Ovarian cancer is the most lethal gynecologic cancer. Early-stage diagnosis is difficult, and chemotherapy treatments often are not durable. Despite challenges, progress has been made since the 1990s; healthcare professionals now have an increased understanding of the disease biology and can identify hereditary ovarian cancer and provide screening recommendations. The recognized importance of complete staging, cytoreductive surgery, and new effective treatments has made an improvement in five-year survival.

At a Glance
✦ Ovarian cancer is the most lethal gynecologic cancer.
✦ Most patients with ovarian cancer are diagnosed at advanced stages of disease.
✦ Improvements in staging, cytoreductive surgery, and adjuvant therapies have improved five-year survival.

Pathophysiology

The primary method of ovarian cancer metastasis is by the exfoliation of cells that implant along the surfaces of the peritoneal cavity; lymphatic and hematogenous dissemination also occurs but is less common. The exact molecular events that trigger the development of ovarian cancer have not been determined; however, epithelial ovarian cancer develops because of the malignant transformation of the epithelium on the surface of the ovary. The origin of ovarian cancer centers on reproduction and ovulation. Two general hypotheses of ovarian cancer pathogenesis are the incessant ovulation theory and the excess gonadotropin secretion theory. Incessant ovulation theory posits that the risk of ovarian cancer is directly related to the number of ovulatory cycles and the repetitive trauma and repair ovulation causes (Fathalla, 1971). The excess gonadotropin secretion theory proposes that excess secretion of gonadotropin promotes high estrogen concentration, which may lead to epithelial proliferation and possible malignant transformation (Cramer & Welch, 1983).

Risk Factors

Genetics, hormones, reproduction, and lifestyle have been implicated as risk factors for ovarian cancer. Most ovarian cancer is not attributed to a specific cause. The most significant risk factor, hereditary ovarian cancer syndrome, increases the possibility of developing ovarian cancer by 25%-50% (Daly & Obrams, 1998). Women have a 4%-5% increased risk if a single family member was diagnosed with ovarian cancer, whereas those with two or more family members have a 7% increased risk (Daly & Obrams). Other hereditary syndromes are site-specific ovarian cancer, breast-ovarian cancer, and the family