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Gynecological Cancers in Women

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Introduction

Gynecologic oncology is a specialized field of medicine that focuses on cancers of the female reproductive system, including ovarian cancer, uterine cancer, vaginal cancer, cervical cancer, and vulvar cancer. As specialists, they have extensive training in the diagnosis and treatment of these cancers. The society of gynecologic oncology and the European society of gynecological oncology are professional organizations for gynecologic oncologists, and the gynecologic oncology group is a professional organization for gynecological oncologists as well as other medical professionals who deal with gynecologic cancers. The foundation for women's cancer is the major US organization that raises awareness and research funding and provides educational programs and materials about gynecologic cancers.

Gynecological Cancers

There is low quality evidence which demonstrates women with gynecological cancer receiving treatment from specialized centers benefit from longer survival than those managed in standard care. A meta-analysis of three studies combining over 9000 women, suggested that specialist gynecological cancer treatment centers may prolong the lives of women with ovarian cancer compared with general or community hospitals. In addition, a meta-analysis of three other studies which assessed over 50,000 women found that teaching centers or specialized cancer centers may prolong women's lives compared to those treated in community or general hospitals. Gynecological cancers comprise 10-15% of women's cancers, mainly affecting women past reproductive age but posing threats to fertility for younger patients. The most common route for treatment is combination therapy, consisting of a mix of both surgical and non-surgical interventions (radiotherapy, chemotherapy).

Smoking has been found to be a risk factor for the development of cervical, vulvar and vaginal cancer. Current women smokers are twice as likely to develop cervical cancer compared to their non-smokers counterparts. Several mechanisms have been researched to understand how smoking plays a role in the development of cervical cancer. The cervical epithelium's DNA has been shown to be damaged due to smoking. DNA damage levels in the cervix cells were higher in smokers when compared to non-smokers. It has also been postulated that smoking can lower the immune response to HPV as well as amplify the HPV-infection in the cervix. Through similar mechanisms, women smokers have also been found to be three times more likely to develop vulvar cancer. Smoking has also been associated with an elevated risk for vaginal cancer. Woman smokers are at double the risk for developing vaginal cancer when compared to women non-smokers.

Ovarian Cancer

The vast majority of cases are detected past point of metastasis beyond ovaries, implicating higher risk of morbidity and a need for aggressive combination therapy. Surgery and cytotoxic agents are typically required. Histology type is almost primarily epithelial, so treatments will refer to this subtype of pathology. Ovarian cancer is highly treatable with surgery for almost all cases with well-differentiated stage-1 tumour. Higher tumour grades may benefit from adjuvant treatment such as platinum-based chemotherapy. Optimal debunking is used to treat cases where cancer has spread to become macroscopically advanced. The goal of this procedure is to leave no tumour larger than 1 cm by the removal of significant portions of affected reproductive organs.

Interval debulking surgery may be employed halfway through chemotherapy following primary surgery if tumour remains above 1 cm in diameter. This has been shown to increase median survival of chemo sensitive patients by up to 6 months. A second look laparotomy may be used to assess tumour status in clinical trials, but is not a staple of standard care due to a lack of association with improved outcomes. Fertility preserving surgery involves a thorough differential diagnosis to rule out germ cell cancer or abdominal lymphoma, both of which resemble advanced ovarian cancer in presentation but are treatable with gentler methods. Fertility preserving surgery is one of the few cases where a second look laparotomy is recommended for caution. Platinum-based chemotherapy is paramount to treatment of epithelial ovarian cancer. Carboplatin tends to fare better than cisplatin for side effects and use in outpatient setting in randomized clinical trials. Paclitaxel is a particularly effective add-on for late stage ovarian cancer. Some studies suggest that intraperitoneal chemotherapy may be advantageous over an intravenous route.

Cervical Cancer

Cervical cancer is treated with surgery up to stage 2A. Local excision via loop cone biopsy is sufficient if detected in the earliest stage. If a patient presents beyond this point, bilateral lymphadenectomy is performed to assess metastasis to pelvic lymph nodes. If lymph nodes are negative, then excision of the uterus is performed. Otherwise, a combination of hysterectomy and radiotherapy is frequently employed. This combination approach may be substituted with chemo radiotherapy alone in some.

Endometrial Cancer

Hysterectomy and bilateral oophorectomy is performed for early stage disease. More aggressive cases with lymphatic spread are often treated with radiotherapy. Hormone therapy is most commonly used to treat systemic spread, as endometrial cancer patients tend to be older and have other illnesses that make them poor candidates to withstand harsh cytotoxic agents used in chemotherapy. Minimal laparoscopic surgery is used for endometrial cancer more than any other gynecologic cancer, and may confer advantages over classical surgical interventions.

Vulvar Cancer

Low incidence means that evidence-based therapy is relatively weak, but emphasis is placed on accurate assessment of cancerous tissue and reducing lymphatic spread. The minority of non-squamous histological subtypes do not typically require removal of the inguinal nodes. However, this is necessary to prevent spread in squamous cell carcinomas exceeding 1 mm in stromal invasion. If nodal disease is confirmed, adjuvant radiotherapy is administered. Treatment depends on the stage of vaginal cancer. Surgical resection and definitive radiotherapy are the first-line of treatment for early-stage vaginal cancer. Surgery is preferred over radiotherapy due to the preservation of the ovaries and sexual function as well as the elimination of the risk of radiation. For more advanced stages of vaginal cancer, External-Beam Radiation Therapy (EBRT) is the standard method for treatment. External-beam radiation therapy involves the delivery of a boost to the pelvic side of the patient at a 45 Gy dose.