Long term outcomes of post-operative hormonal suppression in patients with endometriosis: a systematic review and meta-analysis

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Abstract

Introduction

The benefit of hormonal suppression following conservative surgery for endometriosis remains unclear. Our objective is to systematically evaluate the impact of postoperative hormonal suppression on endometriosis recurrence and change in pain symptoms.

Methods

Prospective observational studies and randomized control trials were extracted from MEDLINE, Embase, Cochrane CENTRAL, and Web of Science from inception to October 2018. Participants included pre-menopausal women undergoing surgical treatment of endometriosis, conserving at least one ovary. Post-operative medical treatment of at least 6 months was compared to no treatment/placebo. The primary outcome was endometriosis recurrence, and the secondary outcome was change in pain symptoms. Due to heterogeneous pain scoring across studies, change in pain score from pre-operative baseline to follow-up period was standardized using standard mean difference (SMD). Meta-analysis was performed using RevMan 5.3. Data was reported as odds ratios (OR) or standardized mean difference (SMD) with 95% confidence intervals (CI).

Results

Eighteen studies (3 observational, 15 RCT) were included, representing a total of 2081 patients (1160 intervention, 921 controls). Eight studies evaluated GnRH-a, 6 evaluated OCPs, 3 used post-operative LNG-IUDs, and 4 evaluated progestins. Treatment ranged from 6 months to 3 years, with a median follow up of 20 months (range: 6 months - 4 years). Patients treated with post-operative hormonal suppression had decreased odds of disease recurrence (OR: 0.40; 95% CI: 0.27 – 0.60, p < 0.001, 14 studies, 1678 patients). Odds of recurrence for individual interventions were as follows: GnRH-a OR: 0.58; 95% CI 0.37 – 0.93, p = 0.02, 6 studies 761 patients; OCP OR: 0.37; 95% CI: 0.14 – 0.95, p = 0.04, 5 studies, 721 patients; LNG-IUD OR 0.26; 95% CI: 0.09 – 0.75, p = 0.01, 3 studies 170 patients; progestins OR: 0.25; 95% CI: 0.09 – 0.60, p = 0.008, 2 studies, 165 patients.

Hormonally suppressed patients had greater reductions in pain at follow-up versus controls (SMD -0.54; 95% CI: -0.68 – -0.39, p < 0.001, 8 studies, 775 patients). SMD for individual interventions were as follows: GnRH-a SMD: -0.22; 95% CI: -0.41 – -0.04, p = 0.02, 4 studies, 501 patients, OCP SMD: -1.11; 95% CI: -1.50 – -0.72, p < 0.001, 1 study, 51 patients, LNG-IUD SMD: -0.85; 95% CI: -1.17 – -0.54, p < 0.001, 3 studies, 175 patients, progestins SMD: -1.92 – -0.77, p < 0.001, 2 studies, 61 patients.

Significant heterogeneity (I2>50%) was present in the GnRH-a and progestin group when evaluating change in pain scores and in the OCP group when looking at recurrence of endometriosis.

Conclusion

Post-operative hormonal suppression of endometriosis following conservative surgery decreases the odds of disease recurrence and results in a greater reduction in pelvic pain/dysmenorrhea compared to expectant management. Further studies are required to determine the most effective post-operative medical regimen.

Keywords : Endometriosis, dienogest, hormonal suppression

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