

CAHE *Allied Health News in Review*

Does acupuncture affect the success rate of IVF?

Evidence Background

'Acupuncture helps IVF'; reported by Dr N Swan, Health Minutes, ABC News Radio, 5 March 2008

The origin of the evidence (research):

The news report was based on a systematic review conducted by researchers from the: University of Maryland (USA), Georgetown University (USA) and VU University (the Netherlands). Funding for two of the researchers was received from a grant administered by the National Center for Complementary and Alternative Medicine, US National Institutes of Health.

The objectives of the evidence (research):

To evaluate whether acupuncture improves rates of pregnancy and live birth when used as an adjuvant treatment to embryo transfer in women undergoing in vitro fertilisation.

The nature of the evidence (research):

Systematic review and meta-analysis of randomised controlled trials (RCTs) that compared needle acupuncture administered within one day of embryo transfer with either sham acupuncture or no adjuvant treatment. Trials with sham acupuncture and no adjuvant treatment as controls were pooled for the primary analysis.

Participants involved in the research:

Eligible trials involved women undergoing in vitro fertilisation, irrespective of embryo quality, and inclusive of intracytoplasmic injection of sperm.

Interventions utilised:

Eligible interventions involved acupuncture in which needles were inserted into traditional meridian points (inclusive of the additionally insertion of needles into tender points); the needles could also be electrically stimulated. Trials were excluded if they involved dry needling or trigger point therapy or employed laser acupuncture and electro-acupuncture without needle insertion.

Outcome measures:

Clinical pregnancy (defined as presence of at least one gestational sac or foetal heartbeat, confirmed by trans-vaginal ultrasound); ongoing pregnancy (defined as pregnancy beyond 12-weeks of gestation, as confirmed by foetal heart activity on ultrasound); or live birth



Key findings:

Seven RCTs involving $n:1366$ women undergoing in vitro fertilisation were included in the meta-analyses. Of the included trials, three had only been published as abstracts; with inclusion for analysis based on the subsequent provision of unpublished data (heterogeneity was reported as minimal across studies on the basis of I^2 values). The timing of the acupuncture sessions relative to embryo transfer differed among trials, however, in all trials women received acupuncture immediately before (25-minutes) and/or immediately after the embryo transfer (three trials also included one extra acupuncture session, in addition to the sessions before and after the embryo transfer).

All trials used a fixed selection of acupuncture points for all patients for the sessions before and after embryo transfer (fixed selection of points for these sessions was similar in all but one trial). Of note, six trials used ear acupuncture as a supplement to body acupuncture, (in one of these trials acupuncture points were stimulated using a Chinese herb rather than a needle). In all the trials the acupuncture sessions lasted 25-30 minutes.

The adjuvant use of acupuncture during the embryo transfer process was associated with significant and clinically relevant improvements in: Clinical pregnancy (OR: 1.65, 95% CI: 1.27 to 2.14; NNT: 10 (95% CI: 7-17); Ongoing pregnancy (OR: 1.87, 95% CI: 1.40-2.49; NNT: 9 (95% CI: 6-15); and Live births (OR: 1.91, 95% CI: 1.39-2.64; NNT: 9 (95% CI: 6-17)).

Validity of methodology and reliability of the conclusions:

The researchers searched across multiple databases including: Medline, Embase, Cochrane Central, and the Chinese Biomedical Database from inception to January 2007. There was no restriction placed on the basis of language of publication. Methodological quality was evaluated in accordance with a checklist created by the Cochrane menstrual disorders and sub-fertility group. Overall, the authors reported that the trials had high internal validity, in terms of randomisation procedures and follow-up of participants. Four trials did not blind women to treatment assignment, and three trials did not blind the physicians. Whilst the results were demonstrated to be robust to sensitivity analyses on the basis study validity variables, subgroup analysis restricted to the three trials with the higher rates of clinical pregnancy in the control group, derived a smaller non-significant benefit of acupuncture (OR: 1.24, 95% CI: 0.86-1.77).

Clinical implications:

In absolute terms, this study suggests that $n:10$ women undergoing IVF would need to be treated with acupuncture to bring about one additional clinical pregnancy. However, the authors of the review stressed that on the basis of the subgroup analysis (which was restricted to three trials with higher baseline IVF pregnancy rates) that there may be a smaller non-significant benefit of acupuncture i.e. the relative added value of additional co-interventions, such as acupuncture, may be reduced.

References:

Manheimer E, Zhang G, Udoff L et al (2008): Effects of acupuncture on rates of pregnancy and live birth among women undergoing in vitro fertilisation: systematic review and meta-analysis. *British Medical Journal* 336: 545-549.

Dr N Swan's 'Health Minutes' reports can be accessed at: <http://www.abc.net.au/health/minutes>

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