ORIGINAL ARTICLE

Prevalence of epithelial cell abnormality in Pap smear

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Abstract

Background: Cervical cancer is the most common gynecological malignancy in female and it is the leading cause of high mortality among female in Pakistan. Pap smear is an effective screening tool for early detection of pre-malignant and malignant lesion of cervix.

Objective: To determine prevalence of epithelial cell abnormality in Pap smear

Place of study: Hamdard University Hospital, Department of Obstetrics and Gynecology and Histopathology department.

Material and Methods: A retrospective study was conducted at Hamdard University Hospital, Karachi from June 2020 to June 2021. A detailed history and examination was done and an informed consent was taken before the procedure of Pap smear. After collection of smear it was gently spread on glass slide and glass slide was placed in jar containing formalin. Slide was stained Cytological interpretation was done by microscopic examination in histopathology department.

Results: Total 200 cases were included in the study who undergone the procedure of Pap smear. The age range of patients were 20-65 years with mean age of 41.3. Out of 200 cases 172(86%) were negative for intraepithelial lesion and 23(11.5%) were positive for squamous cell abnormalities. Inflammation was the most common cytological abnormality. 142(71.0%) cases were reported as inflammation and infection. Atypical squamous cell abnormality is seen in 10(5.0%) cases. Low-grade squamous intraepithelial lesion (LSIL) was present in 8(4.0%) cases. High-grade squamous intraepithelial lesion (HSIL) was present in 5(2.5%) cases.

Conclusion: Pap smear is an effective screening tool to detect premalignant and malignant lesion.

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Keywords: Cervical cancer, cervical epithelial cell, Low-grade squamous intraepithelial lesion (LSIL), High-grade squamous intraepithelial lesion (HSIL), Pap smear.

Introduction:

Worldwide, cervical cancer is the most common gynecological malignancy and amongst the major causes of morbidity and mortality.[1] In Pakistan, cervical cancer is the second leading cancer in females under 50 years of age.[2] According to the world cancer data, more than 80% of cervical cancer are found in developing countries.[3] High mortality due to cervical cancer indicates limited health facilities in developing countries.[4] In Pakistan, most of the cases of cervical cancer are reported with advance stage of malignancy. This is due to no establish screening system of cervical cancer in Pakistan.[2,5] Pap smear is a useful screening test for the diagnosis of cervical pre-cancerous and cancerous lesion.[6] Pap smear was first introduced in the 1940's by George Papanicolaou.[7] 2001 Bethesda system is widely used for classification of cervical smear. Global data shows that Pap smear is an effective screening tool in reducing the invasive cervical cancer.[8] Pap smear screening has sensitivity of 50%–75% and specificity of 98%–99%.[9] In Pakistan, where malnourishment related problems are the main

Table 2: Pap smear results according to age group

Age group (years)	Normal cytology	Unsatisfactory sample	Inflammation/ infection	ASCUS	LSIL	HSIL	Total
< 25	03 (1.5%)	0 (0.0%)	05 (2.5%)	1 (0.5%)	0 (0.0%)	0 (0.0%)	9 (4.5%)
25-35	13 (6.5%)	3 (1.5%)	57 (28.5%)	4 (2.0%)	2 (1.0%)	1 (0.5%)	77 (38.5%)
36-45	08 (4.0%)	1 (0.5%)	29 (14.5%)	2 (1.0%)	3 (1.5%)	0 (0.0%)	42 (21%)
46-55	05 (2.5%)	1 (0.5%)	38 (19.0%)	1 (0.5%)	1 (0.5%)	1 (0.5%)	46 (23.0%)
56-65	01 (0.5%)	0 (0.0%)	13 (6.5%)	2 (1.0%)	2 (1.0%)	3 (1.5%)	21 (10.5%)

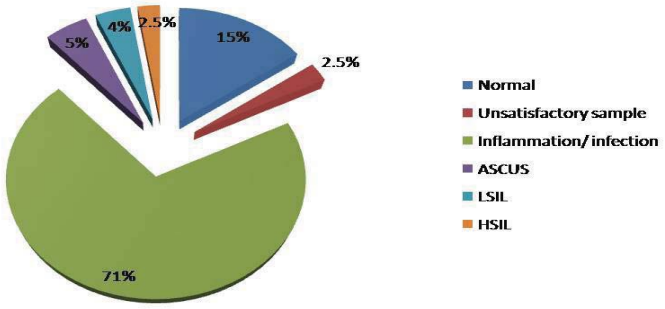

Figure 1: : Pap smear results

focus of health care providers. It is utmost important that organized screening programs for cervical cancer should be started on priority basis. In Pakistan, Pap smear is widely available but due to lack of awareness amongst women, very small number of female undergo this procedure. Education of women at mass level is also required to create awareness about Pap smear.[10]

Material and methods:

This was a retrospective study carried out in Hamdard University Hospital, Karachi from June 2020 to June 2021. The study was carried out after the approval from Ethical Review Committee of Hamdard College of Medicine and Dentistry.

The age of women included in study were 20-65 years. A detailed history and examination was done and informed consent was taken before the procedure of Pap smear. The patient was placed in lithotomy position, a cuscos bivalve speculum was inserted through vagina to visualize cervix. Near the squamocolumnar junction of cervix, Ayres spatula was placed and rotated at 360° and smear was collected and gently spread on glass slide and then slide was placed in jar containing formalin and slide was stained. Cytological interpretation was done by microscopic examination. Interpretation of smear was done by 2014 Bethesda classification.

All data collected were analyzed by using SPSS version 20.

Results:

Total 200 cases were included in the study who undergone the procedure of Pap smear. The age range of patients were 20-65 years with mean age of 41.3. Maximum number of cases were enrolled in the age group of 25-35 years (n=77) followed by the age group of 46-55 years (n=46). Inadequate sample was obtained in 5(2.5%).

Out of 200 cases 172(86%) were negative for intraepithelial lesion and 23(11.5%) were positive for squamous cell abnormalities. Inflammation was the most common cytological abnormality. 142(71.0%) cases were reported as inflammation and infection.

Atypical squamous cell of undetermined significance (ASCUS) was the most common squamous cell abnormality seen in cytology. 10(5.0%) cases were of atypical squamous cell of undetermined significance (ASCUS). Majority of cases of atypical squamous cell of undetermined significance (ASCUS) were in age group of 25-35 years. Low-grade squamous intraepithelial lesion (LSIL) was common in age group of 36-45 years. High-grade squamous intraepithelial lesion (HSIL) was common in age group of 56-65 years as shown in table 1.

Discussion:

Globally, cervical cancer is the 3rd most common cancer and 4th major cause of mortality in wom-

en.[11] Cervical cancer is usually asymptomatic in initial stages so, screening plays an important role in early detection of cancer.[9] The variation in the incidence of cervical cancer in developed and developing countries is directly related to the awareness and organized screening programs for cervical cancer.[12] According to a study, the prevalence of cervical cancer is more common in women above 40 years in the Punjab, the largest province of Pakistan.[13] One of study conducted in Pakistan demonstrate that main hurdles to Pap smear testing were no information, misconception, no family trend of cervical cancer and cost of test.[10]

In our study out of 200 Pap smear majority were performed in the age range 25-35 years followed by aged group of 46-55 years and least in the age group of 56-65 years. In other study conducted in South Africa, 76% Pap smear was done at the age of 39-49 years.[14] A study conducted in Nepal showed that most of the cases of Pap smear belonged to age group of 31-40 years.[15]

In our study inadequate sample for Pap smear were found to be 2.5% which is quite low as compare to the other study conducted in 2011 by Gavranovic L, in which 8% sample of Pap smear were in adequate.[16] Frequent causes of unsatisfactory sample were insufficient endocervical epithelial cells, presence of foreign material and increase thickness of smears. In other study prevalence of unsatisfactory Pap smear were 3.1%.[17]

In our study normal cytology were in 15.0% cases. A study conducted in 2017 demonstrate 40.6% cases of normal Pap smear cytology.[18] Most of the women only give consent for Pap smear procedure when they are symptomatic, this was the reason for low prevalence of normal Pap smear cytology in our study.

In our study, 71.0% cases were presented with inflammation and most common age group age presented with inflammation was 28-25 years. In other study conducted in India, 42.6% Pap smear were reported as inflammation and most age group with inflammation was 20-30 years.[19]

In this study, most common squamous cell abnormality was found to be atypical squamous cell of undetermined significance (ASCUS(5.0%) and the majority of cases were in aged group of 25-35 years. These findings are similar to the other study in which ASCUS were reported 5.7%, in contrast to our study most common aged group reported ASCUS was 51-60 years.[19]

In our study, Low-grade squamous intraepithelial lesion (LSIL) was found to be 4.0% cases. In other study LSIL was reported 5.5%.[5] In our study most of LSIL belonged to the age group 36-45 years while in other study maximum of LSIL cases were reported in aged group 41-50 years .

In our study, High grade squamous intraepithelial lesion was 2.5%. In other study cases of HSIL was 1.4%.[20] In this study majority of HSIL cases were in aged group of 55-65 years. Cervical cancer is more common in age above 40 years therefore high incidence of HSIL occur inold age group. In other study maximum cases of HSIL were reported in 51-60 years aged group.

Conclusion:
Pap smear helps to detect premalignant and malignant lesion of cervix. Inflammation was most common finding in this study. Appropriate measures are needed to create awareness about screening of cervical cancer.

Conflict of interest: None

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Role and contribution of authors:
Farah Khan collected the data, references and did the initial write up.

Sehrish Khurshid collected the data and helped in introduction writing.

Saira Jamshed collected the data and helped in discussion writing.

Ayesha Kashmala Ghauri, collected the reference and interpretation of data.

Arif memon critically review the article and made final changes.

Dr Noureen waleem, review the article and advised useful changes.

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