**Factors for Optimal Long-Term Control and Hormone-Sensitive Cancer Risks in Patients with Endometriosis: A Retrospective Cohort Study**

F Huang1, W Chang2, B Sheu2

1National Taiwan University Hospital Yunlin Branch, Yunlin, Taiwan,

2National Taiwan University Hospital, Taipei, Taiwan

**Country: Taiwan**

**Introduction/Background**

Medical treatments have become the mainstay for the management of endometriosis, reserving surgery for treatment failures or suspected malignancy1. Dienogest, a fourth-generation progestin, effectively controls dysmenorrhea and prevents endometrioma recurrence over the long term with minimal side effects. Nonetheless, concerns regarding cancer and thromboembolism from extended hormone therapy remain2,3.

**Materials and Methods**

The study analyzed data from patients with endometriosis (January 1, 2017 - December 31, 2022) using an institutional database. Medication types and dosages, including dienogest, danazol, combined oral contraceptives, levonorgestrel intrauterine device, and leuprolide were assessed. The primary outcome was the uptake of definitive surgery (oophorectomy or hysterectomy); secondary outcomes included the development of hormone-sensitive cancers and thromboembolism. Analysis was conducted via one-to-one propensity score matching and the Cox proportional hazard model.

**Results**

The study enrolled 12,104 patients, with 38.8% diagnosed with adenomyosis and 9.6% with endometrioma. The average age at diagnosis was 41.21 (± 8.06) years. Over an average follow-up of 1,223 days, older age and higher BMI increased the risk of hysterectomy in adenomyosis patients (HRs 1.08 and 1.07, respectively). Longer use of dienogest effectively reduced this risk (HR 0.997). In endometrioma patients, age was associated with a higher oophorectomy risk (HR 1.10), with no effective preventive treatments. There were 55 (0.45%) cases of breast cancer, 30 (0.25%) cases of endometrial cancer, 22 (0.18%) cases of ovarian cancer, and 87 (0.7%) cardiovascular/cerebrovascular events. Overall, medical treatments had a limited effect on the incidence of these cancers, cardiovascular events, or cerebrovascular diseases.

**Conclusion**

In the Asian population, dienogest effectively reduced the need for definitive surgeries in patients with adenomyosis, but not for endometrioma, without increasing the risk of hormone-sensitive cancers and thromboembolic events. More evidence is needed from larger cohorts and long-term follow-up in populations of different ethnicities and cultures.

**Key words**

Sterilization, neoplasms, thromboembolism

**Reference**

1. Chapron C, Marcellin L, Borghese B, Santulli P. Rethinking mechanisms, diagnosis and management of endometriosis. Nat Rev Endocrinol. 2019;15(11):666-682. doi:10.1038/s41574-019-0245-z
2. Huang KJ, Li YX, Wu CJ, Chang WC, Wei LH, Sheu BC. Effects of Dienogest on breasts of women of reproductive age and women in menopausal transition: A cohort study. Int J Gynaecol Obstet. 2023;162(3):1114-1116. doi:10.1002/ijgo.14930
3. Huang KJ, Li YX, Wu CJ, Chang WC, Wei LH, Sheu BC. Sonographic features differentiating early-stage ovarian clear cell carcinoma from endometrioma with atypical features. J Ovarian Res. 2022;15(1):84. Published 2022 Jul 14. doi:10.1186/s13048-022-01019-8