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Original Research Article

Influence of acupuncture on pregnancy rates in women undergoing in vitro fertilization



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ABSTRACT

Introduction: In recent years acupuncture has been used more and more often as an adjuvant infertility treatment. The first reports on the use of acupuncture in the infertility treatment were published in 1960. Many articles have been published about the effect of acupuncture on assisted reproductive techniques but the clinical significance of this technique is still controversial.

Aim: To evaluate the influence of acupuncture on the clinical pregnancy rate in infertility treatment by comparing a group of patients, who underwent acupuncture treatment during stimulation and/or before and after embryo transfer (ET) with a control group without acupuncture.

Material and methods: Patients who were undergoing in vitro fertilization or intracytoplasmic sperm injection treatment were divided into three groups through no random selection: (1) acupuncture during stimulation and on the day of ET; (2) acupuncture only on the day of ET; (3) control group treated only standard protocol, without acupuncture. Acupuncture was performed on 148 patients during stimulation and before and after ET. In the second group 142 patients received acupuncture only on the day of ET. In the control group (142 patients), embryos were transferred without acupuncture. Clinical pregnancy was defined as the presence of a fetal sac during an ultrasound examination 6–8 weeks after ET.

Results and discussion: Clinical pregnancies were documented in 66 patients (44.6%) in the first group, 55 patients (38.7%) in the second group and 50 (35.2%) in the control group.

Conclusions: There was no significant difference in the clinical pregnancy rate between groups; however, a small influence of acupuncture treatment effect cannot be excluded.

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1. Introduction

According to the European Society of Human Reproduction and Embryology 537,463 treatment cycles were reported from 33 European countries in 2009. The in vitro fertilization (IVF) is a costly method and can affect the physical and mental health of treated patients. About 70% of all assisted reproductive techniques (ART) cycles result in the transfer of at least one embryo. Pregnancy rate per embryo transfer (ET) was 32.9% after IVF and 32.0% after ICSI.⁹ Failure of implantation is the main factor limiting the success of IVF treatment. Specialists are constantly trying to increase the ratio of live births. In recent years acupuncture has been used more and more often as an adjuvant infertility treatment. The first reports on the use of acupuncture in the infertility treatment were published in 1960.⁷ Many articles have been published about the effect of acupuncture on ART but the clinical significance of this technique is still controversial.

Acupuncture is a traditional ancient Chinese treatment technique, which in theory is based on the qi energy flow. It is defined as a state of balance and harmony within individuals between Sky, Earth and Human. Important aspect of this balance is the relationship between yin and yang. Disorders are believed to cause diseases, which can be treated by stimulating specific points. Stimulating these points can correct imbalances in the flow of qi through channels known as meridians. Acupuncture has been recently proposed as a supplementary technique in the treatment of infertility. However scientific study has not found any histological or physiological correlation between qi, meridians and acupuncture points. Study focuses mainly on its potential role in enhancement of uterine receptivity through increased blood circulation,^{13,16} perceived reduction of anxiety and stress after acupuncture.^{1,14,15,22} Many meta-analyses were published regarding the impact assessment on the effectiveness of acupuncture therapy but they have provided ambiguous results.^{8,10,17,19,20,21,23,24} The mechanism of the potential positive influence remains unclear and still controversial.^{3,11,24}

2. Aim

The main objective was to evaluate whether acupuncture accompanying stimulation and ET increases clinical pregnancy rate in women undergoing ART. The secondary points were clinical pregnancy rates, miscarriage rates and ectopic pregnancy rates.

3. Material and methods

3.1. Patients

This prospective non-randomized one center study was carried out in the period from January 2010 to April 2012 at a fertility clinic. The main criteria of women included in this study were age more than 45 years and undergoing a IVF/ICSI and ET in the stimulated cycles. Each patient who has been included in the test groups performed stimulation and ET

during the standard procedures for in vitro. Acupuncture points were chosen for their sedative effect as well as to increase uterine blood flow. Women voluntarily underwent the acupuncture. Oocytes were retrieved by ultrasound-guided aspiration, a maximum of three embryos were transferred into the uterine cavity on 5th day after oocyte retrieval. All oocyte retrievals and ET were performed in the standard method.

Patients with positive pregnancy test had an ultrasound scan after 6 weeks of gestation in order to confirm a clinical pregnancy. A complete follow-up of all pregnancies is available. Patients who were lost to follow are not included in this study.

Sterile disposable stainless steel needles of 0.20 × 30 mm² (Lucos Med-Ultra Smoth 36GX 0.50") were inserted within a tissue level and manipulated until needle sensation was obtained *de qi* – a feeling of, for example, soreness or numbness, distension or pain. Needles will be inserted to a depth no greater than some millimeters and retained for 25 min. All the acupuncture procedures were performed by the same physician.

In our study we have compared three groups of patients.

3.1.1. Group 1

Medical acupuncture based on traditional Chinese medicine. Acupuncture performed on women participating in the study included core points such as (once or twice from 1 to 8 day cycle): ST6 (Jiache), HE7 (Shenmen), PC6 (Neiguan), KI6 (Zhaohai) or KI3 (Taixi), AA22 (Neifenmi), AA55 (Shenmen), AA58 (Zhi Gong), GV20 (Baihui), EX18 (Dongming 6), Ren3 (Zhongji), Ren4 (Guanyuan), Ren5 (Shimen), Ren6 (Qihai). Two subsequent treatments were administered on the day of ET pre and post transfer. Before ET (30 min), we used the following locations: HE7 (Shenmen), PC6 (Neiguan), EX1 (Taiyang), GV20 (Baihui), AA22 (Neifenmi), 58 (Zhi Gong), ST29 (Guilai) or ST30 (Qichong), KI6 (Zhaohai), Ren3 (Zhongji), Ren4 (Guanyuan), Ren5 (Shimen), Ren6 (Qihai) and after ET (30 min), the needles were inserted at the following points: LI4 (Zhongfeng), EX1 (Taiyang), GV20 (Baihui), AA22 (Neifenmi), ST36 (Zusanli), KI3 (Taixi) or KI6 (Zhaohai), LR2 (Zhongfeng), LR3 (Sanjian), Ren15 (Jiuwei).

3.1.2. Group 2

Therapeutic acupuncture based on traditional Chinese medicine. Acupuncture treatment was performed only on the day of the ET. Before ET (30 min), we used the following locations: HE7 (Shenmen), PC6 (Neiguan), EX1 (Taiyang), GV20 (Baihui), AA22 (Neifenmi), AA58 (Zhi Gong), ST29 (Guilai) or ST30 (Qichong), KI6 (Zhaohai), Ren3 (Zhongji), Ren4 (Guanyuan), Ren5 (Shimen), Ren6 (Qihai); and after ET (30 min): LI4 (Zhongfeng), EX1 (Taiyang), GV20 (Baihui), AA22 (Neifenmi), ST36 (Zusanli), KI3 (Taixi) or KI6 (Zhaohai), LR2 (Zhongfeng), LR3 (Sanjian), Ren15 (Jiuwei).

3.1.3. Group 3 (control panel)

Women undergoing our standard IVF protocol, who were not planning to have acupuncture.

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