

Female Fertility Articles

Acupuncture and In Vitro Fertilization: Does the Number of Treatments Impact Reproductive Outcomes?

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Objective: The purpose of this study was to determine the optimal number of acupuncture treatments that provide the patient with the best IVF outcomes, i.e., pregnancy.

Materials and Methods: Retrospective clinical study in private practice Acupuncture and IVF center. Data were compiled in a group of infertile patients (n = 216) who received acupuncture during their IVF treatment cycle between 2001 and 2005. Data were analyzed to determine the optimal number of Electrical Stimulation (e-Stim) acupuncture treatments (Stener-Victorin protocol) that would result in a clinical pregnancy. Two hundred sixteen patients over a 4 year period were included in this study. Based on our previous studies, we determined a significant improvement in IVF outcomes when patients were treated with Acupuncture (Ac). We utilized two protocols: Stener-Victorin et al 1996 (reported on uterine blood flow) and Paulus et al. 2002 protocol (reported on acupuncture given just before and just after embryo transfer). Patients received a combination of both protocols. This population was stratified into pregnant and non pregnant groups and then evaluated by Student T-test and Chi-Square analysis for age, FSH levels, weight, BMI and E-2 levels. The pregnant and non-pregnant groups were further subdivided into those that received or did not receive acupuncture and were analyzed by Chi-square analysis. Since all patients received acupuncture consisting of e-Stim, their distribution was analyzed utilizing Kaplan- Meier survival analysis for pregnancy and no pregnancy to determine the number of e-stimulation that would provide the greatest chance for pregnancy.

Results: Patients age, day 3 FSH levels, weight, BMI (body mass index) and E2 (estrogen level at embryo transfer) were not statistically significantly different between the Non Acupuncture (No Ac) and the

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Acupuncture (Ac) groups. There was a statistically significant improvement ($p < 0.01$) in pregnancy rates in the group that received Ac (49 patients of 106 (37.4%) in the No Ac became pregnant vs. 77 patients of 111 (61.1%) of the Ac group became pregnant). This is over 23% increase in pregnancy rates in the Ac group. When the data were compared between e-Stim treatments in the Ac only group, an average of 6.5 treatments were found in the non-pregnant Ac group and 5.9 treatments in pregnant Ac group (not statistically significantly different). When the data were plotted comparing pregnant vs. non pregnant Ac patients, there was a trend towards numerically more e-Stim treatments in those who achieved a pregnancy. In order to confirm or refute differences in these two groups, Kaplan Meier's survival analyses were done. Based on these analyses, the average accumulated affect in the non pregnant Ac group was 5.1 e-Stim treatments and 8.4 e-Stim treatments in the pregnant Ac group. This was statistically significantly different at the $p < 0.05$.

Conclusion: In traditional Chinese medicine the basic theory is that only when the body is balanced will it function at its optimal level. Acupuncture helps restore balance which results in a higher chance of achieving pregnancy. In our study, we found that patients who received more than 8 e-Stim treatments appeared to have the maximum benefit for IVF outcomes: pregnancy ($p < 0.05$). In our study, we also reviewed the independent effects of the Paulus protocol, however due to small numbers; we could not perform the analyses. In the IVF center included in this study, patients receive Valium (diazepam) to reduce smooth muscle contractility. This treatment may provide all that is needed to reduce uterine contractility and therefore the additional impact of Ac at the pre and post transfer (Paulus protocol) may well be masked by the medication. More study of these and other treatments must be done. We are currently investigating the role of Ac in stress hormone circulating levels.

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