

## Acupuncture treatment during the luteal phase: Summary sheet for practitioners.

### Background

For women wanting to conceive the luteal phase can be a time of stress and “watchful waiting.” While quality Chinese medicine sources exist for acupuncture use in fertility treatment, information about the use of acupuncture during the luteal phase is limited and conflicting. This may be creating uncertainty and limiting practice. This summary sheet presents baseline biomedical information for luteal phase of a menstrual cycle. This information combined with current acupuncture research can be used as a rationale for treatment decisions. Additionally it is hoped that this information enhances communication between Chinese medicine and western medicine practitioners, creating more awareness about the potential for the use of acupuncture at this time.

### Key information: western medical physiology.

- On reaching the uterus the developing embryo receives nutrition from uterine fluids and the release of nutrients as it invades the endometrium. A low oxygen environment is beneficial at this time to protect against oxidative damage.<sup>1</sup> This ‘physiological hypoxia’ exists from the time of cell division in the fallopian tubes and lasts into early pregnancy. While treatment to improve blood flow to the endometrium is thought to be beneficial to prepare the endometrium pre implantation,<sup>2</sup> there is no rationale that treatment to improve blood flow to the endometrium during implantation will have similar benefits. As physiological hypoxia is purposefully created to block maternal blood reaching the embryo and premature contact with maternal blood has been indicated in early pregnancy loss,<sup>3</sup> it may be prudent for acupuncturists to avoid points that encourage improving blood flow to the uterus.
- Cytokines and chemokines (cell signaling molecules) play an important part in successful implantation.<sup>4</sup> Initially they guide the embryo to a suitable site. They then assist the breakdown of endometrial tissue to allow the embryo to invade. This ‘controlled aggression’ is a complex process involving cytokines, uterine natural killer cells, macrophages and T cells interacting together in a delicate inflammatory and anti-inflammatory balance. While this is not totally understood, it is known that poor quality sleep effects cytokines and adversely affects inflammatory processes.<sup>5</sup> It is also known that progesterone production is beneficial to regulating an efficient controlled aggression and that stress has the potential to adversely affect hormonal balance through hypothalamic-pituitary-adrenal and sympathetic-adrenal-medulla axis.<sup>6</sup> Therefore it may be possible that treating stress responses and promoting quality sleep is beneficial to assist implantation. It interesting to note that in historical literature it was stated that for women wanting to conceive “Her sleeping place must be peaceful and quiet and she must not be exposed to fear and alarm.”<sup>7</sup>
- Dietary advice. It is currently thought that a Mediterranean high in anti-inflammatory foods may be beneficial for women 6 weeks prior to and during the window of implantation.<sup>8</sup>

### Key information: Fertility research.

- Qualitative research (table 1) found that women reported acupuncture as assisting their relaxation and helped facilitated positive changes as they coped with fertility related stress.<sup>9</sup><sup>10</sup> These studies both used some form of individualised TCM diagnosis rather than point prescription treatment.

**Table 1. The Evidence Base for Acupuncture use in the Luteal Phase**

Citation	Treatment approach	Findings
<b>Qualitative Research</b>		
Smith CA et al 2011	10 women receiving acupuncture undergoing ART interviewed	"The majority of women described a physical and psychological sense of relaxation and calmness, and a changed perspective in relation to coping"
de Lacey S et al 2009	10 women receiving acupuncture for fertility related issues	Acupuncture facilitated improvement with coping, and self enhancement
<b>Quantitative Research</b>		
Hullender L R. 2015	Retrospective analysis over 5 years 580 IVF women in fertility clinic 370 IVF women in fertility clinic + acupuncture pre and post ET ( 2 fertility protocol treatments) 119 IVF women receiving Whole Systems (individualised) acupuncture in private clinic (mean 12 visits)	Live births were statically significant for whole systems acupuncture (61%) But not statically significant between the IVF women in fertility clinic (48%) and IVF women in fertility clinic + acupuncture pre and post ET (50%)
Westergaard L et al 2006	RCT 273 women undergoing IVF cycle Acup 1 and Acup 2 received Pre ET DU20, ST29, SP8, PC6, LR3. Post ET ST36, SP6, SP10, LI 4.  Acu 2 received additional acup 2 days later DU20, Ren 3, ST29, SP10, SP6, ST36, LI 4.  Control group – no acup	Increased number of Live births in Acup 1 statically significant compared to control (Acup 36% v's 22% control). No statistical significant for Acup 2 (26%)  A greater number of women had early pregnancy loss in Acup 2 (n=12,33%) but this not statically significant (Acup 1 n=5, 15%, n=6, 21% control).
Dieterle S et al 2006	RCT 225 women undergoing IVF cycle Acup 1 (fertility protocol) Post ER REN 4, REN6 ST29, PC6, SP 10, SP8 +ear pts + 3 days LI 4, SP6, ST 36, KI3, LR3 +ear pts  Acup 2 (thought to have no fertility effect ) Post ER + 3 days SJ9, SJ12, GB31, GB32, GB34 +ear pts	Clinical pregnancy rates statically significant ( 34% Acup v's 16% control )  However the rate for the placebo group was lower than the 25% expected for a control receiving IVF. This raised concerns that the treatment rather than having no effect actually had an adverse effect.

#### Quantitative research (table 1)

- A study examining individualised acupuncture treatment given in private clinic demonstrated that this was more useful than no acupuncture or acupuncture only given pre and post implantation.<sup>11</sup> Although this study has limitations as women self-selected to have treatment and it involved examining women's records retrospectively, it was a statistically significant finding.
- Only two RCT's have used acupuncture in the luteal phase. One demonstrated that while acupuncture was beneficial pre and post embryo transfer (ET) there was no beneficial effect for women receiving the points LI-4, SP-6, ST-36, SP-10, ST-29, REN-3, DU-20 during the luteal phase.<sup>12</sup> The other study was interesting as it used points thought to be irrelevant to fertility treatment as a control (SJ-9, SJ-12, GB-31, GB-32, GB-34 plus Ear points).<sup>13</sup> Their findings suggested that these points negatively affected pregnancy rates as these women did not achieve the pregnancy results expected for a control group. It is unknown why this occurred. It may be worth considering that points stimulating the Shaoyang channel are not beneficial at this time. Another possibility may be that, as when treating pathogenic attacks at the Wei level, inappropriate treatment may be over stimulating and detrimental.
- It is interesting that women in these RCT's did achieve successful pregnancies after receiving traditionally "forbidden" points (LI-4, SP- 6, SP- 10 and local abdominal points). However, an important consideration must be that the highest pregnancy rate was achieved by women receiving these points only at the time of embryo transfer. These women also experienced

the lowest rate of early pregnancy loss. In comparison, those women receiving these 'forbidden' acupuncture points during the luteal phase had the highest incidence of pregnancy loss. This may have been due to chance, however it may be prudent and considered *best practice* to exercise caution by refraining use of these points during the luteal phase until more is known about their safety and effectiveness.

### Summary points for acupuncture use during the luteal phase

- Using individualised acupuncture treatment was beneficial; there is preliminary research it may increase live birth rates and qualitative research suggesting women find it useful when coping with stress related fertility issues. Western medicine is currently proposing stress responses may negatively impact on implantation. This provides a plausible rationale to promote acupuncture treatment as beneficial to assist women moderate their stress responses at this time.
- While research protocols aiming to increase blood flow to uterus where useful immediately post ET, they were not beneficial in the luteal phase (LI-4, SP-6, SP-10, ST-29, REN-3). Due to increased pregnancy loss when using these points and no known biomedical rationale why increasing blood flow at this time would be useful, it may be prudent to avoid these points. Additional points that have demonstrated to improve blood flow to the uterus are those of REN-4, REN-6, Zigong and ST-28.
- When points on the Shaoyang channel were used as a control (because they were thought to have no effect), the result was a lower than expected pregnancy rate. This may suggest it would be prudent to refrain from using these particular points or may indicate that we cannot assume the use of multiple 'extra' points is beneficial.

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