

Clinical Report

A survey of acupuncture effect on the result of invitro fertilization

针刺对体外受精结局的影响

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ABSTRACT

Objective This study was made to evaluate the effect of acupuncture on fertilization results in the patients undergoing medical treatment with IVF. **Methods** This study was conducted on 164 infertile patients who had referred to the infertility clinic of Imam Khomeini Hospital in 2009–2010 (82 patients in acupuncture group and 82 in control group). In the acupuncture group, before embryo transfer on oocyte puncture day, 2 days after puncture and one cycle before embryo transfer the patients were put under electroacupuncture on the Bǎihui (百会 GV 20), Yāoyángguān (腰阳关 CV 3), Tàichōng (太冲 LR 3), Nèiguān (内关 PC 6), Sānyīnjiāo (三阴交 SP 6), Guīlái (归来 ST 29), Zúsānlǐ (足三里 ST 36), and Hégǔ (合谷 LI 4) for three times each for 25 minutes. The points on ears include nèi Shēngzhìqì (内生殖器 TF 2), and Shénmén (神门 TF 4). The control group received no acupuncture. Positive pregnancy test, clinical pregnancy, ongoing pregnancy were compared between the two groups. **Results** Pregnancy level in the acupuncture group were 34 pregnancies (41.5%) as compared to 21 (25.6%) in the control group ($P < 0.05$). Observation level of gestational sacs in the 5th week of pregnancy included 31 (37.8%) and 17 (20.7%) sacs in the acupuncture and control groups, respectively ($P < 0.05$). Level of ongoing pregnancies after 12 weeks included 21 (21.6%) and 12 (14.6%) pregnancies in the acupuncture and control groups, respectively ($P > 0.05$). **Conclusion** Acupuncture will considerably improve the result of IVF as compared to the control group.

KEY WORDS: invitro fertilization; embryo transfer; acupuncture

Acupuncture is a traditional therapeutic method that has been renewed in the shadow of scientific studies and researches and completed by modern medical science and has been used to cure a wide range of diseases including infertility. Infertility causes stress in the patient and leads to release of stress hormones. Acupuncture reduces stress and brings forth the fact that decrease of stress corrects fertility level. Therefore, acupuncture improves the result of invitro fertilization (IVF) through regulating neuroendocrinologic factors, increasing blood circulation in uterine and ovaries, regulating cytokines, reducing stress, anxiety and depression.

Considering the hypothesis that acupuncture on the embryo transfer day causes positive effects on uterine blood circulation and endometer quality, acupuncture in this study was done to improve the results of IVF before embryo transfer. The goal of study was to evaluate the effect of acupuncture on the level of positive pregnancy test, clinical pregnancy and ongoing pregnancy following IVF.

CLINICAL DATA

This study is a clinical work test performed on 164 infertile patients who referred to the infertility clinic of Imam Khomeini Hospital in 2009–2010.

The patients under study were women who became candidates for embryo transfer (ET) due to different infertility causes including male factors (42.7%), idiopathic factors (18.3%), anovulation (17.1%), tubal cause (14.6%), endometriosis (8.5%). The patients were randomly divided into two 82-person groups, namely control group and acupuncture group. The average age, average BMI, average period of infertility, endometrial thickness were compared and no significant difference was observed between the two groups (all $P>0.05$). The patients whom were put under electroacupuncture for less than 3 cycles or were exposed to the risk of overstimulation or inappropriate ovary response were set aside from the study. The candidate patients for intracytoplasmic sperm injection (ICSI) cycle and transfer of frozen embryo were stepped in the study process after becoming aware of the goals and practical details of project as well as given Informed Consent Form.

METHODS

Hormone medical treatment and IVF/ICSI method

Ovary stimulation regime in the patients put under ICSI was the standard method of long luteal phase. Treatment by gonadotropin-releasing hormone (GnRH) Agonist began in the middle of luteal phase (21st day of luteal phase). GnRH dosage was decreased by the beginning of menstruation and gonadotrophin (Gonal F) was used to stimulate the follicular evolution from the third day of menstruation cycle.

In the fresh embryo transfer cycle, after the controlled stimulation of ovary by gonadotrophins and once the size of follicles reached 18 mm, oocytes transvaginal was extracted from ovary under the supervision of sonography. After performing ICSI, 2–3 embryos each with 6–8 cells were transferred to uterine cavity using valas catheter by the direction of abdominal sonography. The location for settlement of embryos was 1–1.5 cm below the fundus of uterine. After embryo transfer, the patients used luteal phase support with daily injection progesterone.

For the patients who received frozen embryos, suppression standard method was used with superfact before embryo transfer and receipt of estrogen+progesterone after transfer. In those patients, GnRH Agonist (Superfact) began from the 21st day of luteal phase of the previous cycle. GnRH dosage decreased upon the beginning of menstruation and daily oral estradiol 2 mg began. Daily muscular progesterone

was used 4 days before embryo transfer and treatment continued after that with estrogen and progesterone.

Then, BHCG was checked 16 days after embryo transfer. Embryologist and the transferor physician were not aware of acupuncture on the patient.

In the acupuncture group, before embryo transfer the patients were put under electroacupuncture on the areas effective on infertility in lie down position for three times each for 25 minutes. Acupuncture was to be done on oocyte puncture day, 2 days after puncture and one cycle before embryo transfer. The points used in acupuncture included body points and the points on ears. Body points include Bǎihui (百会 GV 20) Yāoyángguān (腰阳关 CV 3), Tàichōng (太冲 LR 3), Nèiguān (内关 PC 6), Sānyīnjiāo (三阴交 SP 6), Guīlái (归来 ST 29), Zúsānlǐ (足三里 ST 36), and Hégǔ (合谷 LI 4).

The points on ears include Nèi shēngzhìqì (内生殖器 TF 2), and Shénmén (神门 TF 4).

Observation Indices

The initial consequence was pregnancy which was defined as the positive result of serum pregnancy test in the 16th day after transfer.

The secondary consequence included clinical and ongoing pregnancy. Sonography was done in the 5th week of pregnancy on those individuals with positive pregnancy test. In case of any inter-uterine gestational sac, it was considered as clinical pregnancy. Ongoing pregnancy included pregnancy after the 12week.

Statistical Analysis

All data was input to computer and was analyzed by using spss software and *chi*-square test. $P<0.05$ was considered as statistically significant.

RESULTS

Comparison of the pregnancy rate, level of gestational sacs and the level of ongoing pregnancy after 12 week between the two groups after treatment are shown in Table 1.

DISCUSSION

Acupuncture mechanism affects on fertility capability based on central stimulation of beta-endorphin secretion, affecting on GnRH pulse, gonadotrophin and steroid secretion, sympathetic control and increase of blood circulation in uterine and ovaries. Increase of blood circulation in uterine

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