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REVIEW ARTICLE

Cervical Cancer Screening Using Pap Smear Test and Clinical Correlation

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Abstract

Background: Cervical cancer is a preventable disease of significant public health concern, it is an important cause of mortality in women worldwide**.** The objective of the study is to evaluate the use of the Pap smear screening method for detection of precancerous lesions. This prospective study was carried out over 4 month, screening of 86 sexually active women who were more than 25 years of age. A clinical examination, an examination per speculum, and a vaginal examination were performed and a history taken for all women. A Pap smear was used for all women to screen for cervical cancer.

Results: The age of study participant was ranged from 26-65 years with mean of 41.7±9.4 year, most women were in the age range of 30–50 years (67%) and more than half were multiparous (54.8%). There was 24.7% post-menopausal. White vaginal discharge (9.3%) and irregular cycle (9.3%) was the most common symptoms, Pap smear test was negative for malignancy in 29%, and 58.8% had infection or inflammation (17% and 41% for mild and severe inflammation respectively). Atypical squamous cells of undetermined significance (ASCUS) and low-grade squamous intraepithelial lesion (LSIL), were detected in 12%, and 1%respectively.

Conclusion: A Pap smear is simple, non-invasive, cost-effective, and easy to perform for detection of precancerous lesions in a gynaecological patient.

Keywords: screening, cervical malignancy, Pap smear Background:

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1 | BACKGROUND:

Cervical cancer is a preventable disease of significant public health concern, it is an important cause of mortality in women worldwide. According to the World Health Organization (WHO), every year almost 270,000 women die of cervical cancer and over 530,000 new cases of cervical cancer are reported (1). In developing countries, the burden of cervical cancer is still high. 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 and difficulty in running cytology-based screening programs (2).

In Egypt, 30.55 million women age 15 years and older are at risk of developing cervical cancer. Current estimates indicate that 866 women are diagnosed with cervical cancer and 373 die from the disease annually. Cervical cancer ranks as the 13th most frequent cancer among women in Egypt and the 10th most frequent cancer among women between 15 and 44 years of age (3).

Strong evidence shows that the progression of cervical cancer into its later stages can be prevented through screening and treatment of premalignant lesions. Thus, in developed countries, the incidence of cervical cancer has been controlled due to effective screening programs, especially the systematic use of the Papanicolaou (Pap) smear test for identifying premalignant changes in the cervix (4).

The Pap smear is a reliable, inexpensive and effective screening test for cervical cancer (5). The overall sensitivity of the Pap test in detecting a high grade squamous intraepithelial lesion (HSIL) is 70.80% (6) A Pap screening done in association with an HPV DNA test increases the sensitivity for early detection of precancerous lesions (7)

There is a need to spread cervical cancer screening awareness programs, educate women regarding the symptoms of cancer, and motivate them to visit the hospital for a cancer screening. Women and all family members should be counseled about the need for cancer screening. Pap smear-positive women need adequate treatment and regular follow-up. Thus, we have to strengthen our health services and healthcare system to include screening at primary health centres. The aim of the present study was to evaluate women for precancerous lesions using the Pap smear test and investigate clinical correlation.

2 | METHODS:

Study design: This prospective study was carried out over 4 month at the , screening of 86 sexually active women who were more than 25 years of age. Women without any complaint, and women with different complaints, including white vaginal discharge, excessive vaginal secretion irregular cycle, and contact bleeding and urinary incontinence were included in this study written informed consent was obtained from all women.

Patients were placed in the lithotomy position, and a sterile bivalve speculum was inserted into the vagina. The posterior vaginal wall was retracted posteriorly and the anterior vaginal wall anteriorly to allow proper visualization of the cervix and vaginal wall.

A sample was taken from the ectocervix by rotating a wooden Ayre spatula 360°. The samples were sent to the Department of Pathology for cytopathological examination. Laboratory results were reported according to the new Bethesda System for Reporting Cervical Cytology 2014. The system broadly divides lesions into those negative for intraepithelial neoplasia and epithelial cell abnormalities (ECA) that include squamous and glandular cells. Treatment was provided according to the stage of the disease.

Ethics approval and consent to participate: Ethical approval was taken by the ethical committee of the Faculty of Medicine, BLINDED FOR PEER REVIEW,

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Supplementary information The online version of this article (10.15520/mcrr.v4i5.125) contains supplementary material, which is available to authorized users.

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Verbal informed consents were obtained from all participants after supplying comprehensive information about the nature of the study

(Reference number not available).

Statistical analysis: data entered and analysed using SPSS software program version 21, qualitative data presented as mean and standard deviation while qualitative data presented as frequency distribution

3 | RESULTS

In this study there were 86 women screened by Pap smear, the Pap smear test of 79.1% of the women was adequately taken, while 20.9% of the individuals had an inadequate sample. The test was negative for malignancy in 29%, and 58.8% had infection or inflammation (17% and 41% for mild and severe inflammation respectively). Atypical squamous cells of undetermined significance (ASCUS) and low-grade squamous intraepithelial lesion (LSIL), were detected in 12%, and 1%respectivelyFigure 1

The age of study participant was ranged from 26-65 years with mean of 41.7±9.4 year, most women were in the age range of 30–50 years (67%) and more than half were multiparous (54.8%). There was 24.7% post-menopausal,

Age of women with ASCUS and LSIL was higher than that of women with inflammation; half of women with ASCUS were in age group of 41-50 and 30% in age group of 51-60, 80% of them were multiparous and 50% were Post-menopausal. Only one case was diagnosed as LSIL, her age was 52 year and Post-menopausal while more than half (56%) of women with inflammation had lower age group 26-40. 50% of them had More than 3 children, and 82% were Pre-menopausal Table 1

hows that 71.8% of the studied women were asymptomatic,white vaginal discharge (9.3%) and irregular cycle (9.3%) was the most common symptoms, contact bleeding in 4.5%, excessive vaginal secretions in 4.7% and urinary incontinence in 1.2%. among ASCUS patients 30% complain irregular cycle, 6% of patients with inflammation complain from excessive vaginal secretion and irregular cycle. Near one third of patients without any lesion complain from whitish vaginal discharge .

hows that on per speculum examination bleed on touch was commonly found in 5.9% of the participants, White discharge per vagina was present in3.5%, hypertrophy of the cervix, small cervix, ectropion, vaginosis, cervical polyp were. Found in 2.4%,

4 | DISCUSSION:

The Pap smear test used as a screening method to detect cervical cancer is an effective way to prevent the development of cervical cancer, but awareness within the community about the Pap smear test is very low. According to the American Cancer Society (2012), the Pap smear test is a routine cancer screening method that should be done every 3 years, and a Pap smear with an HPV DNA test is recommended as a screening method every 5 years (8)

Although cervical cancer is one of the 10 most frequently occurring cancers in middle aged women yet screening programs in Egypt are not properly established. The United States Preventive Services Task Force (USPSTF) recommends that women aged 21 to 29 years should be screened for cervical cancer every 3 years with cervical cytology alone. For women aged 30 to 65 years, the USPSTF recommends either screening every 3 years with cervical cytology alone or every 5 years with high-risk human papillomavirus (hrHPV) testing alone, or every 5 years with hrHPV testing in combination with cytology (co-testing) (9) .Table 2

In the current study inflammation was found in 58% of participants, no lesion among 29% and the abnormal findings represented 13% where 12% were ASCUS and 1% was LSIL. A recent study done in India showed that negative for malignancy in 48.84%, but 42.66% had inflammation and ASCUS represented 2.9%, LSIL 5.09% and HSIL 0.48% of the studied women (10) . Another Saudi Arabian study resulted in 4.95 % squamous epithelial lesions of a total sample of 1171 examined women (11) where a study done in United Arab Emirates showed 1.8 % of (ASCUS), 1.2% of (LSILs), and (HSILs) was found in 0.3% (12) . Other studies (13, 14) reported 95% and

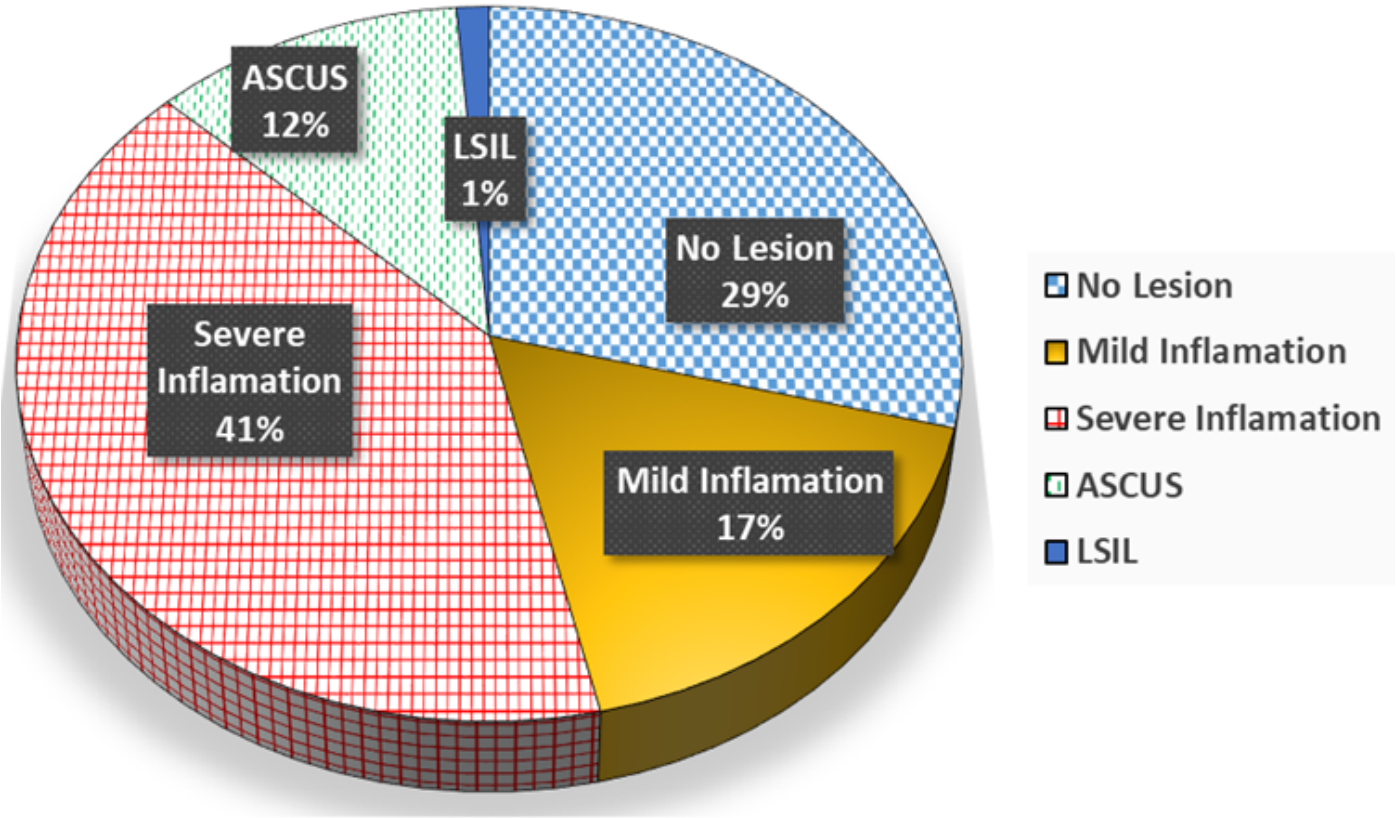

FIGURE 1: Distribution of the studied participantsaccording to Pap smear findings

TABLE 1: Demographic profile of screened patients

Variables	No lesion (n=25)	Inflammation (n=50)	ASCUS (n=10)	Total (N=85)
Age	4(16%)	7(14%)	1(10%)	12(14.1%)
26-30	10(40%)	21(42%)	1(10%)	32(37.6%)
31-40	6(24%)	14(28%)	5(50%)	25(29.4%)
41-50	2(8%)	7(14%)	3(30%)	12(14.1%)
51-60	3(12%)	1(2%)	0	4(4.7%)
More than 60				
Marital status	19(76%)	44(88%)	10(100%)	73(85.9%)
Married	3(12%)	2(4%)		4(4.7%)
Unmarried	3(12%)	4(8%)		1(1.2%)
husband travel abroad				7(8,2%)
Parity	11(45.8%)	25(50%)	2(20%)	38(45.2%)
P1-3	13(54.2%)	25(50%)	8(80%)	46(54.8%)
More than 3				
Pre-menopausal	18(72%)	41(82%)	5(50%)	64(75.3%)
Post-menopausal	7(28%)	9(18%)	5(50%)	21(24.7%)

TABLE 2: Symptoms of Screened Women

Variables	No lesion (n=25)	Inflammation (n=50)	ASCUS (n=10)	Total (N=85)
Asymptomatic	14(56%)	40(80%)	7(70%)	61(71.8%)
White vaginal discharge	6(24%)	2(4%)	0	8(9.3%)
Excessive vaginal secretion	1(4%)	3(6%)	0	4(4.7%)
Irregular cycle	2(8%)	3(6%)	3(30%)	8(9.3%)
Contact bleeding	1(2%)	2(4%)		3(4.5%)
Urinary incontinence	1(2%)	0	0	1(1.2%)

74.5% had inflammation indicated by the Pap smear test, respectively. A few studies (15, 16) reported that women with persistent inflammation should be appropriately treated; otherwise, the chance of development of cervical intraepithelial lesions increases. A repeat Pap smear should be taken after proper antibiotic treatment.

In the present study the abnormal finding was higher in age group 40-60 years, half of women with ASCUS were in age group of 41-50 and 30% in age group of 51-60 years, Only one case was diagnosed as LSIL, her age was 52 year, these finding was in agreement with Sachan et al. who studied cervical cancer screening using pap smear test and clinical Correlation among Indian women and find that abnormal cytology was detected in patients in the age group between 40 and 60 years. Gupta et al. (17) reported that most of the abnormal cytology cases (40.37%) in their study were in the age group of 30–39 years, followed by 35.96% in the age group of 20–29 years.

Vaginal discharge (9.3%) and irregular cycle (9.3%) was the most common symptoms similar to the rate in other studies (8, 10, 17)

This study shows that on per speculum examination bleed on touch was commonly found in 5.9% of the participants, White discharge per vagina was present in 3.5%, hypertrophy of the cervix, small cervix, ectropion, vaginosis, cervical polyp were. Found in 2.4%, with Sachan et al. found that Bleed on touch cervix found in 4.8% of participants and White discharge per vagina was present in 29.6% of women.

5 | CONCLUSIONS

Pap smear testing is a very useful, simple, economical, and safe tool for detecting precancerous cervical epithelial lesions. It should be established as a routine screening procedure to reduce the treatment burden, morbidity, and mortality. Every woman above the age of 40 years should undergo routine cervical cancer screening, even into the postmenopausal period.

List of Abbreviations:

* ASCUS: Atypical squamous cells of undetermined significance

* LSIL: low-grade squamous intraepithelial lesion

* WHO: World Health Organisation

* HSIL: high grade squamous intraepithelial lesion

* HPV: Human Papilloma Virus

* USPSTF: United States Preventive Services Task Force

* hr HPV: high-risk human papillomavirus

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