

The effect of endometriosis on pregnancy outcome following in vitro fertilization-embryo transfer (IVF-ET) in women with decreased egg reserve

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Summary

Purpose: To determine the effect of the presence of endometriosis on the delivered pregnancy rate following in vitro fertilization-embryo transfer. **Methods:** A retrospective cohort analysis of fresh or frozen embryo transfer in women with diminished egg reserve having IVF-ET and who also had had a laparoscopy. The data was analyzed as to whether endometriosis was present or not. **Results:** The data demonstrated that women with diminished egg reserve can achieve pregnancies following IVF-ET. The presence of endometriosis did not have any negative effects on pregnancy rates. **Conclusions:** At least in women with diminished egg reserve the presence of endometriosis did not impair outcome following IVF-ET.

Key words: Diminished egg reserve; Endometriosis; In vitro fertilization-embryo transfer.

Introduction

Endometriosis is one of the most common gynecologic disorders and is significantly more prevalent in the setting of infertility [1, 2]. The prevalence of endometriosis in infertile women ranges from 25-50% compared to 5% in fertile women [2]. There are data suggesting that minimal or mild endometriosis may be associated with decreased fertility potential [3-6].

The majority of women with mild endometriosis have their infertility problem resolved by correcting luteal phase deficiencies and correcting the luteinized unruptured follicle syndrome [7]. However it has been demonstrated that the removal of mild endometriosis in women who have been resistant to treatment can improve pregnancy rates [8, 9].

Some infertile women with endometriosis resistant to conservative therapy conceive following in vitro fertilization-embryo transfer (IVF-ET) without surgically correcting the endometriosis [7]. However in some instances, especially Stage III-IV endometriosis, there are data suggesting reduced fertilization rates with IVF as compared to women with milder endometriosis [10, 11]. Some studies show that removing the endometriosis surgically can improve success rates following IVF-ET including women previously failing with IVF-ET [12-14]. However other studies have failed to find that removal of endometriosis improves IVF-ET outcome [7].

Another area of controversy is whether successful pregnancies are possible in women with elevated serum

FSH with IVF-ET. Many early studies found that women with serum FSH on day 3 were not likely to achieve pregnancies even with IVF-ET [15-20]. Even recently a study from one of the world's most successful IVF centers found that if the serum FSH was > 15 mIU/ml, they had no live pregnancies following the transfer of what appeared to be normal embryos and they strongly suggested that the patient should proceed to donor eggs under these conditions [21].

Not all studies share this negative experience [22, 23]. Pregnancy rates have been as high as 38-42% in women aged 39 and under with 6-8 cell single embryo transfers [23]. The different experience has been attributed to using much less stimulation [24]. There have even been some cases of overt ovarian failure that have had live deliveries following IVF-ET [25, 26].

The present study was initiated to determine if endometriosis exerts any adverse effect on women with diminished egg reserve.

Materials and Methods

A retrospective review was performed during a 4-year time period (2000-2004) of infertile women having had a laparoscopy and who had a day 3 serum FSH > 12 mIU/ml and who were undergoing IVF-ET. The women were stratified according to whether endometriosis was present or not. The women were 38 years of age.

The delivered pregnancy rate was determined for the first transfer. The delivered pregnancy rate was also calculated for the first four transfers (fresh or frozen) unless pregnancy occurred first. There were no restrictions for number of eggs retrieved. Most often minimal or natural protocols were used [23, 24].

Results

For women < age 38 (n = 18), the median age was 36. Endometriosis was present in 77.7% (n = 14).

The median serum FSH was 17 mIU/ml in the group without endometriosis while the median serum FSH was 18 mIU/ml in the group with endometriosis.

The delivered pregnancy rates (first embryo transfer) for women age \leq 38 without endometriosis was 50% (2/4) and for those with endometriosis – 28.6% (4/14).

The delivered pregnancy rate (up to 4 cycles) without endometriosis was 75% (3/4) and with endometriosis 64.3% (9/14).

Discussion

These data confirm that live delivered pregnancies are possible following IVF-ET despite diminished egg reserve. There was a 33.3% live delivered pregnancy rate in the first IVF-ET cycle counting all women with four fresh or frozen ETs. Two-thirds of the women (12/18) achieved a live delivery.

There were not that many infertile women with diminished egg reserve who requested a laparoscopy. Most women even with classic symptoms prefer not to have a laparoscopy fearing more ovarian damage. One should not conclude that the majority of women with diminished egg reserve have endometriosis since this was a selective group with symptoms of endometriosis who requested laparoscopy or at least accepted the option. At least for this group with diminished egg reserve there did not seem to be an adverse effect of endometriosis.

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