

Comparative effect of different surgical treatments for ovarian endometrioma on AMH: a systematic review and network meta-analysis

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Background

Ovarian endometriomas are common in women of reproductive age. If surgical management is indicated, different surgical techniques are possible. We aimed to compare all relevant surgical techniques for endometriomas in terms of their impact on ovarian reserves.

Methods

We conducted a systematic review and network meta-analysis (NMA), searching PubMed, Embase and Cochrane Register of Trials for randomized controlled trials. We assessed the quality of included studies with the Cochrane risk of bias tool 2 and performed a network meta-analysis, comparing the head-to-head effect of different surgical strategies, calculating mean differences (MD) and 95% confidence intervals (CI).

Results

21 studies with 1519 participants, comparing eight different surgical techniques (cystectomy with ovarian suturing, cystectomy with hemostatic sealants, cystectomy with tranexamic acid, cystectomy alone, drainage with hemostatic sealants, drainage alone, laser ablation and transvaginal sclerotherapy) were included in the systematic review and 17 studies in the NMA. Regarding Anti-Müllerian hormone (AMH) at 3-6 months after surgery, drainage with hemostatic sealants (MD: 0.96; 95%CI [0.60-1.33]; high level of certainty), cystectomy with ovarian suturing (0.69 [0.39-0.98]; moderate certainty) and cystectomy with hemostatic sealants (0.37; [0.12-0.61]; low certainty) resulted in higher values of AMH compared with cystectomy alone. Regarding antral follicle count (AFC) at 3-6 months after surgery, laser ablation showed higher values of AFC (MD: 2.30; 95% CI: 0.20-4.40) compared with cystectomy alone at 3-6 months after surgery, followed by cystectomy with ovarian suturing (MD: 1.88 95% CI: 0.98-2.79). The overall risk of bias of included studies was low.

Conclusions

Considering the estimated effect sizes and certainty of evidence for both AMH and AFC, the interventions with the less negative impact on ovarian reserves were cystectomy with ovarian suturing and drainage with hemostatic sealants.

Keywords

Endometrioma, ovarian reserve