

Reproductive Biology Section

A matched controlled study to evaluate the efficacy of acupuncture for improving pregnancy rates following in vitro fertilization-embryo transfer

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Summary

Purpose: To determine if acupuncture performed during the follicular phase and luteal phase but not on the day of embryo transfer could improve the outcome following IVF-ET compared to controls. **Methods:** Acupuncture was started biweekly from day 5 of the follicular phase through the luteal phase but not on the day of the transfer. Controls were matched according to age, same number of previous failed IVF cycles and same type of embryo transfer (fresh or frozen). **Results:** The clinical and ongoing (delivered pregnancy rates per transfer) for 32 women undergoing IVF-ET and acupuncture was 40.6% and 37.5%, respectively vs 53.1% and 43.7% for controls. The median number of previous failed IVF cycles was three. **Conclusions:** Acupuncture performed twice weekly during the follicular and luteal phase does not seem to improve pregnancy rates following IVF-ET.

Key words: Acupuncture; Follicular and luteal phase; Embryo transfer.

Introduction

In vitro fertilization (IVF) is an expensive procedure and some couples can only afford a limited number. Thus it is important to maximize the efficiency of the procedure.

There have been some claims that acupuncture may improve the outcome following IVF-embryo transfer (ET). Two studies showed higher pregnancy rates when acupuncture was performed on the day of transfer compared to controls [1]. Another study found an insignificant trend for higher pregnancy rates when given at weekly intervals prior to IVF-ET and on the day of embryo transfer [2]. A randomized prospective study found a significantly higher pregnancy rate vs controls when acupuncture was given during the luteal phase of an IVF-ET cycle [3].

Often times patients can undergo acupuncture near their geographic location but the IVF center itself does not provide any acupuncture service, thus performing acupuncture 30 minutes before and 30 minutes after embryo transfer is not possible. The present study evaluated whether acupuncture performed both during the follicular phase and luteal phase but not immediately before and after embryo transfer improves IVF-ET outcome.

Materials and Methods

Acupuncture was started on day 5 of the IVF cycle and was performed twice a week until two weeks after oocyte retrieval.

Sterile stainless steel needles (0.25 x 0.25 mm) were inserted about 5 to 10 mm and left in for 30 minutes depending on the

region of the body. Before ET the following locations were used: CX6 (neiquan), GB8 (shuaigu), GB9 (tianchong), ST36 (zusanli) SP10 (xuehai), SP8 (diji), LIV3 (taichong), zigong, S29 (guilai), R4 (quanyuan), R6 (qihai). Afterwords ET the needles were inserted at the following points: ST36 (zusanli), SP10 (xuehai), SP9 (yinlingquan), LIV3 (taichong), BL23 (shenshu), BL20 (pishu), BL15 (xinshu).

All treatments were performed by the same well-trained acupuncturist and all patients were treated in the same way. The acupuncturist was an OB/GYN specialist from China not licensed as a physician in the United States but licensed as an ultrasonographer and acupuncturist, and she worked in the Pennsylvania office. In vitro fertilization-embryo transfer was always performed in the New Jersey facility. Thus she was unable to be in Pennsylvania doing ultrasounds and be in New Jersey for embryo transfers.

Women undergoing in vitro fertilization (IVF)-ET were offered the option of acupuncture. Once this option was selected, the woman was matched to the next patient undergoing IVF-ET having the same age, same number of previous IVF cycles with failure to achieve successful pregnancy, and same type of transfer (fresh or frozen).

Results

There were 32 matched pairs evaluated. The mean age for those receiving acupuncture was 37.9 vs 36.7 for the controls. A comparison of clinical pregnancy rates per transfer (ultrasound evidence of pregnancy) is shown in Table 1.

The clinical pregnancy rate with acupuncture was 40.6% and without acupuncture it was 53.1% (chi-square test, $p = \text{NS}$) (Table 2). For paired results, 68.75% of the paired cycles had the same outcome. In three (9.4%) cycles the women with acupuncture conceived, the ones

Table 1. — *Pregnancy outcomes for 32 matched pairs**.

Outcome for pair	Clinical pregnancy	Viable pregnancy
Both pregnant	10 (31.2%)	9 (28.1%)
Neither pregnant	12 (37.5%)	15 (46.9%)
Acupuncture patient Pregnant/control not pregnant	3 (9.4%)	3 (9.4%)
Acupuncture patient not pregnant/control pregnant	7 (21.9%)	5 (15.6%)

* p = NS, McNemar test.

without did not. In seven (21.9%) cycles the women without acupuncture conceived, the ones with acupuncture did not (p = NS, McNemar test).

A comparison of ongoing/delivered pregnancy rate is in Table 2. Pregnancy rate with acupuncture was 37.5%. Pregnancy rate without acupuncture was 43.8% (chi-square test, p = NS).

Of the paired cycles 75% had the same outcome. In three (9.4%) cycles the women with acupuncture conceived, the ones without did not. In seven (15.6%) cycles the women without acupuncture conceived, the ones with acupuncture did not (p = NS, McNemar test).

Table 2. — *Clinical pregnancy outcome by treatment**.

	Clinical pregnancy rate	Viable pregnancy rate
Acupuncture	40.6% (13/32)	37.5% (12/32)
Control	53.1% (17/32)	43.8% (14/32)

* p = NS, Chi-square test.

Conclusion

Acupuncture performed in the manner described did not seem to improve pregnancy outcome following IVF-ET. Some previous studies have suggested that performing acupuncture bi-weekly, and immediately prior to ET and after improves outcome [4]. We performed bi-weekly acupuncture but did not perform the procedure on the day of the transfer.

Possibly acupuncture performed in a somewhat different manner or on a different group of patients may still prove as an effective adjunctive therapy for women having IVF-ET. However at this point it does not appear that performing acupuncture two times a week during the follicular phase and during the luteal phase helps pregnancy outcome.

The present data do not challenge conclusions made about acupuncture performed before and after the transfer. We were somewhat surprised as to how well both groups did despite failing to have successful conception in a median of three previous IVF cycles.

References

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