

# Gynecologic Oncology Fertility Sparing Options

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**Citation:** Salvatore S (2023) Gynecologic Oncology Fertility Sparing Options. Archives Can Res, Vol.11 No. 3: 166.

## Abstract

When considered to be the optimal course of action for a certain cancer patient, fertility-sparing surgery protects the female body's potential to get pregnant. Women who want to keep their fertility intact and have a gynaecological cancer are increasingly being given fertility-sparing surgery (FSS). We analyse the most recent research on oncological and reproductive outcomes following FSS for early stage cervical cancer, epithelial ovarian cancer, and endometrial cancer in this systematic review. Recurrence rates following FSS are generally encouraging, and given the current patient selection of those with low-stage and low-grade cancer, these conservative treatments appear to be oncologically safe. Nevertheless, due to the methodology of the available research, i.e., largely retrospective cohort studies with a varied patient group, causing selection bias, generalised inferences should be taken with caution. Nevertheless, despite FSS, around 50% of patients choose not to become pregnant, and the causes of these choices are still poorly understood. International cooperation will make it easier to gather reliable data on FSS and the associated decision-making process to improve patient counselling and selection.

**Received:** 02-Mar-2023, Manuscript No. ipacr-23-13582; **Editor assigned:** 04-Mar-2023, Preq No. PQ- ipacr-23-13582; **Reviewed:** 18-Mar-2023, QC No ipacr-23-13582; **Revised:** 23-Mar-2023, Manuscript No. ipacr-23-13582 (R); **Published:** 30-Mar-2023, DOI: 10.36648/2254-6081-11.3-166

## Introduction

Radiation therapy, chemotherapy, radical surgery, or combinations of the aforementioned treatments are traditionally used to treat tumours that affect the female genital organs. All of these treatments have the potential to permanently harm the female reproductive system. Nonetheless, there has been a sharp rise in the number of patients looking for fertility-preserving alternatives for the treatment of gynecologic malignancies as a result of the ongoing trend of delaying parenthood and the early discovery of gynecologic tumours. 1.09 million (16%) of the 6.6 million cases of cancer in women globally affect their genitalia, and up to 20% of these cases will be detected in women who are of reproductive age. Women who qualify for fertility preservation may have as many as 15–45% of cervical cancers, 5–29% of endometrial cancers, and 12–34% of primary ovarian malignancies. The growing interest in the field of oncofertility is not surprising. Even though they are not yet regarded as "standard therapies," gynecologic oncology offers a variety of approaches that can preserve fertility. We discuss the available choices for women seeking fertility-preserving therapy for gynecologic malignancies in the current study [1-5].

## Cervical cancer

Cold knife conization, loop electrosurgical excision method (LEEP), or CO<sub>2</sub>-conization is all acceptable choices for women with stage IA1 cervical cancer (non-visible tumour invading 3 mm). Recurrence for these treatments is less than 1%, providing it is possible to achieve negative margins. Options vary based on tumour size, histology, depth of invasion, and presence or absence of lymph-vascular space invasion for stages IA2 (nonvisible lesion invading 3-5 mm) or IB1 (nonvisible lesion invading > 5 mm or any visible lesion 4 cm in size). For young women with early cervical cancer who want fertility-preserving surgery, radical trachelectomy (through open, laparoscopic, robotically assisted, or vaginal techniques) combined pelvic lymphnode dissection is a well approved therapy. Women with squamous or adenocarcinomas smaller than 2 cm in size are often offered this surgery; however several clinics are successfully treating bigger tumours. Recurrence rates after radical trachelectomy are 4%, which is comparable to recurrence rates after radical hysterectomy, while pregnancy rates after trachelectomy range from 41 to 79%. Although there is a modest rise in second-trimester miscarriages, most pregnant women give

birth at around 34 weeks. Less invasive procedures like cervical conization, simple trachelectomy with pelvic lymphadenectomy, or neoadjuvant chemotherapy followed by cervical conization and lymphadenectomy are also being investigated for stages IA2/IB1 disease to reduce the risk of preterm birth and second trimester miscarriage. Comparable findings in terms of oncological and obstetrical outcome seem possible, even though they are mostly restricted to small series. bigger lesions with positive results. A radical trachelectomy has a 4% recurrence rate, which is comparable to a radical hysterectomy's 6% recurrence rate, and pregnancy rates of 41-79% have been observed. Although there is a modest rise in second-trimester miscarriages, most pregnant women give birth at around 34 weeks. Less invasive procedures like cervical conization, simple trachelectomy with pelvic lymphadenectomy, or neoadjuvant chemotherapy followed by cervical conization and lymphadenectomy are also being investigated for stages IA2/IB1 disease to reduce the risk of preterm birth and second trimester miscarriage. Comparable findings in terms of oncological and obstetrical outcome seem possible, even though they are mostly restricted to small series.

### Endometrial cancer

Only grade 1 endometrioid adenocarcinomas without myometrial invasion should be treated conservatively with oral/injectable progesterone treatment or an IUD that releases progesterone. Notwithstanding the difficulty of assessing myometrial invasion, pretherapeutic MRI and transvaginal ultrasound are often acquired to rule out significant invasion. Adnexal involvement or the existence of synchronous tumours can occur up to 25% of the time, making exclusion of adnexal masses necessary. Little case series with reported response rates of 75–80% and recurrence rates of 20–40% make up the majority of the published research when it comes to evaluating outcomes. There have been cases where pregnancy rates have reached 35%. In addition to pretreatment dilatation and curettage, careful treatment monitoring with periodic endometrial samples is required for accurate evaluation of cell histology and grade.

### Ovarian cancer

Ovarian cancer is a diverse category that includes several different disease forms with varying histologies, prognoses, and therapies. Owing to their extraordinary sensitivity to chemotherapy, germ-cell malignancies of the ovary are extremely susceptible to fertility sparing treatment. It is common procedure to do a unilateral salpingo-oophorectomy (primarily for diagnostic purposes) with retention of the diseased contralateral ovary and uterus, followed by chemotherapy, even when massive tumours are present on the bilateral ovaries and uterus. The overall cure rate for germ-cell cancers is 90–95%, while the pregnancy rate is 35%. Borderline ovarian tumours and overtly obvious stage I sex cord stromal tumours can both be treated with a unilateral salpingo-oophorectomy or, if that is not possible, a cystectomy. With a pregnancy incidence as high as 55%, data on over 2500 patients with borderline tumours who underwent conservative treatment are available. Adjuvant chemotherapy is an option in individuals with informed permission for invasive epithelial ovarian cancer that is severely constrained to one ovary, conservative staging sparing one ovary and uterus. More than 800 cases of early-stage epithelial ovarian cancer treated with unilateral salpingo-oophorectomy have been documented as of

this writing, with a recurrence rate of 8 to 17% and a pregnancy rate of 36% for patients. Except from individuals with FIGO stage IA G1-2 tumours, for which fertility-preserving therapy is generally approved, there aren't much data for higher stages or aggressive histologies. In any case, comparable oncologic and obstetrical outcomes are possible.

### Oncofertility

Significant groundbreaking developments in reproductive endocrinology and infertility have been made with regard to the preservation of embryo, oocyte, and even ovarian tissue in young women with cancer at any location (not just gynecologic malignancies). These innovative technologies can also find a role in a gynecologic oncologist's practise, especially when treating cancers other than those of the female genital tract. It is widely known that individuals with borderline tumours and endometrial cancer commonly have a history of infertility. Ovarian stimulation is currently regarded as an appropriate therapeutic option for borderline ovarian cancer, endometrial cancer, and cervical cancer. It is also being researched for additional gynaecological malignancies.

### Conclusion

For young women with gynecologic malignancies, gynecologic oncologists have created a number of fertility-preserving medicines during the past 20 years. Hese non-standard therapies are best delivered and monitored at referral centres and on-study when \sappropriate. It is crucial to carefully choose patients and to thoroughly go through and warn patients about the hazards of these techniques. These women should be treated by a multidisciplinary team that includes gynecologic oncologists, psychologists, reproductive-endocrinologists, and maternal-fetal medicine specialists. Hopefully, further prospective regimens will make the dangers and advantages of conservative therapy for gynecologic malignancies more clear [6-10].

The tiny patient population, lack of approved treatment choices, dispersion of patients across the nation, and lack of clinical experience make it difficult to provide care for people with rare diseases. The treatment for AYAs with gynaecological cancer and a desire to maintain fertility is a unique circumstance meeting the same issues stated for rare diseases, even if cervical cancer, ovarian cancer, and endometrial cancer do not fulfil the formal definition of a rare disease. The practise of providing tailored therapy depending on the features of a patient's particular malignancy is known as "tailor-made medicine" in the field of oncological care. For a particular therapy, patient-specific factors are equally crucial to take into account. AYAs have distinctive social circumstances, philosophies, and tastes. For individualised treatment, the results of a collaborative decision-making process are crucial. Making decisions about fertility is challenging for both the patient and the gynaecologist who is treating them. Hence, a (seasoned) multidisciplinary team should be included in the care of these individuals. It is well acknowledged that expertise and level of treatment are connected to exposure of a medical practitioner to an unusual health issue or circumstance. Becoming a participant in clinical trials or registration studies is essential since there is no other method to assess and enhance the quality of care. Collaboration on a global scale will make it easier to increase patient numbers and create recommendations.

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