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Frequency of abnormal cervical cytology in symptomatic women.

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ABSTRACT… Objective: To estimate the frequency of abnormal cervical cytology detected by Pap smear. **Study Design:** Cross Sectional Study. **Setting:** Department of Obstetrics and Gynaecology Gambat Institute of Medical Sciences Gambat, Khairpur Sindh. **Period:** November 2018 to June 2019. **Material & Methods:** A total of 160 women with the complaint of heavy vaginal discharge and moderate to servere lowere abdominal pain more than 6 weeks were included in this study. Per speculum examination of cervix was carried out with the help of cuscos speculum before PAP smear and finding were noted, After labeling the sample was sent to histopathology for cytological examination. **Results:** The average age of the patient's was 37.68±7.46 years. Percentage of normal smears 10%, advance disease 1.3% and percentage of inflammatory smear is 63.8% while frequency of abnormal cervical cytology was observed in 25% in which CIN-1 was 12.5%, CIN-2 was 11.3% and CIN-3 was 1.3%. **Conclusion:** Our population have large numbers of undiagnosed cervical diseases. Therefore, Pap smear testing should be widely used throughout Pakistan to reduce the incidence of cervical cancer.

Key words: Cervical Smear, Cervical Cytology, Carcinoma in Situ, Inflammatory Smear.

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INTRODUCTION

Cervical smear technique was introduced in gynecological practice by George papanicolaou in 1943. All sexually active women between 20-60 years are recommended to have cervical cytology every three years. This will detect pre-malignant lesions and timely management will prevent the development of malignant disease.[1] It is a simple, safe, non-invasive and cost-effective method. Most squamous cell cervical cancer progress through a series of well define precancerous lesions that can be detected easily by pap smear screening.[2] Since introduction of the pap's smear, the incidence of cervical cancer has fallen dramatically. This fall is particularly seen in countries with well-established cervical screening programs such as the USA where it is considered the sixth most common cancer in women with 13000 cases of invasive carcinomas and 55000 cases of carcinoma is situ diagnosed annually.[3]

These different types of cervical smear abnormalities are identified with varying prevalence depending upon certain factors. These factors include age of women screened, socioeconomic status, education status and prevalence of sexually transmitted disease in the screened population.[4] Layla reported prevalence of negative smears 77%, 18% smears reported as inflammatory/reactive changes and 5% were diagnosed as for cervical epithelial abnormalities.[5]

An important factor determines prevalence of cervical smear abnormalities is age. A study conducted at sir Ganga Ram Hospital in which study maximum percent of inflammatory smear was seen more frequently in age group 31 to 40 years. Squamous metaplasia with atypia was maximum in age group 51 – 60 years. CIN-1 is reported in relatively younger age. Age group between 51-60 years was at risk of advanced CIN.[6] Another study conducted at Gynecology and Obstetrics of Sheikh Zayed Medical complex and Sir Ganga Ram Hospital from June to May 2006, A total of 1500 smears were taken. Prevalence of

positive cases was 3.9% with majority of (2.5%) falling in the age group 35-40 yrs.

This study was to prove the magnitude of abnormal cytology, so policy could be devised to raise the awareness of women, this will help in early reporting of the cases which can lead to good prognosis.

MATERIAL & METHODS

This Cross sectional study was conducted at Department of Obstetrics and Gynecology, after the ethical approval (PAQSJIMS/REC/UTI/2018) of Gambat Institute of Medical Sciences Gambat, Khairpur Sindh, from 1st November 2018 to 30th June 2019. Non-Probability consecutive sampling technique was used. Data were collected through outdoor patients with detailed history and thoroughly examination. All sexually active women between age 21 to 50 years presenting with the complaint of heavy vaginal discharge and moderate to server lower abdominal pain more than 6 weeks were included. While exclusion criteria were unmarried girls, post-menopausal women, pregnant, known cases of CA cervix and having heavy vaginal bleeding the time of taking Pap smear.

They were counselled about the importance of Pap smear screening and consent was taken from them after explaining the procedure. Their detailed history was taken including demographic information and presenting complaints and documented on performa. Per speculum examination of cervix was carried out by cuscus speculum (instrument) before pap smear and finding will be noted on Performa, Pap smear was taken by disposable plastic spatulas (instrument of pap smear) scrapings from squamo-columnar junction of cervix was spread on glass slide and dipped in methanol sprit container. After labeling the sample was sent to histopathology department for cytological examination.

Data was analyzed in SPSS using version 20. The variables analyzed were demographic, cervical smear outcome including inflammatory, CIN-1, CIN-2, CIN-3, invasive disease. Qualitative data like age, parity, duration of disease were presented as frequency and percentage. Effect modifier like age, parity, duration of disease was controlled through stratification through Chi-square test. $P \leq 0.05$ was considered as significance.

RESULTS

A total of 160 sexually active women between age 21 to 50 years presenting with the complaint of heavy vaginal discharge and moderate to serve lowered abdominal pain more than 6 weeks were included in this study. Most of the patients were above 30 years of age as shown in Table-I. The average age of the patients was 37.68 ± 7.46 years (95% CI: 36.52 to 38.8) similarly average duration of disease was 5.75 ± 2.03 months as presented in Table-I. Out of 160 women, 38.8% had multi parity (parity 2 to 5), 46.3% were grand multipara (parity >5) and 15% were primipara as shown in Table-I.

Percentage of normal smears 10%, advance disease 1.3% and percentage of inflammatory smear is 63.8% while frequency of abnormal cervical cytology was observed in 25% in which CIN-1 was 12.5%, CIN-2 was 11.3% and CIN-3 was 1.3% Table-II.

Rate of abnormal cervical cytology CIN-1, CIN 2 and CIN 3 was significantly high in 31 to 50 years of age. Age group between 41-50 years was at risk of advanced disease. Similarly rate of abnormal cervical cytology CIN-1, CIN 2 and CIN 3 was significantly high in multi parity and grand multiparty as compare to primiparity Table-III. Frequency of abnormal cervical cytology detected by Pap smear by duration of disease is presented in Table-IV.

DISCUSSION

In developing countries mostly women affected cervical cancer. "An estimated 260,000 people die each year, about 80% of which occur in developing countries. Continued infection with certain oncogenic strains of HPV is strongly established as a necessary cause of premalignant and malignant cervical lesions.[8] Most cervical cancers start in the area of the dysplastic epithelium that can be found with a Pap smear. Most of countries have developed organized screening programs

for cervical malignancy.[9] Incidence and mortality rates have markedly decreased by 60–90% due to organized screening" programmes.[10]

Variable	Frequency
Age Groups	
• 20-30 Years	36(22.5%)
• 31-40 Years	62(38.75%)
• 41-50 Years	62(38.75%)
Parity Distribution	
• Primipara	24(15%)
• Multi parity	62(38.8%)
• Grand multipara	74(46.3%)
Frequency of abnormal cervical cytology detected by pap smear	
• Normal Smear	16(10%)
• Inflammatory	102(63.8%)
• Abnormal Cervical Cytology CIN-1 CIN-2 CIN-3	40(25%) 20(12.5%) 18(11.3%) 2(1.3%)
• Advance Disease	2(1.3%)

Table-I. Different variable. (n=160).

Pap Smear Report	Age Groups		
	21-30 Years n=36	31-40 Years n=62	41-50 Years n=62
Abnormal Cervical Cytology			
CIN-1	0(0%)	10(16.1%)	10(16.1%)
CIN-2	0(0%)	7(11.3%)	11(17.7%)
CIN-3	0(0%)	1(1.6%)	1(1.6%)
Advance disease	0(0%)	0(0%)	2(3.2%)
Inflammatory	33(91.7%)	37(59.7%)	32(51.6%)
Normal Smear	3(8.3%)	7(11.3%)	6(9.7%)

Table-II. Frequency of abnormal cervical cytology detected by pap smear by age groups. (n=160)

Pap Smear Report	Parity		
	Primipara n=26	Multipara n=62	Multipara n=62
Abnormal Cervical Cytology			
CIN-1	0(0%)	8(16.1%)	12(16.2%)
CIN-2	0(0%)	14(11.3%)	4(5.4%)
CIN-3	0(0%)	0(0%)	2(2.7%)
Advance disease	2(8.3%)	0(0%)	0(0%)
Inflammatory	20(83.3%)	34(54.8%)	48(64.9%)
Normal Smear	2(8.3%)	6(9.7%)	8(10.8%)

Table-III. Frequency of abnormal cervical cytology detected by pap smear by parity. (N=160).

Chi-Square= 31.85; p=0.0005

Pap Smear Report	<6 Months n=87	≤6 Months n=73
Abnormal Cervical Cytology		
CIN-1	4(4.6%)	16(21.9%)
CIN-2	10(11.5%)	8(11%)
CIN-3	2(2.3%)	0(0%)
Advance disease	2(2.3%)	0(0%)
Inflammatory	56(54.4%)	46(63%)
Normal Smear	13(14.9%)	3(4.1%)

Table-IV. Frequency of abnormal cervical cytology detected by pap smear by duration of disease. (N=160). Chi-Square= 17.56; p=0.004

Unfortunately, in the poorest countries, Pap smear tests have not been successful or failed to reduce the risk of cervical cancer. Cervical cancer in these countries therefore continues to be a major public health problem.[11] In developing countries, cervical cancer accounts for 15% of all cancers in women compared to <4% in developed countries. There is a significant reduction in cervical cancer incidence in the United States and other developed countries, but in developing countries such as Pakistan there are still high rates due to insufficient Pap smear.[12,13] Therefore, papanicolaou smear is a powerful early detection tool (CIN), reducing the risk of cancer and death.[14]

Most studies have reported abnormal cytology between 40 and 60 years age group.[15] In our study was observed average age of the patients 37.68±7.46 years. Compare with the study of Gupta et al. reported that most of the abnormal cytology were seen 30–39 years age group.[16]

Cervical dysplasia has been correlated with increased parity. In the present study, "grand multiparous was associated with positive pap smears in 46.3% cases. However international study reported that women conceived more than four pregnancies was associated high risk and women having more than one sexual partner. In another international study reported cervical intraepithelial neoplasia and cytology (positive) for malignant cells founds in para three and above

women.[17,18] Compared with study of Umbreen Naz conducted in Pakistan and reported that most of the patients with results of positive smears were grand multiparous i.e. Para 6 - 8 (57%) eight patients.[19]

In this study frequency of abnormal cervical cytology was observed in 25% in which CIN-1 was 12.5%, CIN-2 was 11.3% and CIN-3 was 1.3%.compare the study conducted by Saleem and Tahir[20] on 22 patient, shows commonly 46% squamous intraepithelial neoplasia low grade (CIN-I mild dysplasia), followed by moderate dysplasia (CIN-II) in 13 (27%), severe dysplasia (CIN-III) in 8(17%) and 4(8.5%) patients had malignant lesions.

In this study 63.8% patients showed inflammatory smear, however in comparison the study of saleem reported 58%.[20]"However in another study 47% showed inflammatory smear, and only 28.25% in Zamani study.[21] The infection rate is high in our population, probably due to repetitive hygiene and malnutrition, which has a low impact on resistance to infection. Several studies have accepted that the Pap smear test is a widely accepted method for diagnosing early detection of cervical dysplasias. In Pakistan, no formal testing program has ever been planned. Almost all studies are based solely on the hospital. The Pap smear test is a simple and effective test and should be used widely.[22]

Rate of abnormal cervical cytology CIN-1, CIN 2 and CIN 3 was significantly high in 31 to 50 years of age. Age group between 41-50 years was at risk of advanced disease. Similarly rate of abnormal cervical cytology CIN-1, CIN 2 and CIN 3 was significantly high in multi parity and grand multiparty as compare to primiparity. Similar result was also observed in Sohail et al[1] study the mean age of diagnosis of cervical intra-epithelial neoplasia (CIN) was 39.06±5.36 years. Low socio-economic status and high parity were major risk factors for this study.

In Waheed and Ijaz study[23], among 50 patients 22 (44%) were in the range of 25-35 years and 18 (36%) were between 36-45 years. 26 women (52%) were more than P4, however in another study conducted in 2006 in Chiang Mai University, Thailand and Brazil which showed increase in invasive cancer rate with additional pregnancy and age which doubling the odds with each 13 year of age.[24]

CONCLUSION

This study show that our population has significant number of premalignant cervical disease. So screening with pap smear should have wide application all over the Pakistan to reduce the incidence of cervical cancer." The policy could be devised to raise the awareness of women, this will help in early reporting of the cases and early diagnosis can lead to good prognosis.

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