

## **Risk Factors and Biomarkers for the Recurrence of Ovarian Endometrioma: About the Immunoreactivity of Progesterone Receptor Isoform B and Nuclear Factor Kappa B.**

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**Abstract :** Introduction: Ovarian endometrioma is one of the important causes of poor ovarian reserve and up to half of them have recurred. However, the treatment for recurrence prevention has limited efficiency and repeated surgical management makes worsen the ovarian reserve. To find better management for recurrence prevention, we investigated risk factors and biomarkers for the recurrence of ovarian endometrioma. Methods: The medical records of women with the history of surgical dissection for ovarian endometrioma were collected. After exclusion of the cases with concurrent hysterectomy, been menopausal during follow-up, incomplete medical record, and loss of follow-up, a total of 134 women were enrolled. Immunohistochemical staining for progesterone receptor isoform B (PR-B) and nuclear factor kappa B (NFκB) was done with the fixed tissue blocks of their endometriomas which were collected at the time of surgery. Results: Severity of dysmenorrhea and co-existence of adenomyosis had significant correlation with recurrence of endometrioma. Increased PR-B (P = .041) and decreased NFκB (P = .036) immunoreactivity were found in recurrent group. Serum CA-125 level at the time of recurrence was higher than the highest level of CA-125 during follow-up in unrecurred group (55.6 vs. 21.3 U/mL, P = .014). Conclusion: We found that the severity of dysmenorrhea and coexistence of adenomyosis are risk factors for recurrence of ovarian endometrioma, and serial follow-up of CA-125 is effective to detect and prevent the recurrence. However, to determine the possibility of immunoreactivity of PR-B and NFκB as biomarkers for ovarian endometrioma, further studies of various races and large numbers with prospective design are needed.

**Keywords :** endometriosis, recurrence, biomarker, risk factor

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