

Risk of Gynecologic Cancer According to the Type of Endometriosis

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OBJECTIVE: To assess the risks of gynecologic cancer according to the type of endometriosis in women with surgically verified endometriosis.

METHODS: This is a population-based study of women with surgically verified endometriosis retrieved from the Finnish Hospital Discharge Register 1987–2012 (N=49,933); the subtypes of ovarian (n=23,210), peritoneal (n=20,187), and deep infiltrating (n=2,372) endometriosis were analyzed separately. Gynecologic cancers were obtained from the Finnish Cancer Registry. The outcome measure was the standardized incidence ratio (95% CI) calculated as the ratio between the observed to the expected number of cancers and defined for each gynecologic cancer and further stratified according to the histology, follow-up time since surgery, and age at follow-up. The follow-up was 838,685 person-years, and the Finnish female population served as the reference.

RESULTS: Endometriosis was associated with increased risk of ovarian cancer (standardized incidence ratio 1.76 [95% CI 1.47–2.08]), especially with endometrioid (3.12 [2.15–4.38]) and clear cell (5.17 [3.20–7.89]) histologic type and to a lesser extent with serous type (1.37 [1.02–1.80]). The risk of ovarian cancer was highest among women with ovarian endometriosis and especially for endometrioid (4.72 [2.75–7.56]) and clear cell (10.1 [5.50–16.9]) ovarian cancer, occurring 5–10 years after the index surgery. The overall risk of ovarian cancer was not increased among women with peritoneal and deep infiltrating endometriosis. However, peritoneal endometriosis was associated with a twofold increase in risk of endometrioid histology. The risk of endometrial cancer was not altered in the entire cohort. The standardized incidence ratio for precancerous cervical lesions was 0.81 (0.71–0.92) and for invasive squamous cell carcinoma of the cervical cancer 0.46 (0.20–0.91).

CONCLUSION: The excess risk of ovarian cancer among women with ovarian endometriosis translates into two excess cases per 1,000 patients followed for 10 years. Acknowledging these risks is important when planning long-term management of women with endometriosis.

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Each author has indicated that he or she has met the journal's requirements for authorship.

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The association between endometriosis and cancer has been studied intensively. Endometriosis is characterized by chronic inflammation, tissue-specific excess production of estrogen, and resistance to progesterone,¹ which characteristics may also predispose to cancer. In addition, endometriosis presents cancer-like characteristics such as tissue invasion, angiogenesis, and decreased apoptosis.^{2,3}

An increased risk of ovarian cancer among women with endometriosis has been found in several cohort and case-control studies with relative risk between 1.3 and 1.9.^{4–6} The relative risk has been higher for clear cell and endometrioid types of ovarian cancer.^{4,7–9} Endometriosis or its atypical form are found in one third of endometrioid and clear cell

