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ORIGINAL ARTICLE

Clinical Correlation between Cervical Cancer Screening Using Pap Smear Test

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ABSTRACT

Objective: The study's objective is to evaluate the effectiveness of the Pap smear screening procedure for identifying precancerous lesions.

Study Design: Prospective study

Place and Duration: Department of Pathology, Nishtar Medical University Multan, From 1st October, 2021 to 31 March, 2022.

Methods: There were 162 females had age 18-50 years were presented in this study. All of the women were given a complete physical examination, including a speculum exam and a vaginal exam, and their medical histories were recorded. Women's cervical cancer screenings often involved a Pap smear. Using an Ayre spatula, a smear was collected and spread over a labelled glass slide before being stored in 95% ethyl alcohol and delivered to the Pathology Department for cytopathological testing. SPSS 24.0 was used to analyze all data.

Results: Among 162 females, 45 (27.8%) had age 18-30 years, 73 (45.1%) were aged between 31-40 years and 44 (27.2%) patients had 41-50 years. Mean BMI of the females was 22.4 ±6.52 kg/m^2. Frequency of smokers was 4 (2.5%). Most common complaint was vaginal discharge, followed by irregular menstrual cycle and abdominal pain. We found that 63 (32.7%) cases had no pathology, frequency of inflammatory was 49 (30.2%) cases, atypical squamous cells of undetermined significance (ASUS) was 28 (17.3%), low-grade squamous intraepithelial lesions (LSILs) was 8 (4.9%) and high-grade squamous intraepithelial lesions (HSILs) was 5 (3.1%). As per HPV, low risk and high risk virus was found in 11 (6.8%) cases.

Conclusion: The Pap smear is an easy, quick, and inexpensive way to check for cervical epithelial precancerous abnormalities. It has the potential to be employed as a routine screening tool, leading to better treatment outcomes and lower death rates. Increased detection of these lesions is facilitated by the Pap test and the HPV-PCR test.

Keywords: Cervical Cancer, Pap smear Test, HPV, Pathology

INTRODUCTION

Cervical cancer (CC) (invasive squamous cell carcinoma) is becoming a major killer of women across the world. Cancer of the uterine cervix is the most common kind of malignant tumour in females worldwide [1]. Approximately 86% of CC-related deaths happen in low- and middle-income countries. It's a sign of the widespread health disparity that exists today. The lack of a population-based national cancer registry centre in Iraq makes it difficult to get reliable data on cancer incidence rates [2,3], however the World Health Organization (WHO) estimates that the rate of this malignancy in Iraq is 2.1 per 100,000 women (for all ages). Since the preinvasive stage is so protracted and preinvasive lesions respond well to treatment, invasive CC is often seen as a preventable malignancy [4]. Screening programmes for cervical cytology are therefore very helpful. [5] Because of the considerable time spent in the preinvasive phase, cervical cancer is often avoidable. If thorough screenings are put in place, problems can be identified and treated early on. Pre - cancerous intraepithelial neoplasia and early stages of invasive cervical carcinoma are most commonly detected with the Pap smear [6]. With the help of widespread screening programmes, the mortality rate from cervical cancer has reduced considerably in developed countries. The sensitivity of the Pap test is 70.80% for detecting HSILs (high-grade squamous intraepithelial lesions). Early detection of precancerous lesions is facilitated by integrating a Pap test with a HPV Dna sample [7]. Women should be educated on the symptoms of cancer and strongly urged to get regular cancer screenings, as well as made aware of the importance of cervical cancer screenings. The health of women and their families may improve if they were given information on cancer screening. As soon as a Pap smear result is positive, the woman should be seen by a doctor. That's why it's crucial that we upgrade our medical facilities and healthcare system to provide screenings at primary care facilities.

To enhance the productivity of cytology labs and, in particular, to reduce the incidence of false-negative results, cytohistopathological correlation of Smear test is recommended by European standards for quality assurance. As can be seen in [8], the death rate from cervical cancer has decreased considerably in high-income countries due to the implementation of thorough screening systems. Seventy-0.8 percent of women will test positive for cervical cancer if a high-grade squamous intraepithelial lesion (HSIL) is present. As demonstrated in [9], precancerous tumors can be diagnosed sooner when a Pap test is paired with an HPV test.

We need to get the word out about cervical cancer screening programmes, inform women about the signs of cancer, and encourage them to get checked out. Women and their loved ones in general might benefit from receiving advice on cancer screening. Women who test positive for cervical cancer on a Pap screening require prompt and thorough care. Because of this, it is imperative that we improve our health services and health-care system to incorporate screening at primary health clinics. [8-10]

The current study's objective was to examine clinical correlation in connection to the Pap smear test for the detection of precancerous lesions in females.

MATERIAL AND METHODS

This prospective study was conducted at Department of Pathology, Nishtar Medical University Multan, From 1st October, 2021 to 31 March, 2022 and comprised of 162 patients. After obtaining informed written consent detailed demographics were recorded. Those with a visible growth, history of cervical cancer treatment, or pregnancy status became ineligible for the research.

Inclusion criteria for the research comprised women who had any of the following symptoms: post - coital bleeding, irregular menstrual haemorrhage, menopausal bleeding, abdominal discomfort, infertility, or secondary amenorrhea; vaginal discharge; blood-mixed discharge; foul-smelling discharge; postcoital

bleeding; A sample of the ectocervix can be obtained by rotating a wooden Ayre scraper in a full circle. To keep it from degrading, we quickly smeared it onto a microscope slide, labelled it, and stored it in 95% alcohol. Cytopathological analysis of the slides was done by the Department of Pathology. Lesions are classified as either having intraepithelial neoplasia (IEN) or not (ECA), where ECA can affect both squamous and glandular cells.

Women who had abnormal findings from their Pap screening were sent for a colposcopy. These women included those who had atypical squamous cells of uncertain significance (ASCUS), low-grade squamous intraepithelial lesion (LSIL), or high-grade squamous intraepithelial lesion (HSIL). Women who had abnormal findings on a colposcopy were given a biopsy that was guided by the colposcopy (a Reid score of 6 or above). The severity of the disease served as the primary determinant in determining the treatment approach. SPSS 24.0 was used to analyze all data.

RESULTS

Among 162 females, 45 (27.8%) had age 18-30 years, 73 (45.1%) were aged between 31-40 years and 44 (27.2%) patients had 41-50 years. Mean BMI of the females was 22.4 ±6.52 kg/m^2. Mean parity was 4.7±12.31. Frequency of smokers was 4 (2.5%). Most common complaint was vaginal discharge, followed by irregular menstrual cycle and abdominal pain.(table-1)

Table-1: Characteristics of enrolled cases

Variables	Frequency	Percentage
Age (years)		
18-30	45	27.8
31-40	73	45.1
41-50	44	27.2
Mean BMI (kg/m^2)	22.4 ±6.52	
Mean parity	4.7±12.31	
Smokers		
Yes	4	2.5
No	158	97.5
Complaints		
vaginal discharge	66	40.7
irregular menstrual cycle	52	32.1
abdominal pain	50	30.9

We found that 63 (32.7%) cases had no pathology, frequency of inflammatory was 49 (30.2%) cases, atypical squamous cells of undetermined significance (ASCUS) was 28 (17.3%), low-grade squamous intraepithelial lesions (LSILs) was 8 (4.9%) and high-grade squamous intraepithelial lesions (HSILs) was 5 (3.1%).(table-2)

Table-2: Findings of pap smear test among all cases

Variables	Frequency	Percentage
Pap Smear Test		
No-Pathology	62	32.7
Inflammatory evidence	49	30.2
ASCUS	28	17.3
LSILs	8	4.9
HSILs	5	3.1

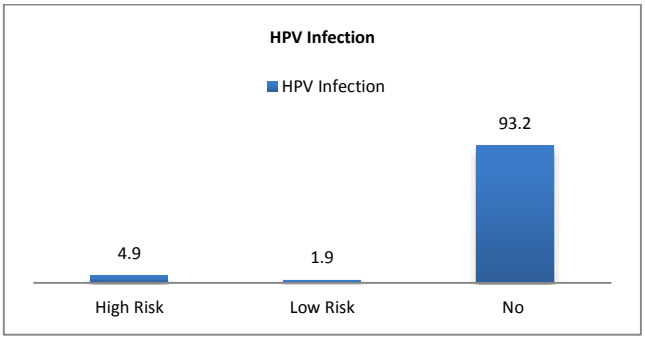

Figure-1: Frequency of HPV virus among all cases

As per human papillomavirus (HPV), low risk and high risk virus was found in 11 (6.8%) cases and frequency of negative infection was 157 (93.2%).(figure-1)

DISCUSSION

The failure or inefficiency of current Cervical Cancer prevention efforts contributes to the disease's higher prevalence than is warranted. Sadly, the high CC death rates in some populations are due, in part, to a lack of awareness of the Pap smear test as a CC screening procedure, which is an effective strategy for avoiding the development of CC. Community-based CC screening techniques, such as inducing a Pap smear every three to four years, have reduced CC mortality and incidence by up to 80% in industrialized nations over the past five decades.[11]

In current study, 162 females were present. 45 (27.8%) patients had age 18-30 years, 73 (45.1%) were aged between 31-40 years and 44 (27.2%) patients had 41-50 years. Among the aberrant cytology instances in the study conducted by Gupta et al.[12], 40.37% were found in participants aged 30-39, while another 35.96% were in those aged 20-29. Married women had a mean age of (31.55 ± 6.66 years) in a prior study, which is a good median age considering that CC most commonly affects individuals between the ages of Forty and fifty.[13] In our study, most common complaint was vaginal discharge, followed by irregular menstrual cycle and abdominal pain.[14]

Previous studies have shown that the likelihood of developing intraepithelial lesions rises after antibiotic medication has been administered to women with chronic inflammation, hence it is recommended that these women get a second Pap test after the completion of their treatment. [15] In current study, frequency of inflammatory was 49 (30.2%) cases, atypical squamous cells of undetermined significance (ASUS) was 28 (17.3%), low-grade squamous intraepithelial lesions (LSILs) was 8 (4.9%) and high-grade squamous intraepithelial lesions (HSILs) was 5 (3.1%). ASCUS, LSIL, and HSIL were found in 1%, 5.5%, and 5.5% of the study population, respectively, as reported by Verma et al. (2017). [16] Padmini et al. also discovered that 8% of women who had Pap smears were diagnosed with ASCUS, 5% with LSIL, and 3% with HSIL (2015). [17] Findings from a study by Nayani and Hendre (2015) showed that LSIL accounted for 8.6% of anomalies and HSIL for 3.8%. [18]

Nayani and Hendre discovered a higher prevalence of both LSIL (8.6%) and HSIL (3.8%). [19] Culture, age, prevalence of associated illnesses, screening knowledge, and access to cervical screening programmes may all play a role in explaining why Indian studies have shown a disproportionately high rate of cytological abnormalities. The detection rate for SIL in an epithelial pathology investigation conducted in Saudi Arabia was 4.9%[20]. There was a greater SIL rate since neither screening nor its importance were widely publicised. Contrary to our findings, ASCUS was shown to be the most prevalent cytological defect in a research by Saha et al.[21].

CONCLUSION

The Pap smear is an easy, quick, and inexpensive way to check for cervical epithelial precancerous abnormalities. It has the potential to be employed as a routine screening tool, leading to better treatment outcomes and lower death rates. Increased detection of these lesions is facilitated by the Pap test and the HPV-PCR test.

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