CERVICAL CANCER STILL UNKNOWN IN JHARKHAND

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Abstract: In developing countries second most common cause of death in 15–44 years women age groups are due to cervical cancer. In India one woman dies of cervical cancer in every 8 minutes. Mortality is also an indicator of health inequalities, as 86% of all deaths due to cervical cancer are in developing, low- and middle-income countries. Every year in India, 122,844 women are diagnosed with cervical cancer and 67,477 die from the disease. According to rough figures every year around 30,000 to 40,000 cancer cases are observed in Jharkhand. It has been observed a consistent increase of cervical cancer in Ranchi. Since HPV infection is high in India introducing a national HPV vaccination programme may greatly reduce the risk of cervical cancer. In the eastern part of India even after diagnosis only 38.8% had completed treatment involving external radiation and brachytherapy. As per data provided by Indian Council of Medical Research (ICMR), the estimated incidence cancer cases in Jharkhand was 28,135 in 2011, 29,067 in 2012, 30,026 in 2013 and 31,012 in 2014. Women mostly suffering from cervical cancer, the reason behind are the lack of education and early marriage in Jharkhand. Early recognition of the symptoms by the patients and their families and spreading awareness by the government and other social bodies can help reduce the mortality rate. One of the most effective ways of preventing and controlling cervical cancer is regular screening and early diagnosis because early detection predicts better prognosis. The objective of cervical screening or secondary prevention is to prevent invasive cervical cancer to develop by detecting and treating women with CIN2/3 lesions, and the effectiveness is determined by reduction in incidence and mortality.

IndexTerms **- HPV, CIN, Cancer, Jharkhand, Tumours**

I. INTRODUCTION

Cancer is one of the biggest and most investigated causes of death in developed countries. Cancer refers to a condition where the cells begin to grow and reproduce in an uncontrollable manner. Cancer also called malignancy that is abnormal growth of cells. It sometimes begins in one part of the body and gradually spreading to other parts. When the cancer cells invading other tissues and move through the bloodstream or lymphatic system, it is called Metastasis.

As cells become more and more abnormal, old or damaged cells survive when they should die, and new cells form when they are not needed. These extra cells divide without stopping and may form growths called tumours. Tumours are malignant, they can spread or invade, nearby tissues.

Cancer is a genetic disease as it caused by changes to genes that control the way of cells function. Mutations have occurred in their genes due to which cells change their nature. They can also arise during a person's lifetime as a result of errors that occur as cells divide or because of damage to DNA caused by certain environmental exposures. Cancer affected by three main types of genes: Proto-oncogenes, tumor suppressor genes, and DNA repair genes. This are sometimes called "drivers" of cancer.

There are more than 100 types of cancer including breast cancer, cervical cancer, skin cancer, lung cancer, colon cancer, prostate cancer and lymphoma. Its treatment may include chemotherapy, radiation or surgery.

II. CERVICAL CANCER

In developing countries, cervical cancer is the second leading cause of cancer related death in women. Cervical cancer, or cancer of the cervix, affects the lower part of the female reproductive system. It forms in the interior lining of the cervix, the junction of the vagina and uterus. In the early stages of cervical cancer, there are no symptoms. It occurs when abnormal cells on the cervix grow out of control. The development of cervical cancer is typically slow, and occurs over a period of years. The progression to cervical cancer begins with the development of precancerous changes in normal cells.

The two main types of cervical cancer are squamous cell carcinoma and adenocarcinomas which are distinguished based on their appearance under a microscope. Squamous cell carcinoma begins in the thin, flat cells that line the cervix. Adenocarcinoma begins in cervical cells that make mucus and other fluids. There are several risk factors for the development of cervical cancer, both genetic and environmental. One of the main risks to develop cervical cancer is infected with the human papillomavirus

(HPV). Not all types of HPV causing cervical cancer. HPV contains a small, circular, double stranded DNA genome. The virus infects epithelial cells, one of the rapidly dividing cells that form the skin and mucous membranes. The virus reproduces within the host cell and when the cell dies, as part of natural cell turnover, the new virus particles (virions) are released and can infect other cells. The HPV genome contains at least two genes whose protein products function as oncogenes, meaning that they can turn into cancer cells. These genes are called E6 and E7. The E6 and E7 proteins inhibit the tumor suppressor proteins p53 and pRb, respectively.

Cervical Intraepithelial Neoplasia (CIN) is the precancerous cell in the cervix. This means that abnormal cells were found on the surface of the cervix. CIN is usually caused by certain types of human papillomavirus (HPV) and is found when a cervical biopsy is done. It is usually found at a very early stage through a Pap test. The first step in diagnosing cervical cancer is through the Pap smear, a simple test that allows cervical cells to be examined under a microscope. Secondary prevention involves screening for precancerous lesions and treating them. The three screening modalities are cytology, visual inspection, and HPV test. In cytology, cells are scraped from the squamo-columnar junction of the cervix and fixed on a glass slide for reading by a trained cytologist. This method, commonly called Pap smear, has several limitations, such as high false-negative rates, low sensitivity, subjective interpretation, and low predictive value, as one-third of women who progressed to cervical cancer had a normal Pap smear.

III. SOCIO-ECONOMIC STATUS

Low socioeconomic status has proven to be a significant risk factor for invasive cervical cancer due to its large impact on education and medical resources. Decreased risk is associated with increased education. Therefore, it is possible that if access to screening and medical education were equalized, race would not prove to be a significant risk factor. The increased risk with low socioeconomic status is attributed to a lack of screening, failure to treat precancerous conditions, and lack of knowledge about prevention of HPV infection.

IV. DISTRIBUTION OF CERVICAL CANCER IN INDIA AND TRENDS

Cancer of the cervix has been the most important cancer among women in the past two decades. In India maternal mortality stands at 44,000 a year, but 68,000 Indian women die due to cervical cancer annually. The recent National Cancer Registry Program (NCRP) data show that between 2009 and 2011 in the north eastern part of India had the highest levels of cervical cancer at an age-adjusted rate of 24.3. Cervical cancer rates among women in the 30–64 age group decreased by 1.8% per year on average but still accounted for 16% of the total female cancer burden. In the southern part of India, the north eastern districts of Tamil Nadu show a distinctive pattern with a high incidence of cervical cancer and penile cancer. This may be attributed to infection with human papilloma virus (HPV), which is also implicated in the causation of penile cancer.

Around 70% of cervical cancer cases are estimated to be caused by HPV. HPV infection is a sexually transmitted virus. There are over 100 different types of HPVs - 15 types can cause cervical cancer; probably 99% of them. In addition there are a number of types which can cause genital warts. The peak age of incidence of cervical cancer is 55–59 years, and a considerable proportion of women report in the late stages of disease. Specific types of oncogenic HPV-16, 18 have been identified in patients with cervical cancer. The current cervical carcinogenesis model includes three steps of HPV infection, progression to high-grade preinvasive lesions, and invasion. More than 95% of infections, including those with cytological abnormalities, resolve spontaneously, returning to HPV DNA negativity with seropositivity. There is despite of two lakh new cases of cervical cancer surfacing in India annually, the Union government was far from including cervical cancer vaccine in its national immunization programme.

V. STATISTICAL VIEW IN JHARKHAND

Approximately every year around 30,000 to 40,000 cancer cases are witnessed in Jharkhand. Apollo hospital of Ranchi in last five years has treated 6,000 cancer patients and out of them 3,000 patients suffered from oral cancer. As per data provided by Indian Council of Medical Research (ICMR), the estimated incidence cancer cases was 28,135 in 2011, 29,067 in 2012, 30,026 in 2013 and 31,012 in 2014 and the estimated mortality cancer cases was 12,380 in 2011, 12,790 in 2012 and 13,211 in 2013 and 13,645 in 2014 in Jharkhand.

VI. CONCLUSION

Mortality statistics and trends in cervical cancer are lacking due to inadequate and incomplete information on deaths. HPV infection prevalence is 87.8% – 96.67% among women with cervical cancer and 9.9% – 36.8% among women with no cancer or other gynecological morbidities. There is evidence that cervical cancer incidence is greater among women of lower classes, those less educated, and those with a larger number of children. Screening levels are low in the general population. There's a cause of concern for Jharkhand and it needs to start worrying about it, Oncologists at the State-run claim that the number of cancer patients are rising over the years as uterine cervix and breast cancer amongst women in the state. In order to increase this, it is necessary to carry out specific health education sessions for men and women to facilitate care seeking. Screening for cervical cancer reduces invasive cervical cancer incidence and mortality. New knowledge of the development of cervical cancer, new technologies such as the liquid-based cervical cytological smear and HPV DNA testing have transformed cervical cancer screening. Early recognizing the symptoms by the patients and their families and spreading awareness by the government and other social bodies can help reduce the mortality rate. "The state lacks awareness undoubtedly; in fact the entire country lacks it. Mostly people believe cancer only occurs to people who drink and smoke and after the detection, try to outcast the patient and their family. There are multiple causes for the disease and can be treated in a much better way if detected early. Women suffering from breast and cervical cancer usually shy away from receiving treatment for the disease. Hence, the mortality rate has not reduced in the recent years". The latest estimates by Indian Council of Medical Research (ICMR) proved that cervical cancer has overtaken breast cancer deaths again and over 62,000 women died of cervical cancer in 2015, accounting for 24% of the total cancer-related deaths of women in India. The primary reasons for low HPV vaccination occurrences in India remain as lack of awareness, high costs and concerns about its efficacy and long-term safety.

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