



The impact of excision of benign nonendometriotic ovarian cysts on ovarian reserve: a systematic review

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Abstract:

BACKGROUND: Benign nonendometriotic ovarian cysts are very common and often require surgical excision. However, there has been a growing concern over the possible damaging effect of this surgery on ovarian reserve. **OBJECTIVE:** The aim of this metaanalysis was to investigate the impact of excision of benign nonendometriotic ovarian cysts on ovarian reserve as determined by serum anti-Müllerian hormone level. **DATA SOURCES:** MEDLINE, Scopus, ScienceDirect, and Embase were searched electronically. **STUDY DESIGN:** All prospective and retrospective cohort studies as well as randomized trials that analyzed changes of serum anti-Müllerian hormone concentrations after excision of benign nonendometriotic cysts were eligible. Twenty-five studies were identified, of which 10 were included in this analysis. **DATA EXTRACTION:** Two reviewers performed the data extraction independently. **RESULTS:** A pooled analysis of 367 patients showed a statistically significant decline in serum anti-Müllerian hormone concentration after ovarian cystectomy (weighted mean difference, -1.14 ng/mL; 95% confidence interval, -1.36 to -0.92 ; I² 43%). Subgroup analysis including studies with a 3-month follow-up, studies using Gen II anti-Müllerian hormone assay and studies using IOT anti-Müllerian hormone assay improved heterogeneity and still showed significant postoperative decline of circulating anti-Müllerian hormone (weighted mean difference, -1.44 [95% confidence interval, -1.71 to -1.1 ; I² 0%], -0.88 [95% confidence interval, -1.71 to -0.04 ; I² 0%], and -1.56 [95% confidence interval, -2.44 to -0.69 ; I² 22%], respectively). Sensitivity analysis including studies with low risk of bias and excluding studies with possible confounding factors still showed a significant decline in circulating anti-Müllerian hormone. **CONCLUSION:** Excision of benign nonendometriotic ovarian cyst(s) seems to result in a marked reduction of circulating anti-Müllerian hormone. It remains to be established whether this reflects a real compromise to ovarian reserve.

Keywords:

anti-Müllerian hormone, benign ovarian cysts, ovarian cystectomy, ovarian reserve

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