Original Article

PAP Smear Screening in Women Presenting with Chronic Discharge At a Tertiary Care Setting

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ABSTRACT:
Objective: To determine the frequency of precancerous conditions of cervix (squamous cell lesions) in women with chronic vaginal discharge by Pap smear screening.
Study Design: Descriptive Study
Place and Duration: : The study was conducted at the outpatient department of Obstetric and Gynaecology, in a private setup from January 2005 to December 2010.
Materials and Methods: One hundred and sixty patients with complaint of chronic vaginal discharge were consecutively sampled their Pap smears taken and samples were sent to Laboratory for cytological examination. All low grade squamous intraepithelial lesions (LSIL) cases were advised follow up with repeat Pap smear in 6–12 months and those high grade squamous cells intra epithelia lesions (HSIL) were further investigated by cervical biopsy and managed accordingly.
Results: Of the total, 56 patients were between 25–30 years of age, and 104 between 31–35 years of age. Mean age of patients was 31.6 years, mean age at marriage 21.7 years, and mean parity was 3.6. Most of the patients (67.9%) belonged to low socioeconomic status. The cytological examination of the smears showed no changes (normal) in 61 (38.1%) cases while 88 (55%) cases showed inflammatory changes, 08 (5.0%) showed dysplastic changes, of whom 6 cases had LSIL (3.8%) and one case(0.6%) was of moderate dysplasia (HSIL). One(0.6%) was having severe dysplasia (HSIL). Inadequate sample was reported in 03 (1.9%) cases.
Conclusion: Pap smear should be used as a routine test for all sexually active, young females presented to the gynecology outpatient department, for early detection of cervical pre cancer as it is not uncommon in our set up.
Keywords: PAP Smear, Cervical intraepithelial lesion.

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Introduction

Cervical carcinoma is the most common malignancy among women worldwide. Its high mortality makes.
Cervical cancer an important public health problem. Epidemiological and molecular biological studies have shown that persistent infection with high risk HPV is necessary in the pathogenesis of cervical cancer at present. Most cervical carcinomas are considered to harbor oncogenic types of HPV type 16, 18, 45, 31 and 33 being the most frequently identified viruses in these lesions [1] Other risk factors for CIN include, early age at marriage, multiple marriages of self or spouse, multiparity, prolonged use of contraceptives, and smoking.[2] The peak age of incidence of precancerous lesions of cervix peaks with the occurrence of pregnancies in the age ranges 25–35 years.[3] Black women have a higher incidence of cervical cancer than white women and are 2.5 times more likely to die of this disease. The death rate from cervical cancer for Hispanic, American Indian and Asian woman also is higher than for white women.[4] Most of the cancer causing virus infection clear within two years, however for every one million women who are infected with cancer causing virus types, approximately 10 % (100,000) will develop abnormal and precancerous cervical changes, known as cervical dysplasia. About 8% of women (8,000) with abnormal and precancerous cervical cells will develop early cancer confined to the outer layers of cervical cells and 1,600 of these women will go on to develop invasiv e cervical cancer.[5] Cervical cancer progresses slowly (10–20 years) from preinvasive CIN to invasive cancer, and therefore , screening for dysplasia is an important public health effort worldwide. It is widely accepted that detection and treatment of HPV related dysplastic epithelial changes in the form of HSIL can prevent the development of invasive cervical cancer in individual patients .[6] The incidence of cervical cancer has decreased more than 50% in the past 30 years because of widespread screening with cervical cytology. Mortality from the disease has undergone a similar decrease.[7] Screening coverage in developing countries is extremely low, resulting in high morbidity and mortality due to cervical cancer. In developing countries, barriers to cervical

cancer screening uptake include absence of knowledge about the disease, lack of familiarity with the concept of preventive health care, geographic and economic inaccessibility of services, poor quality of services, and lack of support from families and communities.[8] All women of reproductive age, peri-and postmenopausal age groups, para 5 and above, low socioeconomic status and teenage married should undergo regular screening by Pap smear for carcinoma cervix every 3 years in age 25–49 years, and every 5 years in age 50–64 years.[9,10]

There is an association of chronic vaginal discharge with cervical cancer and the aim of the study was to screen women with chronic vaginal discharge for frequency of precancerous conditions of the cervix in a hospital based population.

Materials and Methods

Sexually active patients attending Gynaecology OPD of Afzal Hospital Abbottabad with complaint of chronic vaginal discharge were selected. Those with pregnancy and diagnosed cervical malignancy were excluded from study. A written consent was obtained and the demographic and other variables like age, age of marriage, parity, use of oral contraceptives, habit of smoking, number of marriages/sexual partners, socioeconomic status were recorded. A speculum examination of cervix was carried out before Pap smear and if vaginal discharge was visible Pap smear was taken after treating with an antibiotic for a week. Pap smear was taken with a disposable wooden spatula. Scrapings from squamo-columnar junction of cervix, were spread on a glass slide and dipped in absolute ethanol at least for 20 minutes and sent for cytological examination. The slides were stained with Papanicolaou stain, screened and reported by a consultant pathologist. The result of cervical smear was reported as inflammatory smear, negative for malignancy, low grade squamous intraepithelial lesion or High grade intraepithelial lesion.

Results

During the study period, 160 patients underwent cervical smear screening. The demographics are given in the table.

All cases were found in patients between 29–40 years of age. As most of the patients in the study were multiparous had parity >2, dysplastic smears were found in these multipara, 4 cases (50%) in patients with a parity of 4, two cases (25%) with parity 3, and remaining two cases (25%) with parity 5.

Most 109 (68.2%) of the patients, belonged to low socioeconomic status, 51 (31.8%) patients belonged to an average socioeconomic class. Ninety percent of CIN cases detected in women with low socioeconomic class and 10% in middle class. Age at marriage was <20 years in 168 patients and 6 (60%) cases of dysplastic smears were found in this group. Two cases (40%) in women had >20 year age at marriage. Out of 160 patients, 20 were pill users and out of these, 6 (30%) patients had squamous intraepithelial lesion. Out of 160 patients, 9 (5.6%) gave history of ≥2 marriages (exposure to multiple male partners), 4 of these were having mild dysplasia low squamous intraepithelial lesion (LSIL). Five patients (3.1%) were smokers with no dysplastic smears. Out of 160 patients' smears, 61 (38.1%) smears were normal, 88 (55%) showed inflammatory changes, 08 (5.0%) smears showed dysplastic changes, 03 (1.9%) smears were inadequate. 08 (5%) showed dysplastic changes, of whom 6 (3.8%) cases were of LSIL, 2 (1.2%) cases were diagnosed as HSIL out of which 1 (0.6%) case was of HSIL with moderate dysplasia and 1 (0.6%) was having HSIL sever dysplasia.

Table: Frequency of lesions (n=160)

Lesion	Frequency	Percentage
Normal	61	38.1
Inflammatory	88	55
Inadequate	3	1.9
LSIL	6	3.8%
HSIL with moderate Dysplasia	1	0.6%
HSIL with severe Dysplasia	1	0.6%
Total	160	100%

Legends:
LSIL: low grade squamous intraepithelial lesion
HSIL: High grade squamous intraepithelial lesion

Discussion

Cervical cancer is the most common cancer affecting women in developing countries. It has been estimated to have been responsible for almost 260,000 deaths annually, of which about 80% occurring in developing countries. Persistent infection by certain oncogenic HPV types is firmly established as the necessary cause of most premalignant and malignant epithelial lesions of the cervix.[11]

Most cervical cancers start from an area of dysplastic epithelium which can be detected well by taking good Pap smear[12] but we lack national screening programs in Pakistan. Unfortunately, in Pakistan, Pap screening has either not been effectively implemented or has failed to reduce cervical cancer rates. Cervical cancer thus remains a major public health problem.[14]

The association of chronic vaginal discharge and cervical cancer is well known, however majority are just

treated with antibiotics and a follow up screening with pap smear is not a routine practice in our hospitals.

The results of this study have clearly demonstrated that if such strategy is adopted, we can detect 8% of the dysplasia that may have progressed to cervical cancer. The false-negative Pap smear rate, reported between 5% and 30%, may be a barrier to detection. To correct this, new regulations and new technology have been introduced. However, to reduce deaths from cervical cancer, lowering the false -negative rate may not be as important as having regular Pap smears.[14]

Our study is comparable with Khan's study at National Institute of Health, Islamabad, in which 55.31% cases showed inflammatory changes, 3.12% cases had dysplastic changes, 1.83% had low grade squamous intraepithelial lesion (LSIL), and 1.29% had high grade squamous intraepithelial lesion (HSIL).[15] Similarly, Frequency of dysplastic smears was found to be 4.16% by Nausheen[16] and 6.12% in another study.[17] In Khattack's study, frequency was found to be 2.6%.[18]

We found the most frequent risk factors as multiparty, low socioeconomic status, and early age at marriage. Oral contraceptive pills use is associated with development of CIN with subsequent development of cervical carcinoma if left undiagnosed. This is in agreement with Solis et al.[19] Cigarette smoking in women is less common in our society. Only 5 (1.78%) patients in our study were smokers with no dysplastic smears noted in these patients. Conversely, a meta-analysis showed that risk of squamous cell cervical cancer was increased by almost 50% in current smokers, although there was no risk increase for adenocarcinomas.[20] The most important factors hindering the use of available cervical cancer screening services were lack of knowledge. There is very poor knowledge and practice of cervical cancer screening among women. Effective women's education and free mass screening are necessary for a successful cervical cancer screening programme.[21]

Conclusion

Pap smear should be used as a routine test for all sexually active women especially with Complaints of chronic vaginal discharge, for early detection of cervical precancerous conditions.

References

1. Zhu J, Norman I, Elfgren K, Gaberi V, Hagmar B, Hjerpe A, et al.,Acomparison of liquid-based cytology and Papsmear as a screening method for cervical cancer. Oncology Reports 2007;18:157–60.
2. Shafi MI. Premalignant and malignant disease of cervix. In: Edmonds DK, (editor). Dewhurst's textbook of obstetrics and gynaecology. London: Blackwell Science; 2008. p. 614–24.
3. Nygard M, Daltveit A-K, Thorson SØ, Nygard JF. Effect of an antepartum pap smear on the coverage of a cervical cancer screening programme: a population based prospective study. BMC Health Services Research2007, 7:10. Available from :http://www.biomedcentral.com/1472- 6963/7/10
4. American Cancer Society: Breast and Cervical Cancer Forum, St. Petersburg, Florida:ACS; 2000.
5. GlaxoSmithKline. Cervical Cancer, Key Facts. gsk 2007. Available at: http://multivu.prnewswire.com/mnr/cervarix/27285
6. Behtash N, Mehrdad N. Cervical cancer: screening and prevention. Asian Pac J Cancer Prev2006;7:683–6.
7. Ries LA, Melbert D ,Krapcho M, Stinchocomb DG, Howlader N, Horner MJ, et al,editors. SEER cancer statistics review, 1975-2006.Bethesda (MD): National Cancer Institute; 2009. Available at: http://seer.cancer.gov/csr/1975_2006. Retrieved August 25, 2009.
8. Blanks RG, Moss SM, Coleman DA, Swerdlow AJ. An examination of the role of opportunistic smear taking in the NHS cervical screening programme using data from the CSEU cervical screening cohort study. BJOG 2007;114:1408–13.
9. Parveen S, Sajjid R, Masood M, Usmani HA, Sadiq R, Yunus N, et al, Cervical cancer: Outcome of treatment and causes of failure. J Pak Med Assoc2006;56:436–40.
10. IKram M, Talib W, Chatha S, Saeed R, Saeed M. Carcinoma of cervix. Professional Med J2005;12:392–6.
11. Castellsague X. Natural history and epidemiology of HPV infection and cervical cancer. Gynecol Oncol2008;110(3 Suppl 2):S4–7.
12. Imtiaz F, Hasan SM, Ayub S, Memon A, Zaidi SAH. Significance of Pap Smear in diagnosing endometrial carcinoma. J Liquat Uni Med Health Sci2005;4(1):10–3.
13. Franco EL, Coutlee F, Ferenczy A. Integrating human papillomavirus vaccination in cervical cancer control programmes. PublicHealth Genomics2009;12(5–6):352–61.
14. Foulks, MJ. The Papanicolaou Smear: It's Impact on the Promotion of Women's Health. J Obstet Gynecol Neonat Nurs2006;27:367–73.
15. Khan MS, Raja FY, Ishfaq G, Tahir F, Subhan F,Kazi BM. PAP Smear Screening for Pre-cancerous Conditions of the Cervical Cancer. Pak J Med Res2005;44(3):111–3.
16. Nausheen A, Karim SA. The screening for Cervical Cancer by PAP Smear in hospital basedpopulation. Ann Abbasi Shaheed Hosp Karachi Med Dent Coll2004;9:544–7.
17. Kos M, Sarkanj- Golub R, Cupiic H, Balicevic D. The correlation of inflammation and epithelial changes in the pap smears of cervix uteri. Acta Med Croatica2005;59:297–302.
18. Khattak ST, Khattak I, Akhtar TS, Jamal T.Detectionof Abnormal Cervical Cytology by Pap Smears. Gomal J Med Sci2006;4(2):74–7.
19. Solis MT, Aguayu F, and Vargas M, Olcay F, Puschel K, Corvalán A, et al. Risk factors associated with abnormal cervical cytology among Chilean women: A case control study. Rev Med Chile 2010;138:17580.
20. Berrington de Gonzalez A, Sweetland S, Green J.. Comparison of risk factors for squamous cell and adenocarcinomas of the cervix: a meta- analysis. Br J Cancer, 2004;90:1787–91.
21. Nwankwo KC, Aniebue UU, Aguwa EN, Anarado AN, Agunwah E.Knowledge attitudes and practices of cervical cancer screening among urban and rural Nigerian women: a call for education and mass screening. Eur J Cancer Care (Engl)2011;20(3):362–7