

# **Egyptian Fertility Sterility Society**

## **The 20<sup>th</sup> Editorials**

### **How do endometriosis subtypes influence ovarian cancer risk?**

**Prof. Ibrahim Mahrous, Al Azhar University**

**Dr. Mohamed El Sherbiny, MOH**

#### **What is known already?**

Endometriosis is thought to affect approximately 11% of reproductive-aged women including 50% to 60% of women and teenage girls with pelvic pain and up to 50% of women with infertility [1-2]. Although pelvic pain and infertility are the most well-known comorbidities of endometriosis, ovarian, breast, and endometrial cancers are also purported to be associated with endometriosis. A 2021 systematic review and meta-analysis reported that women with endometriosis have nearly 2 times the risk of ovarian cancer (summary relative risk [SRR], 1.93 [95% CI, 1.68-2.22]; n = 24 studies) compared with those without, although associations varied by ovarian cancer histotype [3]. There was strong evidence to support associations between endometriosis and clear cell (SRR, 3.44 [95% CI, 2.82-4.20]; n = 5 studies), endometrioid (SRR, 2.33 [95% CI, 1.82-2.98]; n = 5 studies), and low-grade serous (SRR, 2.33 [95% CI, 1.64-3.31]; n = 2 studies) ovarian cancer [3]. However, associations were not consistently detected for high-grade serous (SRR, 1.08 [95% CI, 0.88-1.32]; n = 3 studies) or mucinous (SRR, 0.98 [95% CI, 0.74-1.29]; n = 5 studies) tumors [3].

Although multiple studies have assessed heterogeneity in associations between endometriosis and ovarian cancer histotypes, associations

between endometriosis macrophenotypic subtypes (superficial peritoneal endometriosis, endometriomas, and deep infiltrating endometriosis and ovarian cancer have not been adequately explored [3-4].

### **What is New?**

A population-based cohort study assembled by matching 78 893 women with endometriosis in a 1:5 ratio to women without endometriosis [5] reported that:

- 1- There were 597 women with ovarian cancer. Ovarian cancer risk was higher among women with endometriosis compared with women without endometriosis (aHR, 4.20 [95%CI, 3.59-4.91]; aRD, 9.90 [95%CI, 7.22-12.57])
- 2- The risk of type I ovarian cancer was especially high (aHR, 7.48 [95%CI, 5.80-9.65]; aRD, 7.53 [95%CI, 5.46-9.61]).
- 3- Ovarian cancer risk was highest in women with deep infiltrating endometriosis and/or ovarian endometriomas for all ovarian cancers (aHR, 9.66 [95%CI, 7.77-12.00]; aRD, 26.71 [95%CI, 20.01-33.41]), type I ovarian cancer (aHR, 18.96 [95%CI, 13.78-26.08]; aRD, 19.57 [95%CI, 13.80-25.35]), and type II ovarian cancer (aHR, 3.72 [95%CI, 2.31-5.98]; aRD, 2.42 [95%CI, -0.01 to 4.85]).

### **Clinical Implications**

Ovarian cancer risk is considerably increased among women with ovarian endometriomas and/or deep infiltrating endometriosis. This population may benefit from counseling regarding ovarian cancer risk and prevention and could be an important population for targeted screening and prevention studies.

## References

1. Buck Louis GM, Hediger ML, Peterson CM, et al;ENDO StudyWorking Group. Incidence of endometriosis by study population and diagnostic method: the ENDO study. *Fertil Steril*. 2011;96(2): 360-365. doi:10.1016/j.fertnstert.05.087, 2011
2. Giudice LC. Endometriosis. *N Engl J Med*.362(25):2389-2398. doi:10.1056/NEJMcp1000274, 2010
3. Kvaskoff M, Mahamat-Saleh Y, Farland LV, et al. Endometriosis and cancer: a systematic review and meta-analysis. *Hum Reprod Update*.;27(2): 393-420, 2021
4. Sorbi F, Capezzuoli T, Saso S, et al. The relation between endometrioma and ovarian cancer.*Minerva Obstet Gynecol*.;73(3):347-353. 2021
- 5- Mollie E. Barnard, Leslie V. Farland, Bin Yan, MSTAT; JingWang, ; Britton Trabert,;Jennifer A. Doherty, Huong D. Meeks, ; Myke Madsen, MSTAT; Emily Guinto, Lindsay J. Collin, Kathryn A. Maurer, Jessica M., Amber C. Kiser, Michael W. Varner, Kristina Allen-Brady, Anna Z. Pollack, Kurt R. Peterson, C. Matthew Peterson, Karen C. Schliep, Endometriosis Typology and Ovarian Cancer Risk *JAMA* Volume 332, Number 6, August 13, 2024