Introduction

Endometrial thickness has been shown to be an important prognostic factor of successful embryo implantation. If the endometrial thickness is less than 9 mm there is a significant reduction in the success rate. Though there is conflicting data, preliminary evidence suggests that the administration of vaginal sildenafil can markedly improve endometrial thickness and result in increased live IVF births. Our clinical observations are consistent with this. However, other clinics report negative results. Therefore, we hypothesized that the difference in response between clinics may involve other factors. When we looked into this, we found that many of our patients were simultaneously receiving acupuncture treatments.

Studies on acupuncture have demonstrated positive effects on implantation rates, ongoing pregnancy rates and the number of live births. Acupuncture has also been shown, via measurements of pulsatility index, to significantly decrease blood flow to the uterus. Decreases in pulsatility index have been shown to significantly improve pregnancy rates. Researchers have also found that acupuncture has direct effects on the endometrium. Some of these include increases in progesterone receptor concentration, a reduction in COX-2, and an increase in the activity of prostacyclin synthase. Therefore, the purpose of our investigation was to evaluate the effects of combining acupuncture and sildenafil anto on endometrial lining.

Materials and methods

Subjects were initially five females, ages 35–49, with prior IVF or IUI failures. However, one subject was later disqualified due to the discovery of an undiagnosed prior lining of 9 mm. All subjects had a Day 3 FSH < 9 mIU/ml and normal uterine cavity by hysteroscopy or saline infusion. Patients were excluded if they had a history of infertility medication use, history of endometrial carcinoma or hyperestrogenism. Patients were enrolled if there was an obvious diagnosis or indication for either acupuncture or sildenafil treatment.

Following IRB approval, consent, randomization, PFI and controlled levels were obtained for each patient and other a fluid ultrasound or HSG was performed that was notable prior to initiation of treatment. Protocols were designated for each patient using the fertility clinic’s standard techniques for evaluating the necessary dosage of gonadotropins. Patients received a Lutropin long protocol using 300 to 450 units of gonadotropins depending on age and prior FSH history and day 3 FSH value.

Each patient was given 25 mg Sildenafil suppositories on CD9 and a series of five acupuncture treatments provided by two acupuncturists who are certified by the National Certification Commission for Acupuncturists and Oriental Medicine of the State of California. Thirty-four gauge 1.5 inch and 18 gauge 1 inch needles (Millaen, China) were used depending on the location of the acupoint. The 34 gauge needles were used on points located on the trunk of the body and the 18 gauge needles used on the extremities. A far infrared lamp (TDP, China) was utilized for 20 minutes on the lower abdomen, approximately 12–18 inches from the skin’s surface. The base protocol included the following acupoints:

<table>
<thead>
<tr>
<th>Conception Vessel 4</th>
<th>Spleen 6</th>
<th>Spine 10</th>
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</thead>
<tbody>
<tr>
<td>Large Intestin 10</td>
<td>Stomach 56</td>
<td></td>
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<tr>
<td>Kidney 3</td>
<td></td>
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</tbody>
</table>

Microcurrent stimulation (Electrostimulator 8c.Pro, Pantheon Research, CA) was utilized on standard low in biopsy mode using 10 Hz from (L) Kidney 3 to Conception Vessel 4 and from (R) Kidney 3 to Conception Vessel 6. Noodles were then applied to Conception Vessel 4 and Conception Vessel 6 to the form of Japanese kyodokyo.

In accordance with Japanese meridians therapy, acupuncture modifications were then made if any of the following areas were uncomfortable to the patient upon 2 kg palpation.

Location of palpation response

- Protocol Addition
  - (L) Conception Vessel 27-28
  - (R) Stomach 27-28
  - (L) Spleen 9
  - (R) Kidney 2

Treatments were administered according to the following schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th># of Tx</th>
<th>Treatment Timing</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2 day space between tx</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>2 day space between tx</td>
</tr>
</tbody>
</table>

Uterine lining was measured during patients’ routine monitoring via fluid ultrasounds which were provided starting from cycle day 3 and repeated throughout stimulation phase.

Results

All four subjects achieved endometrial lining thickness of greater than or equal to 10 mm following the administration of the combination of acupuncture and sildenafil: including one patient whose lining did not exceed 5 mm in a previous cycle. Neither patient who had responded to Sildenafil alone in a prior IVF cycle, responded to the combination of Sildenafil and acupuncture. We also noted that endometrial thickness in most patients continued to increase post-pCG administration.

Conclusions

This pilot study is consistent with previous reports that acupuncture improves uterine lining measurements over previous cycles.

The preliminary data supports the potential for a synergistic action between acupuncture and sildenafil. We hypothesize these effects may be due to acupuncture’s ability to supplemenat air oxide synthesis. However, we cannot rule out other mechanisms of action since acupuncture has also been shown to affect many other parameters.

The results of this preliminary data may also suggest a role for a similar combination in treating erectile dysfunction. Further testing and data is necessary to verify these results.

Literature cited


For further information

Please visit www.herbalroom.com for more information on this and other acupuncture treatments that utilize reproductive medicine. This study can also be found at www.fertility.com. For an online, PDF-version of this poster presentation, this can be obtained at www.fertility.com/18900.pdf.