Reproductive outcome after transplantation of ovarian tissue: a systematic review.

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Abstract:

Abstract BACKGROUND: Despite interest in ovarian tissue transplantation (OTT) as a promising procedure for fertility preservation, to date, no precise data are available about its effectiveness. We systematically reviewed reproductive function after OTT for fertility preservation in women at high risk of premature ovarian failure (POF). METHODS: We searched the MEDLINE, EMBASE, Cochrane Systematic Reviews, CENTRAL, Web of Science and Scopus databases for studies on the reproductive outcomes after OTT in humans up to June 2007. Women with follicle-stimulating hormone (FSH) >30 IU/l at the time of OTT were included in a meta-analysis of individual-patient data to evaluate the time to re-establishment of ovarian function (ROF). Secondary outcomes included short-term (12 months) ovarian function (OVF) and pregnancy after OTT. RESULTS: We identified 25 reports including 46 unique cases. OTT was performed to treat POF in 27 women, to prevent POF in 15, to treat infertility in 2 and accidentally in 1. In 23 women with FSH >30 at the time of OTT, OVF was re-established with a median time to ROF of 120 days (range 60-244). Within 6 months after ROF, four women had recurrent ovarian failure. There are insufficient data to evaluate the long-term OVF (>12 months). Fresh grafts had an increased likelihood of return of OVF and a decreased likelihood for recurrent ovarian failure compared with cryopreserved grafts [HR of 2.44 (95% CI 0.92, 6.49) and 0.47 (95% CI 0.18, 1.12), respectively]. In 25 women who sought pregnancy, eight women had nine pregnancies at 12 months, giving a cumulative pregnancy rate of 37% (95% CI 19, 60). CONCLUSIONS: Transplantation of ovarian tissue can re-establish OVF after POF; however, the efficacy of OTT using cryopreserved tissues is not yet equivalent to that of fresh grafts. A controlled multicenter trial with sufficient follow-up would provide valid evidence of the potential benefit of this procedure.

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