DOI: https://doi.org/10.54393/pjhs.v3i05.96

PAKISTAN JOURNAL OF HEALTH SCIENCES

https://thejas.com.pk/index.php/pjhs

Volume 3, Issue 5 (October 2022)

Original Article

Frequency of Abnormal Pap Smear Cytology in Women with Post-coital Bleeding

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ARTICLE INFO

Key Words:
cervical cancer, PAP smear, post-coital bleeding

How to Cite:
Khan, S. ., Bai, V. ., Rehman, M. ., Majid, E. ., Dembra, G. ., Dembra, P. ., & Bano, K. . (2022). Frequency of Abnormal Pap Smear Cytology in Women with Post-Coital Bleeding: Abnormal Pap Smear Cytology in Women with Post-Coital Bleeding. Pakistan Journal of Health Sciences, 3(05). https://doi.org/10.54393/pjhs.v3i05.96

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Received Date: 8th September, 2022
Acceptance Date: 21st October, 2022
Published Date: 31st October, 2022

ABSTRACT

Risk of development of cervical carcinoma has been identified in patients with abnormal cytology on Pap smear. A long duration of prior to development of invasive cervical carcinoma is governed by a precancerous lesion. Consequently, screening and proper treatment reduces the overall risk of cervical carcinoma. **Objective:** Aim of study was to identify the frequency of abnormal cervical cytology detected by Papanicolaou smear in married child bearing female presenting with bleeding following coitus. **Methods:** A Descriptive, Cross-sectional study was carried from 15th November 2021 to 31st May 2022 in the Department of Obstetrics and Gynecology, Jinnah Post graduate Medical Centre, Karachi. A total of 218 females of reproductive age group (18-50 years) presenting with post-coital bleeding were included. Patients with previously histo pathological diagnosis, ablative or excisional treatment modalities of cervix and trauma to genital tract were excluded. All cases underwent Pap smear testing with standard technique by utilization of Ayre's spatula and were fixated with 95% ethanol on microscopic slides. Two specimens were prepared for each patient and were assessed for abnormalities. **Results:** Patients encountered were between 18 to 50 years with mean of 32.20 ± 7.80 years. Majority (139; 67.43%) of the patients were between 18 to 35 years. Mean parity was 3.53 ± 1.51. Mean BMI was 29.12 ± 2.37 kg/m2. Frequency of abnormal cervical cytology was found in 37 (16.97%). **Conclusions:** This study concluded that Pap smear is an easy, effective and a cheap method for detecting women with cervical pathology.

INTRODUCTION

Tumors of female genital tract have different patterns of dispensation throughout the world with discrepancies based on ethnicity, geography and environment. As a result, their presentation may vary from place to place and they are responsible for ~10% of all malignancies diagnosed in females [1]. Globally cervical carcinomas (CC) are the second most prevalent tumors among women. They constitute 500,000 of the newly diagnosed cases and 250000 of deaths each year. More than two third of cases are encountered in third world countries, where they are found to be the main cause of female mortality secondary to malignancies [2]. More than 90% of females affected with CC have found to be infected with Human papillomavirus (HPV). However, this should not be inferenced that all women with HPV infections will develop cervical carcinoma [3]. Less important but other factors contributing to CC are smoking, poor immune response, birth control pills, early age for sexual activities and multiple partners [4]. Unlike many cancers, easy accessibility of cervix permits earlier diagnosis and prevention. Economical methods have aided in identification of abnormal cervical tissues before they advance to invasive cervical cancers [5]. United States and other developed countries reported dramatic reductions in both the incidence and mortality of female with CC following application of organized screening programs. This decline has been attributed to earlier diagnoses, easily obtainable treatment, reduction in parity and other factors

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[6]. Developing countries when compared to United States and other developed regions still report a higher incidence of cervical carcinoma which is likely to the lack of screening with Papanicolaou (Pap) smears [3]. Papanicolaou smear detects cervical cancer in its early precancerous stage, as a consequence it can be treated effectively [3]. The Papanicolaou (Pap) test is a screening test that is carried out by obtaining cells from the uterine cervix. In 1943 George Papanicolaou introduced it as a tool for screening the cervix, which led to the test being credited to his name. It is quick, simple and painless [4-8]. In a study, abnormal Pap smear cytology was found in 56% women presenting with vaginal bleeding [9]. In another study, abnormal Pap smear cytology was found in 14.1% women [10]. Kolawole OM et al [11] has shown abnormal cervical cytology on PAP smear in 7.0% women. Duru CB et al [12] has shown the prevalence of abnormal PAP smear cytology in up to one fourth of women. Since the likely hood of developing cervical cancers in abnormal Pap smear females are high they should be subjected to appropriate triage and medical care to reduce the overall risk of developing CC [5]. Post-coital bleeding (PCB) is considered as one of the important indicators for the presence of invasive cervical carcinoma. On this account, these women should always be investigated. Pap smear remains an easy, effective and a cheap method for detecting cervical pathology. This conducted was study to identify the frequency of abnormal cervical cytology detected by papanicolaou smear in married females of reproductive age presenting with PCB in local population. Majority of our population does not consult the clinicians for post-coital bleeding due to some religious and social concerns which led to their late diagnosis and management of the issue. Cervical screening programs should be made a norm in our and other developing countries so that a potentially curable disease may not present in its later advanced stages. Majority of our population present in late stages of disease due to lack of screening programs, health care, awareness of the disease and the decreasing number of healthcare practitioners. This study will provide empirical evidence regarding this cervical cancer and emphasize on early detection and its management. Our aim was to determine the frequency of abnormal pap smears in females presenting with post coital bleeding.

METHODS

A descriptive, cross-sectional study was conducted in the Department of Obstetrics and Gynecology, Jinnah Postgraduate Medical Centre, Karachi from 15th November 2021 to 30th May 2022. All women of age 20-50 years and parity 0-5 with post-coital bleeding of duration >7 days (defined as bleeding unrelated to menstruation that occurs during or after sexual intercourse assessed on history was taken as positive) were included in the study. Pregnant women, or women with previously histopathological diagnosis (assessed on history and medical record), or previous total hysterectomy, or previous ablative or excisional treatment modalities of cervix or trauma to genital tract (assessed on history) were excluded. Women full filling inclusion criteria were included in study after ethical approval from institutional review board written consent was obtained from all study participants. Pap smear was done by same consultant gynecologist and cytology results was noted for inflammation, LSIL and HSIL (as per-operational definition). Abnormal Pap smear was defined as all of Inflammatory: presence of nuclear enlargement, perinuclear halos and cytoplasmic vacuolization. Low grade squamous intraepithelial lesion(LSIL): 10-40% cells show abnormal changes in squamous cells (flat, scale-like cells) with nuclear atypia, increased mitotic figures and nuclear cytoplasmic ratio >1. High grade squamous intraepithelial lesion(HSIL): 50-60% cells show abnormal changes in squamous cells (flat, scale-like cells) with nuclear atypia, increased mitotic figures and nuclear cytoplasmic ratio >1. Data including demographic data (age, parity, BMI, place of living, duration of post-coital bleeding, menopausal status, family history of cervical cancer and abnormal PAP smear cytology i.e. inflammation, LSIL and HSIL) were recorded on a specially designed proforma. Sample size calculated with 95% confidence level for this study was 164 with a 3% margin error and anticipated percentage of 4% of HSIL on Pap smear in females presenting with PCB. SPSS version 20.0 was utilized for data entry and analysis. Age, parity, duration of post-coital bleeding and BMI were presented as mean and standard deviation. Place of living (rural/urban), menopausal status (pre-menopause/post-menopause), family history of cervical cancer (yes/no) and abnormal Pap smear cytology i.e. inflammation, LSIL and HSIL (yes/no) were presented as frequency and percentage.

RESULTS

Age, duration of post coital bleeding, parity, BMI, family history of cervical cancer, cervical cytology with respect to age and parity, duration of bleeding, menopausal status.

Stratification of abnormal cervical cytology with respect to family history cervical cancer is presented in table 1.

Variables	Frequency(%)
Age (in years)	Mean ± SD = 32.43 ± 7.89
20-35	110(67.1%)
36-50	54(32.9%)
Duration (days)	
≤14	108(65.9%)
>14	56(34.1%)

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Parity	Mean ± SD = 3.55 ± 1.54
≤3	82(50%)
>3	82(50%)
BMI (kg/m2)	Mean ± SD = 29.12 ± 2.37 kg/m2
≤30	108(65.9%)
>30	56(34.1%)
Menopausal status	
Premenopausal	128(78.1%)
Post-menopausal	36(21.9%)
Family history of cervical cancer	35(21.3%)
Abnormal Pap smear	27(16.5%)

Table 1: Stratification of patients with abnormal smears (n 164)

DISCUSSION

Post coital bleeding is the pathognomonic feature of cervical cancer. Pretorius et al., in his case series reported 6 % from 81 females suffering from cervical cancer having PCB [13]. In another case series conducted in United States, 10% of the participants had post coital bleeding. However, in a smaller case series in the United Kingdom all females with CC under the age of 65 years had PCB as their predominant symptom [15]. Although there are many causes of postcoital bleeding, cervical cancer as a cause of postcoital bleeding is seen in only a few women. In a study, inflammatory smear on PAP was seen in 32.0% women with post-coital bleeding. LSIL was in 34.7% and was seen in 18.7% women [7]. In a study on 314 women with post-coital bleeding, invasive cervical carcinoma was found in 12, CC or vaginal cancers were seen in 10 and two had cancerous lesion within the endometrium. In the CC group, 8 lesions were clinically evident whereas four women had normal smears before being referred for further evaluation of post coital bleeding. Two out of these ten cases were diagnosed with the support of colposcopy. Around 0.6% of women who visited their gynecologist with complaint of PCB had invasive cancer of the cervix but a normal looking cervix and a normal smear. Cervical intraepithelial neoplasia was found in 54 women (17.0%) and 15 women (5%) had cervical polyps. In patient with significant pathology, 30 %(19/63) had a normal or an inflammatory cervical smear. Rosenthal et al., could not identify the reason of postcoital bleeding in 155 women (49%) [16]. A three-year retrospective study in Ajman, UAE from 2007 till 2010 comprised of 150,111 patients, only 602 (0.4%) women had a Pap smear test. The study had 50.1% resident Arabs and the rest comprised of women from other nationalities. It was observed that 73% of the total patients attending outpatient clinics had active complaints, whereas, 27% had no specific complaint and came for screening purpose only. Al Eyd et al., found 3.3% of his samples having abnormal epithelial cells. Atypical squamous cells of undetermined significance (ASCUS) were seen in 1.8%, LSIL in 1.2%, and HSIL were witnessed in 0.3%. The author reported none of his patients having squamous cell carcinoma [17]. In a study conducted in Tehran, the author reported only one (0.8%) patient having cervical cancer, three (2.4%) of his patients had CIN II and CIN III [18]. Shalini et al., in their study reported a prevalence rate of 5.5% for cervical cancers and a prevalence of 3.6% for CIN II and CIN III [19]. In literature, the incidence of abnormal cervical pathologies has been reported to range from 6.9% to 17% or even 19% [20-21]. Gupta M et al., in their study reported different variants of dysplastic cervical lesions in women presenting with post coital bleeding. They found mild dysplastic lesions in 14.6% and moderated to severe dysplasia in 10.7% cases [22]. Himanshi G et al., stated that 29% of females with PCB had chronic cervicitis and 8% had invasive cervical carcinoma in HPE in their study [23]. Another author found invasive cervical cancer in 5.5% of her study participants whereas Rosenthal AN et al., saw invasive cervical cancer in 4% of women presenting with post coital bleeding [16,24]. Abdelkrim et al., in his study presented a lower incident rate by two different authors [25]. One author stated that 1% of women with postcoital bleeding had CC, similarly Ashraf GT et al., described the presence of invasive cervical cancer among 1.8% of his participants presenting with postcoital bleeding [25]. In the four-year prospective study conducted by Altaf in Saudi Arabia, he reported abnormal Pap smear (cervical dysplasia) in 4.7% cases, which was higher when compared to that reported in literature being 1.6% [26]. A study was conducted in a tertiary care hospital in Kuwait for a duration of 13-years which was aimed to identify the incidence of squamous cells abnormalities. An increasing trend of LSIL and HSIL was identified among the younger women. It can therefore be concluded from the above result that screening programs will play a vital role in the prevention of disease in young Kuwaiti women [27]. Different prevalence's have been reported by different authors conducting studies in Saudi Arabia and Kuwait [28-31]. In a tertiary hospital in Kuwait it was reported as 4.3% [28], Jamal AA et al., reported a similar rate of 5% in a larger hospital in Saudi Arabia [29]. Variations in the prevalence rate were found in different regions of Saudi Arabia [30-31]. In the western region it was as low as 1.66% [30], while a higher rate was reported in the southwestern and eastern populations of Saudi Arabia being 7.9% and 4.5% respectively [31]. Pap smear is an easy, effective and a cheap method for detecting cervical cancer. Identified risk factors for CC include marriage at a younger age, women giving birth to more than one child, smoking and long use of oral contraceptive pills.

CONCLUSIONS

In conclusion, Pap smear is an easy, effective and a cheap

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method for detecting women with cervical pathology. So, study recommend that Pap smear should be used regularly in married females of reproductive age group presenting with post-coital bleeding, this will permit precise and earlier identification of cervical cancers therefore reducing both morbidity and mortality.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

The author(s) received no financial support for the research, authorship and/or publication of this article

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