

Cerrillo M, Cruz M, Ferrando R, Garcia-Velasco JA.

IVI Madrid, Rey Juan Carlos University, Madrid, Spain

Title: Freeze-all strategy in endometriosis patients – a new indication?

Study question: To compare IVF outcome in women with moderate/severe endometriosis undergoing fresh versus subsequent embryo transfer after elective freezing of oocytes/embryos.

Summary answer: Women with moderate/severe endometriosis showed similar outcomes in IVF whether embryo transfer was performed in a fresh or a subsequent unstimulated cycle. A freeze-all strategy does not improve IVF outcome in women with endometriosis.

What is known already: the strategy of freeze-all is gaining popularity among physicians and patients due to the concept of a more natural environment and its implication on endometrial receptivity if embryos are transferred in an unstimulated cycle. This could be of particular interest in women with endometriosis, whose endometrial receptivity is still poorly understood as there is a pro-inflammatory status that could be enhanced by ovarian stimulation. Data of freeze-all strategy in this particular groups of patients is scarce and not clear.

Study design, size, duration: Retrospective analysis conducted in a University-affiliated IVF unit – 1647 infertile women undergoing IVF/ICSI between January 2014 and December 2015. Endometriosis was diagnosed either by histologically proven biopsy in those patients who had previous surgery or by published imaging criteria using transvaginal ultrasound.

Participants/materials, setting, methods: infertile women diagnosed with moderate or severe endometriosis –early stages were not considered- underwent ovarian stimulation for IVF/ICSI. One group of patients underwent fresh embryo transfer in the stimulated cycle (n=1404) whereas the other group opted for elective freezing of oocytes/embryos (n=243) and embryo transfer was postponed in a subsequent cycle, under hormonal replacement therapy.

Main results and the role of chance: a total of 1674 patients were included in the study. Both group of patients received similar doses of gonadotropins (rec FSH 1805 vs 1745 IU, HP hMG 1310 vs 1158 IU). Patients who underwent elective freezing showed higher E2 at the time of trigger (1591 v 2858 pg/mL, $p < 0.001$), higher progesterone levels (0.7 vs 1.9 ng/ml), and higher number of MII obtained (8.5 vs 11.4) than patients who opted for elective freezing. However, pregnancy rate was comparable between groups (53.4 vs 48.3%), and a higher implantation rate was observed after fresh embryo transfers (41.7 vs 34.5%, $p = 0.016$). Patients with previous ovarian surgery showed lower estradiol levels (1800 vs 2081 pg/mL), required higher doses of gonadotropins, but showed similar implantation and pregnancy rates (39.5 vs 41.4%, and 52.4 vs 52.8%)

Limitations, reasons for caution: although large, retrospective series provide real life data, the study design could be improved in a prospective, randomized controlled trial.

Wider implications of the findings: From our study, it does not seem that women with endometriosis may benefit from a freeze-all strategy, as it may not only increase time to pregnancy but also add unnecessary interventions such as oocyte/embryo freezing.

Trial registration number: 1701-MAD-005-JG