

A Review on the Prevalence of Cervical Dysplasia in Various Geographical Locations

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ABSTRACT

Cervical dysplasia is an unusual growth of cells that occurs on the cervix surface especially in between the uterus and vagina. It is the most common cancer in women that ranks second globally. In 2018, about 570000 women were diagnosed with cervical dysplasia worldwide. There are several factors that affect cervical dysplasia as per worldwide estimation. Cervical dysplasia caused mainly due to human papilloma virus. The main aim of this review mainly focuses on the significant epidemiological factors associated with cervical dysplasia in various geographical locations.

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Introduction

Cervical dysplasia is an unusual growth of cell occurs on the cervix surface especially in between the uterus and vagina. Cervical cancer is the most common cancer in women that ranks second globally. In 2018, about 570000 women were diagnosed with cervical dysplasia worldwide. There are several factors that affecting cervical dysplasia as per worldwide estimation and the main cause is due to Human Papilloma Virus (HPV).

Cervical dysplasia is an abnormal change in the cells around cervix. Based on the condition of the abnormal cells, it can be differentiated into mild, moderate and severe. Having cervical dysplasia does not mean that a person has cancer or will ever develop cancer. But in some cases, failure in the early identification of the cervical dysplasia may lead to cervical neoplasia. The most common age group population prone to have this condition was 25-35 years. HPV virus is a sexually transmitted virus. Several strains of HPV virus exists in which some are with low risk and some are with high risk. In majority of cases, our immune system fights against these HPV and reduces infection. But in some situations HPV persist over time. After a period of time it develops into cancer in cervix.

HPV 10 and HPV 18 are HPV strains that cause high risk. Epidemiological factors include multiple sexual partners, cigarette smoking, weakened immune system, early child birth before the age of 16 and using immunosuppressant drugs. In Pap smear detection, lesions can be observed in squamous intraepithelial cells both in high grade and low grade. Detection in Colonoscopy leads to determination of degree of abnormality. In the aspect of biopsy, precancerous cells were observed in the tissue part of the cervix and it is graded as cervical intraepithelial neoplasia (CIN). CIN-1 (mild) does not require any treatment where as in case of CIN-2 (moderate) and CIN-3 (severe) requires cryosurgery, laser surgery, loop electrosurgical excision procedure, cold knife conization and hysterectomy. The world wide HPV prevalence in cervical carcinomas is 99.7% [1]. Multiple sexual partners is one of the risk factors that can cause cervical cancer through human papilloma virus [2].

Asia

Asia ranks in the 4th place of cervical cancer prevalence. The epidemiological factor in Asia is most probably human papilloma virus (particularly East Asia). HPV-16 is the most common strain of HPV that cause cervical cancer in this region. Both from Asia

Pacific region and Australasia in Asia oecania having 52% risk of causing cervical cancer in the world. In developing countries, cervical cancer can be prevented by using vaccines [3]. About 500000 cases are newly diagnosed with cervical cancer and about 50% mortality rate is seen in Asia. The people who were diagnosed with cervical cancer can have protective genetic variant TP53 codon 72 proline allele.

Africa

In Africa, epidemiological factor for causing cervical cancer is HPV. In Sub-Saharan Africa, incidence rate for cervical cancer is very high and is the most leading cause of death among women in this particular region. Human papilloma virus is higher in Africa when compared with developing areas in the world (average of 24%). In Africa, common genotypes are HPV 16 and 18 that can cause cancer [4,5]. Long term exposure to cervical infection may leads to cervical cancer that can cause mortality and morbidity [6]. Due to illiteracy and lack of awareness about HPV, decreased vaccination rate was observed that increases mortality. Various health programs are conducted to increase the awareness among the women which leads to decreased mortality rates [7].

America

The epidemiological factor of cervical cancer is mainly due to infection that caused by sexually transmitted human papilloma virus [8]. Latin America and the Caribbean, shows the highest incidence in mortality rates [9].

UK

In UK, most of the people use the oral contraceptive pills. The risk of cervical cancer is more in the users of oral contraceptives and decreases when they stopped using. Most frequently, age group of 20-30 years uses these oral contraceptives and the risk of cervical cancer also increases in this age group [10].

China and Mongolia

The age related incidence rates of cervical cancer are 9.6 per 100000 women in Hong Kong in 2004, 10.6 per 100000 women in Singapore in 2002 and 18.6 per 100000 women in Taiwan in 2003. Epidemiological factors include smoking and age debut for women.

Europe

Smoking is the risk factor that can cause cervical cancer in Southern European population. Prospective study conducted in Europe concluded that due to tobacco smoking causes cervical intraepithelial neoplasia (CIN3)/in situ carcinoma [11].

Conclusion

Human papilloma virus is the most common cause that leads to cervical dysplasia in different continents in the world. HPV vaccines, smoking, oral contraceptive pills are the some other causes of cervical dysplasia. The highest prevalence of cervical dysplasia was observed to be in Asia. Health care professionals should take responsibility in creating awareness regarding HPV, smoking and oral contraceptive pills in order to prevent the cervical cancer.

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