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MAGER:

My name is Katherine LaVigne Mager. I am one of the gynecologic oncologists at Roswell Park Comprehensive Cancer Center. And I'm going to be talking about fertility sparing treatment in gynecologic oncology. Fertility and cancer is a very important topic in cancer care. Infertility is a very commonly encountered side effect of cancer treatment for many cancer types, not just gynecologic cancers.

Studies have shown that the ability to preserve fertility is very important to young people who have been diagnosed with cancer. Infertility has been associated with significant psychosocial distress following treatment for cancer and is an important issue in survivorship. When this has been looked at, the majority of patients would prefer to have biological offspring above options such as adoption or third-party reproduction.

It's extremely important for oncologists to address the effects of treatment on fertility and counsel patients appropriately if there are fertility sparing options available. This is important to do at the time of treatment, although frequently, this issue becomes more prominent in the setting of survivorship. Patients who undergo cancer treatment who desire future fertility should also make sure to ask their doctor about fertility sparing options.

Gynecologic cancers affect very specifically the organs most involved in reproduction for women. This includes the uterus, the ovaries, the cervix, and the fallopian tubes. Most of the treatments that we give for gynecologic cancers will have a very significant impact on future childbearing.

We'll begin with cervical cancer. This is one of the most common cancers in young women, so women under 40 years old. Radical hysterectomy is the standard approach for early stage disease. However, there are options for women who do desire future fertility. These include a cold knife cone biopsy or a radical trachelectomy.

Cold neck cone biopsy is a procedure where a cone-shaped portion of the cervix is removed. This can be performed in select patients with stage 1A1 or 1A2 cervical cancer. Cold knife cone biopsy, while it does preserve the cervix and the uterus, can

have effects on fertility. It can cause cervical stenosis, which is a narrowing of the cervical canal. It can cause increased risk of second trimester of pregnancy loss. The risk is approximately twice as women who have not had a cold knife cone biopsy. But the overall risk is still very low.

There is a risk of preterm delivery. It's three to four times the population rate. However, again, rates are overall still very low.

The next option is radical trachelectomy. This is a procedure that involves removal of the cervix with preservation of the uterus. It requires specialized training to be able to perform this procedure. And the patients should be referred to a gynecologic oncologist with experience in this procedure if they're interested in fertility preservation. It can be considered for women who've been diagnosed with stage 1A1, 1A2, or 1B1 cervical cancer.

In order to be eligible to have a radical trachelectomy, specific criteria must be met. These include small size of the tumor, desire for future fertility with no evidence of impaired fertility, specific cancer types-- these include squamous cell cancers, adenocarcinomas, or adenosquamous carcinomas. More high-risk cancer types are not considered safe for this procedure. The patient cannot have evidence of metastatic disease. And you need an adequate cervical length of greater than or equal to 2 centimeters. And this is generally determined by MRI.

What about the fertility outcomes for women who do undergo radical trachelectomy? Among women who attempt pregnancy following trachelectomy, 70% were able to conceive. 66% of pregnancies result in a live birth. There is a higher rate of second trimester of pregnancy loss. There is also a higher rate of preterm delivery. Very importantly, delivery should be via c-section following trachelectomy, and this is an important counseling point for patients who are considering the procedure.

Moving on to endometrial cancer-- this is the most commonly diagnosed cancer in gynecologic cancer. Typically, it's diagnosed in postmenopausal women, but 5% of cases are diagnosed in women under 40 years of age. The incidence of endometrial cancer is also rising in this group. The standard treatment for endometrial cancer is total hysterectomy and removal of both ovaries and fallopian tubes.

In women who have low-risk, uterine-confined endometrial cancer, there is an option for fertility sparing treatment that involves medical management with progestin therapy. The criteria for consideration for this therapy include tumor that appears to be confined to the uterine lining or endometrium, typically assessed with MRI, a FIGO grade 1 or well-differentiated tumor, no impaired fertility and desiring future fertility, and able to receive hormonal therapy. The basis for fertility sparing treatment is progestin therapy, and this can be administered using different formulations-- oral medication, a progestin-releasing IUD, or a combination of both oral medication and IUD.

And finally, ovarian cancer-- ovarian cancer occurs less frequently in younger women, but is seen. Fertility sparing can be considered in early stage disease, particularly in malignant germ cell tumors, sex cord stromal tumors, and tumors of low malignant potential. Fertility sparing surgery for ovarian cancer includes removal of the affected ovary with peritoneal staging and assessment of lymph nodes, depending on the cancer subtype. This should only be considered after careful counseling regarding the risk of recurrence and need for further treatment following surgery, including chemotherapy and radiation.

Advancements in assisted reproductive technology have offered many options for fertility preservation when fertility sparing treatments are not possible. These options include oocyte cryopreservation, or egg freezing, oocyte donation, or use of donor eggs, or gestational carrier, which is more commonly known as surrogacy. Fertility options should be discussed prior to initiating treatment. If egg freezing is desired, it should be performed prior to surgery, chemotherapy, and radiation, as these can all have significant effects on fertility. Timely referral to a reproductive endocrinologist is key.

In conclusion, fertility is a very important part of cancer care. The loss of fertility has significant negative effects on young cancer patients. Fertility sparing options are available for some women who've been diagnosed with gynecologic cancer.

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