

Pregnancy rates following frozen embryo transfer (ET) in women failing to conceive despite fresh ET in women using low dosage follicle stimulating hormone (FSH) protocol for follicular maturation of several eggs

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Summary

Purpose: To determine the pregnancy rate following frozen embryo transfer using embryos derived from low dosage follicle stimulating hormone (FSH) stimulation protocols in women aged ≤ 42 who did not have diminished egg reserve as evidenced by a day 3 serum FSH ≤ 12 mIU/ml. **Methods:** A retrospective review was performed evaluating pregnancy rates on frozen embryo transfers from women who usually had diminished egg reserve and thus used no more than 150 IU of FSH. The pregnancy rates were calculated on the first frozen embryo transfer of women failing to successfully conceive on the fresh embryo transfer. **Results:** The clinical and live delivered pregnancy rates per transfer were 33.3% (14/42) and 23.8%. The implantation rate was 20.0%. Thirty-one percent of the transfers were in women aged 40-42. **Conclusions:** These data show that despite the fact that with minimal stimulation protocols, the remaining frozen embryos are of lesser quality because of de-selection, nevertheless, it is worth transferring these embryos.

Key words: Minimal stimulation; Frozen embryo transfer.

Introduction

There are data demonstrating good pregnancy rates in women up to age 42 undergoing in vitro fertilization (IVF) and fresh embryo transfer (ET) despite having diminished egg reserve as manifested by an elevated day 3 serum follicle stimulating hormone (FSH) [1-3].

A good live delivery rate has been reported despite the transfer of only one embryo in this group of women with a paucity of remaining follicles [2, 3].

Live deliveries following IVF-ET and fresh embryo transfer have even occurred in women in apparent premature menopause where ovulation was achieved by restoring down regulated FSH receptors in the granulosa-theca cells of the follicle using ethinyl estradiol [4, 5].

Very good live delivery rates have been found in women with normal embryo reserve using low dosage gonadotropin stimulation controlled ovarian hyperstimulation (COH) protocols [6].

Women with diminished egg reserve are not likely to have leftover frozen embryos. However, it would not be unusual to have embryos to freeze following embryo transfer of fresh embryos in women with normal egg reserve using low-dose gonadotropin stimulation.

The number of cryopreserved embryos would be likely to be less when using low-dose gonadotropin protocols vs high-dose FSH in women with normal egg reserve.

The embryos available for freezing are more likely to have lower morphology scores based on blastomere number and fragmentation based on de-selection for the fresh transfers compared to women having frozen embryo transfer as a result of traditional high-dose COH regimens.

The objective of the present study was to evaluate the pregnancy rate following frozen embryo transfer in women who had been stimulated by low dosage regimens but whose ovarian egg reserve is adequate based on day 3 serum FSH levels.

Materials and Methods

Retrospective review of frozen embryo transfer cycles in women using minimal or low-dose gonadotropin stimulation protocol.

By low dosage it is meant that they did not use more than 150 IU of exogenous FSH unless a gonadotropin releasing hormone (GnRH) antagonist was used (cetrorelix or ganirelix with a 14 mm diameter follicle) when the dosage could be increased by 75 IU.

Women were aged ≤ 42 . The day 3 serum FSH was ≤ 12 mIU/ml. Pregnancy rates on first frozen-thawed embryo transfer after a failed fresh transfer were determined. Thus the embryos were de-selected. If all embryos were frozen and no fresh ET occurred from that oocyte retrieval, the woman was excluded from the study.

The same woman could be used more than one time as long as the second batch of frozen embryos resulted from another de-selected fresh embryo transfer. There were no minimal criteria for embryo morphology to allow embryo transfer except a minimum of four blastomeres. No embryo was excluded because of severe fragmentation.

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Results

Forty-two frozen-thawed embryo transfers were evaluated. Twenty-eight women were aged ≤ 39 , and 14 were aged 40-42 at the time of egg retrieval. The clinical pregnancy rate per transfer was 33.3% (14/42). The live delivery rate was 23.8% (10/42). The implantation rate was 20.0%. The average number of embryos transferred was 2.5.

Discussion

These 42 frozen embryo transfer cycles were taken from the 141 women with normal egg reserve having low-dose gonadotropin stimulation who did not achieve a live pregnancy. Some proceeded to another fresh transfer so they did not proceed with a frozen embryo transfer. There were 31 such patients.

Frozen embryos were available in 42 of the remaining 110 women (37.2%) despite the low dosage of gonadotropins used for stimulation. These data show that in spite of the fact that with minimal stimulation protocols the remaining embryos have lower morphology scores because of de-selection, nevertheless, it is worth transferring these embryos before proceeding to another IVF-ET cycle.

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