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Review Article

CERVICAL CANCER

Bhagat Lumi[1], Nanda KO[2*], Asha KP[3]

[1]Assistant Professor, Department of Prasuti Tantra evam Stree Roga, SSSB Ayurveda College and Hospital, Renwal, Jaipur, India
[2]Assistant Professor, Department of Prasuti Tantra evam Stree Roga, JSS Ayurvedic Medical College and Hospital, Mysuru, India
[3]Assistant Professor, Shri Bhanwar Lal Dugar Ayurveda Vishva Bharti, Sardarshahr, Rajasthan, India

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*Corresponding Author: **Dr. Nanda KO**
Assistant Professor, Department of Prasuti Tantra evam Stree Roga, JSS Ayurvedic Medical College and Hospital, Mysuru 570028, India

ABSTRACT

The genital malignancies are important topic in gynecology because of high mortality, morbidity and shortening of life span of women. In developing countries cervical cancer is the most common where as in developed countries breast cancer is the most common, with cervical cancer at second rank. It is not only India that is struggling with this problem, but also the whole world. Understanding the risk factors, educating the young generation, regular medical checkups and improving the health through ayurveda can be the main preventing factors.

Keywords: Cancer, malignancy, cervical cancer, prevention, *Ayurveda.*

INTRODUCTION

The word 'cancer' means something which spreads within something else and damages the later. 'Malignant' means harmful, injurious, tending to produce death, threatening a fatal issue. A study was conducted in India, screening 166 patients of genital malignancies. Out of 166, 110 patients were of cervical cancer, followed by ovarian cancer, endometrial cancer, vulval cancer and fallopian tube cancer[1]. In developing countries, approximately 80% of genital cancers are cervical cancers, where as in developed countries, cervical cancer accounts for 60% of genital malignancies. In India 122,844 women are diagnosed with cervical cancer every year. 67,477 deaths occur per year because of this[2]. More than 200 women die every day, 8 women die every hour, every 7 minutes a woman dies because of cervical cancer in India. 86% of deaths are due to cervical cancer in low-middle income countries[3].

CERVICAL CANCER

Cervical cancer is the only preventable genital cancer[4]. This is because of the easy accessibility of the cervix to inspection, slow progression of disease from pre invasive to invasive stage and application of cytological and tissue sampling procedures. These procedures have led to extensive screening programmes for prevention, early detection and treatment of the disease. Well organized and well implemented cytology based screening programme has drastically reduced the incidence as well as mortality due to cervical cancer in developed countries.

STAGES OF CERVICAL CANCER

There are two main stages of cervical cancer viz pre invasive and invasive. Pre invasive stage is detectable by cytology and it shows a peak incidence between 25-40yrs where as invasive stage is more common in 40-50yrs, thus indicating that pre invasive stage progresses to the invasive in a long period. The pre invasive stage is called as CIN (cervical intraepithelial neoplasia), where a part or full thickness of squamous epithelium is replaced by cells showing varying degree of dysplasia. It is classified into CIN I (undifferentiated cells are confined to lower third of epithelium), CIN II (undifferentiated cells cover 50-75% of epithelium) and CIN III (entire thickness is replaced by abnormal cells, with intact basement membrane). CIN I is also called as LSIL (low grade squamous intraepithelial lesion) and CIN II and III are called as HSIL (high grade squamous intraepithelial lesion)[5].
Invasive staging is from stage 0-IV (Table 1).

Table 1: Stages of Cervical cancer

Stage 0	Carcinoma in situ
Stage I	Carcinoma confined to cervix
Stage IIA	Carcinoma beyond cervix but not to lower 1/3rdof vagina
Stage IIB	Carcinoma beyond cervix but not to the pelvic wall
Stage IIIA	Carcinoma to lower 1/3rdof vagina
Stage IIIB	Carcinoma to the pelvic wall
Stage IV	Carcinoma invades bladder, rectum or metastasis

PREDISPOSING FACTORS

- **Sexual behavior:** Italian physician in the mid 19th century first suspected the relation between sexual behavior and cervical cancer. Frequency of mortality due to this cancer is more in married women than in unmarried. Some studies have shown that early age coitus and multiple sex partners increase the risk by 2-4 times[6].
- **Menstrual hygiene and reproductive factors:** according to some studies there is high risk associated with use of unclean cloth as compared to the use of sanitary napkins. Deliveries conducted by untrained dais in poor hygienic conditions can predispose to develop cervical cancer[7].
- **Contraceptives:** Long term use of OCP can be a cofactor that increases the risk of cervical cancer by 4 fold in women positive for HPV DNA[8].
- **Tobacco:** There is dose response relationship between smoking and disease as smoking promotes carcinogenic events by increasing duration of HPV infections[9].
- **Dietary factors:** Less level of antioxidants in diet increase the risk of CIN. Lycopene, vitamin C, A and E play protective role in early stages as well protect against development of CIN[10].
- **HPV (Human Papilloma Virus)[11]:** HPV is the major etiological agent in carcinoma cervix. Infection with this virus is found to be present in more than 90% of preinvasive and invasive cervical neoplasia. There are 100 types of HPV identified, among those 30 types, which are cause for infection in genital mucosa, are divided in three groups – low risk, intermediate risk and high risk. Low risk HPV is responsible for genital warts and LSIL where as other two are causes for HSIL and invasive cancer.

SYMPTOMS

Symptoms are mainly dependent on the extent of the lesion. The disease can be asymptomatic in early stages. Vaginal bleeding is the most common symptom, mainly post coital, contact bleeding, dyspareunia, vaginal discharge containing blood and foul odor. In advanced stage, fatigue, leg pain, back pain, pelvic pain, swelling in leg, bladder symptoms (dysuria, hematuria), rectal symptoms (pain, bleeding per rectal), urethral symptoms (pyelonephritis), can be the symptoms.

DIAGNOSIS

- **PAP Smear test:** This is the most effective cancer screening test available with sensitivity of 70-80% and specificity of 95-98%.[9] Screening with this should be started at age of 21yrs or within 3 years of onset of sexual activity. Thereafter yearly testing should be done till age of 30yrs and the every 2-3 years, if 3 consecutive smears are negative[12].
- **VIA (visualization in acetic acid) and VILI (visualization in Lugols iodine, also called Schiller's test):** Either of the solution is taken and applied on the ectocervix. In VIA the abnormal cells get stained to pearly white where as in VILI normal cells get stained to brown.
- **Colposcopy:** refers to study of cervical cells after magnifying the surface epithelium. This is done with the help of colposcope to study the cervix when PAP smear detects abnormal cells, to locate abnormal cells, to study the extent of lesion and to follow up the conservative therapy cases.
- **Cervical biopsy:** Biopsy is taken from the suspected area or four quadrants or from unstained area in Schiller's test.

PREVENTION

Prevention plays a very important role in cervical cancer as it is the only preventable genital cancer. Sex education is the primary step, especially in adolescent group, as early sexuality, multiple partners are the risk factors for the development of genital infection and thus exposing the epithelium for malignancies. Barrier method of contraception decreases the cancer risk. Educating the women about maintaining local hygiene. Screening the high risk population viz early marriage, early intercourse, early pregnancy, smoking habits, multiple sexual partners, immune compromised women. Down stage screening started by WHO 1986, is defined as inspection by naked eyes with simple speculum examination to detect the carcinoma at early or curable stage in women with low resource settings. The objective of this is to detect the cervical cancer in asymptomatic women by training nurses and paramedical workers. Any abnormality visible to the naked eye, the lady is referred to centers where the facilities are available for treatment.

HPV vaccination: This vaccine protects from some of the most common types of HPV. It doesn't prevent all cases of cervical cancer. Women, who are vaccinated, still need to receive regular PAP smears. There are two vaccines available i.e. Cervarix (bivalent, protects against type 16 and 18) and Gardasil (quadrivalent, protects against type 16,18,6 and 11). IAP recommends this vaccination between 10-12 yrs. Ideally vaccine should be given prior to sexual debut. Schedule for Gardasil is 0, 2nd and 6th month where as for Cervarix it is 0, 1st and 6th month. Route of administration is IM. Immunity persists for 3.5 yrs[12].

ROLE OF AYURVEDA

Samkshepatah kriya yogo nidanasya parivarjana

Ayurveda emphasizes strongly on avoiding the causative factors. The concept of *ahar, vihara* and *rasayana* are the main points to be considered here. Diet consumed now a days like fast foods, pizzas, spicy foods, contaminated food items contain huge amount of harmful agents. Such types of food are not having proper nutritive values and thus are not able to nourish our *dhatus*. This in turn causes *ojas* (which is considered to be the immune modulator of our body) *dushti*, making the body prone for diseases. That's why *acharyas* has given prime importance to *ahara* by mentioning it as one of the *trayaupstambha*. There is mentioning of *ashtavidha ahara vishesha yatana* (rules for consuming ahara). The concept of *nityasevaniya ahara*, diet mentioned in that is rich in carbohydrates, proteins, fat, antioxidants i.e. balanced diet. The next concept is of *vihara* mentioned in *dinacharya* and *saddvrutta*. In present era, life style disorders are very common. There is lots of stress, sedative life style, poor hygiene and most importantly improper sexual behavior. There is attention for wealth but not for health. In *dincharya*, various activities are explained with benefits, e.g. *vyayama* and *udwartana*, which reduces fat or adipose tissue in body

and this in turn reduces the aromatization of hormones at peripheral level, thus maintain proper reproductive health. *Snana* is mentioned as *kandu-malahara*, which reduces the possibility of infections in body. Sexual behavior is explained in *garbhadhanavidhi*. *Panchakarma* and *rasayana* are the two very strong modalities in ayurveda. *Ritu anusar shodhana* detoxify the body, make the body free from free radicals, increase immunity and increase the *agni*, which leads to proper formation of healthy *dhatus* and thus healthy *ojas*.
Sthanikachikitsa is another mode of prevention. Any type of repeated infection in cervix, especially involving the squamo-columnar junction, inturn reduces the local immunity and makes the cervix prone for dysplasia. Therefore the disease should be in *purvarupa awastha* and treated. *Yoniprakshalana*, *yonipichu*, *yonidhupan* etc are helpful in reducing the local infection. In cases of cervical erosion, squamo columnar junction is repeatedly exposed to metaplasia and thus exposing the woman to the risk of cancer. In such cases, *ksharakarma* is the treatment modality which gives good results.

CONCLUSION

Genital malignancies are burning issue all over the world. Cervical cancer is the commonest in Indian women. And as it is the only preventable cancer, proper counseling and screening the risk factors can remarkably reduce the incidences of cervical cancer. Role of all the physicians in this is asking menstrual history, inter menstrual bleeding, postcoital bleeding, vaginal discharge with foul smell, history of long term use of OCP or HRT (hormone replacement therapy), and educating every women, attending the clinics, about PAP smear and HPV vaccination.

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