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ORIGINAL ARTICLE

Determination of Risk Factors Associated with the Development of Cervical Cancer in Mirpur, AJK

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ABSTRACT

Background: Cervical cancer is an important public health issue. Numerous factors are associated with the development of cervical cancer.
Aim: To understand various contributory and risk factors associated with the development of cervical cancer in our area.
Study design: Descriptive cross-sectional study.
Duration and place of study: Mohi-ud-Din Islamic Medical College, Mirpur AJK from October 2021 to March 2022.
Methods: Volunteering women were included in the study. A pre-tested questionnaire was used to collect data. The proforma included demographic and epidemiological information as well as about the various risk factors which were associated with the development of cervical carcinoma. A detailed medical history was taken and special emphasis was placed on the gynecological history including obstetrical and menstrual history as well as sexual and reproductive history together with contraception usage.
Results: There were 753 study participants and their mean age was 56.80±10.51years. The mean age of first sexual intercourse was 17±2.80 years and the average number of pregnancies was two. About 14.61% of our study population was smoker. Hormonal contraception was practiced by 64.01% while 11.29% preferred intra-uterine contraceptive device as a mode of contraception. The prevalence of sexually transmitted diseases was 10.49% and out of these diseases, condylomatosis accounted for 05.84% of cases while syphilis and human immunodeficiency virus were responsible for 04.78% of cases collectively.
Conclusion: There are various risk factors associated with the development of cervical cancer. Most important of them are younger age at marriage or sexual activity, use and duration of contraception usage and smoking. There is a need to arrange awareness campaigns among masses to raise awareness about the risk factors and also about the benefits of early screening so as to prevent the development of cervical cancer.
Keywords: Human Papilloma Virus, Risk Factors, Cervical Cancer, Women, Contraception, Screening

INTRODUCTION

Despite the fact that incidence of cervical cancer has declined globally due to the widespread use of advanced screening tools, it still remains a significant public health issue worldwide. It has been estimated that more than 85% cases of cervical cancer affect women in developing countries[1,2]. Several factors play central part in the development of cervical intraepithelial neoplasia (CIN) and subsequently cervical cancer. These factors involve behavioral, sexual and reproductive ones including younger age at first sexual intercourse, having sex with various sexual partners, high blood pressure, poor living standard, smoking and use of oral contraceptive (OC)[3-5].

Many of these factors are related to the exposure of an individual to human papilloma virus (HPV)[2]. HPV constitute a very strong risk factor for the occurrence of cervical carcinoma especially the strains HPV 16, which is extremely common among humans, and HPV 18. Many HPV infections clear within 6-12 months of an exposure as a result of immunological reaction but a minor proportion of these infections progress and can develop into cervical cancer.[6]Similarly, women suffering from human immunodeficiency virus (HIV) have a higher risk of developing HPV infection with its high risk strains. Likewise, HIV infected females are not only more probable to acquire HPV infection at a younger age but they are also at higher risk of developing cervical cancer[7].

Numerous other agents were identified which have proven relationship with the development of cervical cancer. Smoking is one of the most important of these factors. Exposure to smoking has a positive and dose-dependent relationship with the development of this cancer. Even passive smoking augments this risk significantly in adults[8,9]. Likewise, there is a strong scientific evidence that proved that the presence of inflammation significantly enhances the risk of cervical cancer. This fact has been further verified by the fact that the use of anti-inflammatory drugs mitigated this risk[10,11].

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It is imperative to recognize the risk and other contributory factors towards the development of cervical cancer before developing any strategy. Understanding such factors will immensely help in the development and implementation of strategies aimed at early detection and reducing the rate and progression of CIN[2]. Development of such evidence based strategies will not only help in efficient distribution of health resources but also maximize the public health and communal benefits in resource restrictednations[12]. As our area is a blend of rural and urban communities and there is not a research study which was conducted on this subject specifically in this area, therefore, this study is conducted to understand various contributory and risk factors associated with the development of cervical cancer especially to establish a relationship between these risk factors and the development of cervical cancer in our local community and region.

MATERIALS AND METHODS

This descriptive and cross-sectional study was carried out in Mohi-ud-Din Islamic Medical College, Mirpur AJK between October 2021 to March 2022. All those women who volunteered to join this study and given informed consent were given a pre-validated questionnaire which had to be completed at the time of joining this study. The proforma included demographic and epidemiological information as well as about the various factors which were associated with the development of CIN and cervical carcinoma. A detailed medical history was taken and special emphasis was placed on the gynecological history including obstetrical and menstrual history as well as sexual and reproductive history together with contraception usage. All those participants who refused to give consent, were pregnant, have or had any kind of

malignancy, having gastrointestinal or hematological disease or had hysterectomy or cervical conization were excluded.

Data was collected, managed and then organized using Microsoft Excel 2022. Qualitative variables were described as percentages while the quantitative ones were stated as means and standard deviation.

RESULTS

A total of 753 participants were included in the study based on selection criteria. Mean age of the study participants was 56.80±10.51 years. The mean age of first sexual intercourse was 17±2.80 years and the average number of pregnancies was two. About 14.61% of our study population was smoker. Contraception was practiced by 75.30% of participants whereas 64.01% preferred hormonal contraception and 11.29% preferred intra-uterine contraceptive device (IUCD) as a mode of contraception. The prevalence of sexually transmitted diseases (STDs) was 10.49% and syphilis and HIV were responsible for 04.78% of cases collectively as shown in Table 01. With reference to presence of various STDs in a patient, 4.52% of patients were suffering from a single STD while 5.97% of patients were exposed totwo or more STDs. Among these patients, 4.91% had two STDs while 0.93% had three and only 0.13% of patients had more than three STDs as shown in figure 1.

Condylomatosis constituted 05.84% of cases while vulvo-vaginal condylomatosis was diagnosed in 5.71% of cases and vaginal condylomatosis was diagnosed only in 0.53% of patients as shown in figure 02.

Figure 1: Presence of various types of STDs in a patient, (n=753)

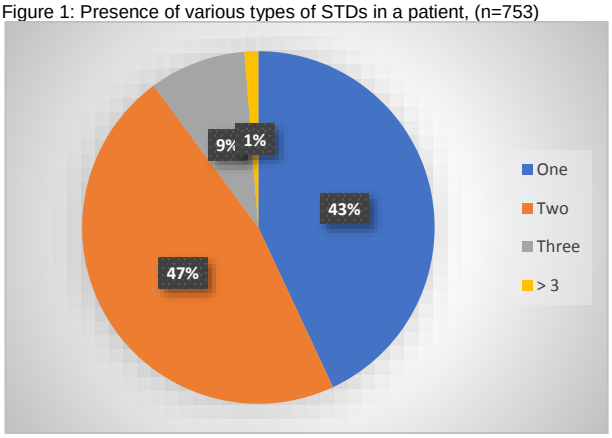
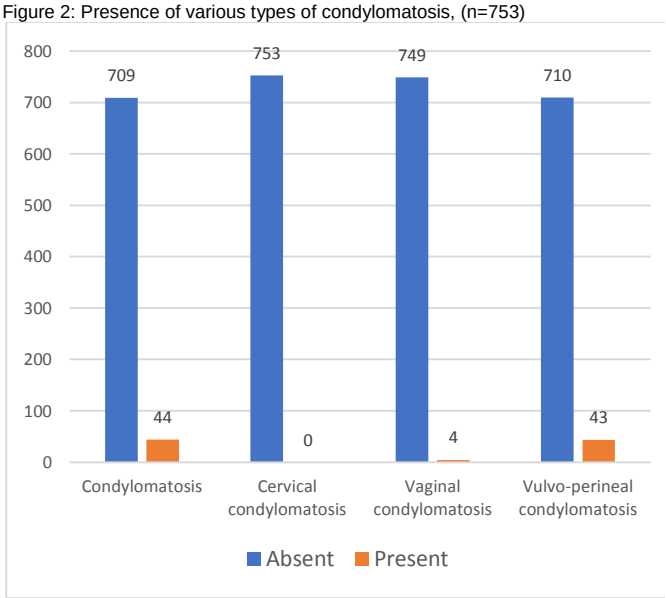


Table 1: Prevalence of various risk factors among study population (n=753)

Variable	Present		Absent		Total	
	Number	%age	Number	%age	Number	%age
Smoking	110	14.61%	643	85.39%	753	100%
Hormonal Contraception	482	64.01%	271	35.99%	753	100%
IUCD Contraception	85	11.29%	668	88.71%	753	100%
Sexually Transmitted Diseases	79	10.49%	674	89.51%	753	100%
Syphilis	18	02.39%	735	97.61%	753	100%
Human Immunodeficiency Virus	18	02.39%	735	97.61%	753	100%
Human Papilloma Virus	02	0.27%	751	99.73%	753	100%
Pelvic Inflammatory Disease	01	0.13%	752	99.87%	753	100%
Genital Herpes	01	0.13%	752	99.87%	753	100%
Molluscum Contagiosum	01	0.13%	752	99.87%	753	100%

Figure 2: Presence of various types of condylomatosis, (n=753)



DISCUSSION

Cervical cancer ranked second among various cancers affecting women and is one of the chief causes of cancer related mortality in women[13,14]. It was believed to affect 10-40% of young women in last thirty years[15]. Almost 85% of global load of cervical cancer associated mortality occur in developing nations and this mortality rate is 18 times higher in these countries when compared with developed countries[16]. There are numerous factors which are related with the development of cervical cancer and most of them are related to the exposure of a person to HPV[2].

Our study reported that the mean age of first sexual intercourse was 17 years. This finding was validated by other studies. Thankur et al, who had conducted their study in Shimla, India, also identified that majority of their study participants, 84.07% were married and had their first sexual encounter before the age of 18 years.[17] Similarly, in a case-controlled study conducted in United Kingdom by Green et al, it was reported that the risk of cervical cancer was three folds higher in women who had their first sexual intercourse before the age of seventeen years.[18] This finding could be attributed to the fact that younger age at first sexual activity could lead to frequent and lengthier sexual history and then longer hormonal stimulation of naive cervical mucosa make it prone to oncogenic changes.

Contraception was practiced by 75.30% of our participants. Asthana et al have specifically conducted a research to determine the association of oral contraceptives with the development of cervical cancer. It was a systemic review and meta-analysis of multiple studies published between January 1990 to August 2019. They have established that the use of OC was definitely linked to the development of cervical cancer and especially the adenocarcinoma. Likewise, this risk increased proportionally with the length of use of OC[5].

There are certain limitations of our study. First, large scale multi-centric studies should be conducted involving both rural and

urban communities. Secondly, there should be more emphasis to explore the linkage between various STDs and occurrence of CIN and cervical cancer.

CONCLUSION

Various risk factors are associated with the development of cervical cancer. Primary of them are younger age at marriage or sexual activity, use and duration of contraception usage and smoking. There is a need to arrange awareness campaigns among masses to raise awareness about the risk factors and also about the benefits of early screening so as to prevent the development of cervical cancer.

Conflict of interest: Nil

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