*CJON* BOOK EXCERPT SERIES

# Gynecologic Cancers

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## Background

Gynecologic cancers are malignancies that affect the female organs of reproduction and the genitalia. Collectively, these cancers comprise approximately 13% of cancers in women (Jemal et al., 2006; Martin, 2004). Screening has been particularly beneficial in reducing mortality in cervical cancer. However, an effective screening tool for other gynecologic cancers remains elusive and cost prohibitive. General risk factors include age, family history, and endogenous or exogenous hormonal factors. These may include age at onset of menstruation, age at or lack of pregnancy, and age at menopause, as well as exposure to hormonal manipulation, including birth control methods and hormonal treatment for gynecologic conditions or symptoms of menopause. Interestingly, hormonal manipulation that may protect a woman from one type of cancer may simultaneously increase her risk for another. Therefore, women must be active and knowledgeable participants in decisions regarding hormonal therapy, and practitioners must be diligent in balancing each individual's risks and benefits.

### Q 4.1

**Are the "gynecologic cancers" all the same kind of cancer, just in different organs?**

No. Although the cervix and uterus are, in essence, a continuous organ, the presenting symptoms, diagnostic tests, and treatments for these two cancers are different. Ovarian cancer alone has multiple different cell types. Presentation, diagnosis, and treatment also vary.

### Q 4.2

**I am adopted. How can I evaluate my risk for developing cancer without knowledge of my birth parents' medical history?**

As with breast cancer, family history is an important component of a woman's risk for many of the gynecologic cancers. In the absence of this information, women should carefully consider the risks and benefits of any hormonal treatment and communicate clearly with their primary healthcare team if such decisions are necessary. Family history is not the only risk factor involved with gynecologic cancers. Women should be knowledgeable about cancer prevention and early detection. It is important that women heighten their awareness of warning signs and symptoms and seek routine screening appropriate for gynecologic malignancies.

### Q 4.3

**How does the age of menarche and menopause affect a woman's risk for cancer?**

Late menopause (after age 55), infertility, and nulliparity are associated with an increased risk for both ovarian and uterine cancers, whereas early menarche (before age 12) is associated with an increased risk for ovarian cancer.

### Q 4.4

**Are there any connections between cancer and birth control methods?**

Healthcare professionals suspect that uterine and ovarian cancers are hormonally related, in part because of the association between these cancers and major hormonal experiences in a woman's lifetime. Specific research related to birth control pills and an increased risk of cancer has shown a decreased risk of both ovarian and uterine cancers but a slightly increased risk of breast cancer (Spinelli, Whitaker, & Birk, 2003). An increase in cervical cancer incidence among women using birth control pills may be related to the decreased likelihood of use of concurrent barrier contraception, such as condoms. Clinical trials investigating breast cancer prevention through the use of antiestrogen agents also revealed a slightly increased risk for uterine cancer.

### Q 4.5

**How does hormone replacement therapy affect the risk of cancer development?**

Recent research studies following postmenopausal women who use estrogen-only therapy to control menopausal symptoms

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revealed a significantly increased risk for the development of ovarian cancer. Subsequently, lower-dose estrogen in combination with progesterone therapy is now recommended, if hormone replacement therapy is used at all. Combination therapy does not seem to pose a significant risk; however, this relatively new treatment has not had large-scale long-term follow-up to confirm results (Spinelli et al., 2003).

### Q 4.6

**Do women with gynecologic cancer have to get chemotherapy, or can the cancer just be cut out?**

Treatment decisions for gynecologic cancers are dependent upon the type and stage of disease. Surgery remains a mainstay for all of the solid tumors, but surgery is used in combination with radiation and chemotherapy for cancer that has spread beyond a small, confined area. Early detection for cervical cancer via screening Pap smears has greatly reduced the incidence of metastatic disease. Nevertheless, in the presence of invasive tumor growth or metastasis to lymph nodes, chemotherapy and radiation have a useful role in disease management. Unfortunately, the lack of good screening techniques for uterine and ovarian cancers means these cancers often are discovered after the disease is advanced. Therefore, surgery often will play an initial role in treatment, but chemotherapy and radiation usually are part of the postsurgical treatment plan.

## Cervical Cancer

Cervical cancer was the number-one cancer killer of women in the past. The development and widespread use of the Pap smear as an effective screening tool has allowed early detection and treatment of this cancer, resulting in dramatically improved survival rates. Cervical cancer rates remain high in developing countries. In the United States, nearly 50% of women diagnosed with cervical cancer have never had a Pap smear (Martin, 2004). Additionally, incidence rates are higher in the uninsured, older adult, and minority populations with limited access to or use of Pap smear screening.

### Q 4.7

**Is it really important to have a Pap smear every year?**

The American Cancer Society revised its screening recommendation in 2002 and now suggests that screening begin approximately three years after the onset of vaginal intercourse and no later than age 21. Screening should continue annually with conventional testing or every two years using a more specific liquid-based cytology. If, at the age of 30, women have had three consecutive normal cytology results, they may be screened every two to three years, provided no other risk factors are present. For example, women who are HIV positive, were exposed to diethylstilbestrol in utero, or are immunocompromised because of steroidal treatment, chemotherapy, or organ transplantation therapy should continue annual screening. Screening can be discontinued after the age of 70 with three or more consecutive negative cytology tests and no positive tests in the past decade (Martin, 2004).

### Q 4.8

**Is there any link between sexually transmitted diseases and cancer development?**

Yes and no. Cervical cancer essentially is considered a sexually transmitted disease because of the direct causative link between infection with human papilloma virus (HPV) and the development of cervical cancer. DNA of the HPV virus has been found in 93%–100% of cervical squamous cell carcinomas (Martin, 2004). This DNA is transmitted during sexual activity. HPV seems to be a necessary precursor to the development of cervical cancer but is not an isolated precursor to the disease. In fact, the majority of women infected with HPV will not develop cervical cancer. Simultaneously, no causal relationship between other sexually transmitted diseases and the development of cervical cancer has been clearly demonstrated. In June 2006, the U.S. Food and Drug Administration (FDA) approved Gardasil® (Merck, Whitehouse Station, NJ), a vaccine that prevents cervical cancer, precancerous lesions, and genital warts caused by HPV types 6, 11, 16, and 18.

### Q 4.9

**Do tampons increase your risk for cervical cancer?**

No evidence exists that shows tampon use is related to cervical cancer.

### Q 4.10

**I have had a dilatation and curettage (D&C) in the past. Will that increase my risk for cervical cancer?**

Minor surgical procedures will not alter the cellular structure of cervical tissue. Malignancy develops on a cellular level and is correlated with factors that alter cellular function or genetic makeup. Examples include smoking and exposure to HPV.

### Q 4.11

**I have had an abnormal Pap smear in the past that was treated with cryosurgery. Does that put me at increased risk for cervical cancer? What are the signs and symptoms I should watch for?**

Yes. If a woman has been diagnosed with a confined cancerous or precancerous lesion in the past, close follow-up is a very important part of her care. Thin, watery, blood-tinged vaginal drainage may be noted intermittently as an early sign of cervical cancer. Vaginal bleeding after sexual intercourse or douching is another sign. The vaginal bleeding usually increases as the cancer grows. Pain is considered a late sign of cervical cancer and may be present in the flank or leg.

### Q 4.12

**What is a false-positive test result?**

All tests, including the Pap smear, have some degree of false results, reflected by the sensitivity and specificity of the particular test. A false-positive test is an abnormal cytology in the absence of true disease. The liquid-based Pap is considered equivalent to the conventional Pap smear and has been approved by the FDA. Most studies have shown improved sensitivity. HPV-DNA testing with

cytology also is commercially available, but the optimal use of this testing is not entirely clear because of the high cost of the equipment and testing resources needed. At this point, the technology remains promising and most likely will be used for women at high risk (Program for Appropriate Technology in Health, 2001).

### Q 4.13

**What treatment options exist for cervical cancer?**

Treatment decisions are varied based on the clinical stage of the disease at diagnosis, tumor bulk, and spread patterns. Generally, surgical treatment for very early cancer may involve colposcopic biopsy, traditional cone biopsy, laser, cryosurgery, or electrosurgical techniques. Microscopically invasive cancer may be treated with conization, hysterectomy, or intracavitary radiation. Bilateral lymph node dissection, chemotherapy, and pelvic external beam radiation are added in the presence of more locally advanced cancer. Cisplatin-based chemotherapy given concurrently with radiation therapy currently is considered standard treatment for advanced cervical cancer (Martin, 2004).

### Q 4.14

**My friend was diagnosed with cervical cancer after she got pregnant. What can she do?**

Preinvasive lesions usually are not treated during pregnancy, but expert colposcopy is necessary to rule out the presence of invasive cancer. Treatment for invasive tumors depends on the stage of the cancer and gestational age of the fetus at diagnosis. Traditionally, immediate treatment for cervical cancer is suggested in early pregnancy, and treatment is postponed if the cancer is found near the time of fetal maturity. Some case studies have suggested that delaying treatment to allow viability of the pregnancy may be a reasonable option for early-stage cervical cancer.

## Uterine Cancer

Uterine cancer is the most common of the gynecologic malignancies and occurs primarily in postmenopausal women. Endometrial cancer (adenocarcinoma) arises from the lining of the uterus, the endometrium, and is the most prevalent type of uterine cancer. Other cell types, including papillary serous, squamous cell, clear cell, and uterine sarcoma, are more rare. The use of birth control pills for at least one year has been shown to reduce the risk of endometrial cancer. In fact, the benefit of using birth control pills persists for 15 years after use has been discontinued. Hysterectomy is the primary surgical treatment for uterine cancer. Treatment with hormonal therapy may prolong time to disease recurrence, and advanced disease is treated with chemotherapy. Radiation therapy may be used in nonsurgical patients or to palliate symptoms of advanced disease (Meunier, 2005).

### Q 4.15

**Is it true that you are at increased risk for uterine cancer if you are childless or have children late in life?**

Yes. Risk factors for uterine cancer include age older than 50, Caucasian race, obesity, nulliparity, infertility, dysfunctional uterine bleeding during menopause, early menarche, late menopause, diabetes, hypertension, estrogen-only therapy, antiestrogen therapy use, polycystic ovarian syndrome, and hyperplasia of the endometrium (Martin, 2004).

### Q 4.16

**What are the warning signs of uterine cancer?**

Symptoms of uterine cancer include unusual vaginal bleeding or discharge, painful or difficult urination, painful intercourse, or general pelvic pain.

### Q 4.17

**My mother has "fibroids." What does this mean? Does it put me at risk for cancer?**

Fibroids are nonmalignant tumors that develop in the uterine muscle. They frequently are found in women in their 40s and can cause irregular bleeding, pain, frequent urination, and vaginal discharge. A personal or family history of fibroids is not considered a risk factor for endometrial cancer or any other type of malignancy. However, medical monitoring of this condition is appropriate.

### Q 4.18

**How is uterine cancer diagnosed?**

Annual pelvic exams, particularly for women older than age 40, are an important part of detecting uterine cancer. Diagnosis is made with aspiration curettage or endometrial biopsy, and a fractional D&C is performed to confirm diagnosis. Imaging studies such as computed tomography scan, magnetic resonance imaging, or ultrasound may be used to aid in the detection of uterine cancer.

### Q 4.19

**I am undergoing treatment for endometriosis. How will this affect my risk of having cancer in the future?**

Endometriosis is a common, benign condition occuring in women in their 30s and 40s that involves overgrowth of endometrial tissue outside of the uterus. Endometriosis is treated with antiestrogen hormonal therapy. No reported risk has been associated with treatment of endometriosis and uterine cancer development.

## Ovarian Cancer

Ovarian cancer is the fifth-leading cause of death in women of all ages. This cancer has been called "the silent killer" for its vague presenting symptoms that often lead to diagnosis well after metastasis has occured. Advocacy groups stress the importance of clinically investigating abdominal symptoms, such as widening girth, feelings of being bloated, and weight gain.

### Q 4.20

**I have had a hysterectomy. Why do I still need pelvic exams?**

Pelvic examination is used for detection of ovarian cancer and therefore is recommended. A Pap smear still will be performed

if the cervix was left intact. This varies depending on the surgical procedure originally used for the hysterectomy. A woman should discuss with her surgeon the need for continued Pap smear screening. Interestingly, pelvic exam is not considered sensitive or specific enough to serve as a screening tool for ovarian cancer, although it remains a common method for detecting this problem. Other detection methods for ovarian cancer include transvaginal or transabdominal ultrasound, color flow Doppler, and a blood test for the CA-125 antigen (Martin, 2004).

### Q 4.21

**My doctor is recommending a hysterectomy. Should I have my ovaries removed, too?**

This is a personal decision based on multiple factors including age, risk of ovarian cancer, risk of other diseases associated with hormones produced by the ovaries, current presence or absence of menopause, physician recommendation and rationale, and patient preference. A woman should discuss with her physician the risks and benefits of having her ovaries removed.

### Q 4.22

**I have heard there is a new blood test for ovarian cancer. Does it work?**

A blood test is available that detects the presence of CA-125, a tumor marker used to detect and monitor the presence of ovarian cancer. However, CA-125 is only found in some types of epithelial ovarian cancer. It is detected in approximately 80% of patients with ovarian cancer. Other tumor markers may exist as well. Lactic acid dehydrogenase, human chorionic gonadotropin, and alpha-fetoprotein are found in germ cell tumors, but their use in epithelial ovarian cancer is not well established. Carcinoembryonic antigen (CEA) levels are likely to be elevated in advanced and bulky disease, but CEA is considered a nonspecific marker and may be elevated in the presence of other types of cancer. Newer research studies using protein patterns, elevated lysophosphatidic acid levels, and decreased epidermal growth factor receptors all have shown improved sensitivity over CA-125 for ovarian cancer detection. Nevertheless, these tests only have been used in small research studies and are not widely available. Genetic counseling for women who are known to carry the *BRCA1* or *BRCA2* gene, and are subsequently at increased risk for breast and ovarian cancers, is an increasing focus as well (Meunier, 2005).

### Q 4.23

**What are the risk factors for and symptoms of ovarian cancer?**

Risk factors for ovarian cancer include age (usually older than 50); nulliparity; first birth after the age of 35; obesity; family history of ovarian cancer; personal history of endometrial, breast, or colon cancer; the use of estrogen-only hormone replacement; and European or North American descent. Although infertility treatment has not been proven to increase a woman's risk of ovarian cancer, anecdotal reports seem to suggest a link. This may be because of the underlying cause of infertility or perhaps because of the infertility treatments themselves. Genetic presence of *BRCA1* mutation associated with breast cancer and polycystic ovarian disease leads to ovarian cancer development in 5%–10% of women (Roesser & Mullineaux, 2005). Researchers have associated the use of oral contraceptives, pregnancy, and breast-feeding with a lower risk of ovarian cancer.

Symptoms of ovarian cancer usually result from extension of the disease beyond the pelvis, because the ovary itself can become very large without producing symptoms. For that reason, symptoms often are nonspecific and include bloating, abdominal swelling, abdominal or pelvic pain, abdominal fullness, pelvic pressure, dyspepsia, anorexia, urinary frequency, and weight gain. Weight loss, nausea, vomiting, anorexia, and severe pain are associated with advanced disease.

### Q 4.24

**Why is the mortality rate so high for ovarian cancer?**

Mortality for ovarian cancer is linked to many factors. The most critical factor related to treatment outcome is the stage of the disease at the time of diagnosis. Unfortunately, many women with ovarian cancer are unaware of their disease until it has advanced. Initial treatment results vary based on the stage of disease at diagnosis. Metastasis usually occurs through direct extension of disease and hematologic spread. Sadly, although many chemotherapy agents have been used in treating recurrent ovarian cancer, response rates usually are poor.

### Q 4.25

**What is the best treatment for ovarian cancer?**

Options for treatment include surgery, chemotherapy, and radiation therapy. Treatment decisions depend on the stage of disease. Total abdominal hysterectomy and oophorectomy and other surgical techniques are used for treatment and for the detection of metastatic disease. Patients may undergo total abdominal and pelvic radiation or intraperitoneal radiation if minimal residual disease exists postoperatively. Combination chemotherapy with a taxane and a cisplatin- or carboplatin-based combination is considered standard treatment for more extensive disease. Neoadjuvant treatment aimed at reducing tumor burden preoperatively is now an option. Ovarian cancer recurs in up to 80% of women. Clinical trials and treatment approaches continue to evolve (Martin, 2004).

## Summary

### Q 4.26

**What are the key questions I should ask my doctor in relation to these types of cancer?**

Key points of concern for women to discuss with their physicians include the woman's individual risk factors, appropriate screening and early detection methods, and lifestyle management and cancer prevention. If a woman is diagnosed with a gynecologic malignancy, questions will focus on tumor type and stage, treatment options, potential for clinical trials, insurance coverage, and sources of support during treatment. Once

treatment has begun, women should regularly discuss side effects and their management, disease response to therapy, emotional and personal issues related to the adjustments demanded by cancer and its treatment, and general health. If cancer treatment is successful and a woman is in remission, questions will focus on appropriate follow-up and monitoring, long-term side effects, and ongoing support for the woman and her significant others. Throughout the process, honest communication is a vital part of diagnosis, treatment, and health.

## Q 4.27

**What side effects of treatment do women undergoing treatment for gynecologic cancer commonly experience?**

Side effects will vary with each treatment modality. Because surgery, radiation therapy, and chemotherapy all can be used for various stages of cervical, uterine, or ovarian cancer, some side effects can be generalized.

In general, surgical side effects include pain and the potential for wound complications and infection. Radiation therapy may cause skin irritation and site-specific difficulties such as vaginal dryness or diarrhea. Because most gynecologic treatment regimens involve combination chemotherapy, side effects most likely will include nausea and vomiting, potential for hair loss, fatigue, potential for infection, and peripheral neuropathies. The physician will discuss specific regimens and will provide a more detailed discussion of side effects. Additionally, changes in body image, altered hormonal balance, and other factors place women undergoing treatment at risk for depression, weight gain or loss resulting from alterations in diet, changes in role patterns and relationships, and changes in sleep patterns.

## Q 4.28

**What support organizations exist to assist patients and families?**

Multiple support groups exist to support women with cancer and women with each specific diagnosis. Medical institutions and national groups such as the American Cancer Society and the National Cancer Coalition may host support groups. Programs such as the American Cancer Society's "I Can Cope" and "Look Good . . . Feel Better" are designed for patients with any cancer diagnosis and are a great source of emotional support for patients and families. Multiple resources for information and support are available on the Internet as well.

## References


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## Appendix. Resources

**American Cancer Society:** www.cancer.org
**Methodist Hospital System:** www.methodisthealth.com/health/gynonc/uterine.htm
**National Cancer Coalition:** www.nationalcancercoalition.org
**National Cancer Institute:** www.cancer.gov
**National Cervical Cancer Coalition:** www.nccc-online.org
**National Ovarian Cancer Coalition:** www.ovarian.org
**Oncology Nursing Society:** www.ons.org