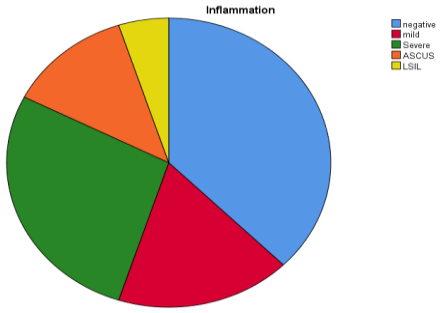

Figure No.1: Inflammation

The age of participants ranges from 26 to 65 years of age with mean age 37.07 years. Most of the women were falling in the age group of 30 to 50 years. Many women were multiparous about 67.5% (n= 27). About 10% (n= 4) were with post- menopause. Women having ASCUS were mostly falling in the age group of 41 to 60 years.

Table No. 2a: Menopause

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	pre	7	17.5	17.5	17.5
	post	4	10.0	10.0	27.5
	NO	29	72.5	72.5	100.0
	Total	40	100.0	100.0	

Table No. 2b: Parity

		Freq-uency	Percent	Valid Percent	Cumulative Percent
Valid	1-3	15	37.5	37.5	37.5
	more than 3	12	30.0	30.0	67.5
	None	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Table No.3: Symptoms

		Freq-uency	Percent	Valid Percent	Cumulative Percent
Valid	asymptomatic	20	50.0	50.0	50.0
	White vaginal discharge	7	17.5	17.5	67.5
	Irregular cycle	6	15.0	15.0	82.5
	Contact bleeding	2	5.0	5.0	87.5
	Urinary incontinence	1	2.5	2.5	90.0
	Excessive discharge	4	10.0	10.0	100.0
	Total	40	100.0	100.0	

Out of 5 ASCUS women, 2 were post-menopausal. 2 women were with LSIL with age 50 and 51 years. Women having inflammation were starting from lower age group from 28 to 46 years. About 17.5% (n= 7)

women were premenopausal while 10% (n= 4) were post-menopausal women. 30% (n= 12) women had more than three children while 37.5% (n= 15) had one to three children.

Out of 40 women, 20 women were asymptomatic, 7 revealed white vaginal discharge and 6 women were having irregular cycle. These were the most common symptoms. Others showed contact bleeding (n= 2), urinary incontinence (n=1) or excessive vaginal discharge (n= 4).

DISCUSSION

The Pap smear test, that is used for screening as well as identifying cervical cancer, is an efficient approach to minimize the onset of cervical cancer; nevertheless, community knowledge of the Pap smear test is relatively poor. As per the American Cancer Society (2012), a Pap smear testing is a regular cancer screening procedure which should be performed every three years, and a Pap smear combined with an HPV DNA test is suggested as a monitoring technique every five years.[4]

According to the United States Preventive Services Task Force (USPSTF), women of age 21 to 29 years are recommended to get tested for cervical cancer using cervical biopsy alone every three years. The USPSTF advises testing every three years by cervical cytology separately, every five years with human papillomavirus (hrHPV) testing, or every five years to screen hrHPV in conjunction with cytology for women of age 30 years to 65 years (co-testing).[5]

In this study, about 37.5% (n= 15) were tested negative for malignancy while 62.5% (n=25) showed signs of inflammation as well as infection. 28% (n= 7) revealed mild inflammation while 44% (n= 11) were with severe inflammation. Atypical squamous cells of unknown significance (ASCUS) as well as low grade squamous intraepithelial lesion (LSIL) were found in About 20% (n= 5) and 8% (n= 2) respectively. Out of 5 ASCUS women, 2 were post-menopausal. 2 women were with LSIL with age 50 and 51 years. Out of 40 women, 20 women were asymptomatic, 7 revealed white vaginal discharge and 6 women were having irregular cycle. These were the most common symptoms. Others showed contact bleeding (n= 2), urinary incontinence (n=1) or excessive vaginal discharge (n= 4).

According to research of Saudi Arabia, in a complete sample of 1171 ladies, 4.95 percent had squamous epithelial lesions.[6] According to research conducted in the United Arab Emirates, 1.8 percent of (ASCUS), 1.2 percent of (LSILs), and 0.3 percent of (HSILs) were discovered. According to a certain study, ladies with chronic inflammation must be treated correctly; else, the risk of cervical intraepithelial lesions rises. Following antibiotic therapy, a second Pap smear must be performed.[7]

According to several qualitative research, there are several hurdles to Pap smear screening enrollment, including a lack of information, incorrect ideas, concern of being detected with cervical cancer, stomach discomfort following Pap smear, as well as an unpleasant feeling during the procedure. On either hand, most quantitative research has identified Pap test humiliation and concern of cancer diagnosis as the primary obstacles in this respect.[8]

Furthermore, several elements were proposed as being the most essential motivators for Pap testing, such as physician, companion, or family suggestions, information regarding signs as well as procedures for early identification of the disease, recognizing the severity of cancer, and quick and affordable access to Pap test. According to the findings of several quantitative research, the recommendation of physicians and healthcare providers has been the primary promoter for Pap test taking.[9]

Each woman over Thirty years should get regular screening tests, even if she is post-menopausal. The Pap smear has long been considered the gold standard in cervical diagnostic tests. The efficiency for detecting cervical cancer is improved whenever the Pap test is coupled with an HPV DNA test. The society should be taught regarding Pap smear test, along with its purpose as well as the regularity with which it must be performed, through extensive educational as well as media campaigns. The majority of women who attend an outpatient department are unaware that cervical cancer screening is available.[10]

In this study, women having inflammation were starting from lower age group from 28 to 46 years. About 17.5% (n= 7) women were premenopausal while 10% (n= 4) were post-menopausal women. 30% (n= 12) women had more than three children while 37.5% (n= 15) had one to three children. The mostly common cytological abnormalities were found in age group 41 to 60 years.

According to a study Gupta. et al, the majority of abnormal cytology occurrences in their research (40.37 percent) were all in the 30 to 39 years age range, following 35.96 percent in the 20 to 29 years age range.

In this study, white vaginal discharge and irregular cycles were common symptoms. However, other symptoms include urinary incontinence, contact bleeding as well as excessive vaginal discharge.

Even though cytology based cervical cancer preventive strategies have lowered the prevalence of cervix cancer in many industrialized nations, the poor sensitivity of cytologic examination makes these programs complex and costly to sustain. As a result, it is probable that within coming years, we will start to shift away from cervical cytology-based screening programs and focus more on programs that tests for high-risk forms of human papillomavirus (HPV).[11]

CONCLUSION

Cervical cancers occur in the cells of cervix, through which a uterus is connected to the vagina. This cancer can leave impact on deeper tissues as well, thus increasing the chances of metastasis at different regions. The most common cause of this disease is

human papillomavirus (HPV) which can be avoided through proper vaccination.

The Pap smear is a safe, low-cost, and effective cervical cancer screening test. The Pap test has an overall sensitivity of about 70.80% in identifying a high grade squamous intraepithelial lesion (HSIL). A Pap test combined with an HPV DNA test improves the sensitivity for early identification of precancerous lesions.[12]

This study was carried out on 40 women for over 12 months. All women were sexually active and were more than 25 years of age. Most of the women were falling in the age group of 30 to 50 years. On pap smear screening, 15 women revealed negative results while 25 showed signs of inflammation as well as infection. 20 women were asymptomatic, 7 revealed white vaginal discharge and 6 women were having irregular cycle. These were the most common symptoms.

Cervical cancer can be avoided if adequate screening methods are used. The most frequent procedure for earlier detection and confirmation of cervical cancer is testing through Pap-smear. However, when manually pap-smear analysis is approached, error can present because of human error, as well as the procedure is laborious and quite lengthy. As a result, it is advantageous to build a computer-assisted detection tool to improve the accuracy and reliability of the pap smear testing.[13]

With time, it is being more evident that cytology offers no advantage over screening with HPV tests alone. As a result, in coming years, we will most likely utilised HPV screening solely to screen, and cervical cytology will be used to identify which HPV positive women need extra follow-up or colposcopy.[14]

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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