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Recurrent Pregnancy Loss and Traditional Chinese Medicine

Lee Hullender Rubin, DAOM, Dara Cantor, BS, and Benjamin L. Marx, MAcOM

ABSTRACT

Background: Recurrent pregnancy loss (RPL) can present with coexistent subfertility caused by diminished ovarian reserve (DOR). Recent texts suggest that Traditional Chinese Medicine (TCM) may improve pregnancy outcomes for women with RPL.
Objective: This article reports the outcome of the treatment of a female of advanced maternal age. She had diagnoses of DOR and RPL.
Design, Setting, and Patient: This 42-year-old patient with DOR and RPL presented in a private acupuncture practice, located in Bellevue, WA.
Intervention: The patient received TCM treatment that involved weekly acupuncture and Chinese herbal therapy from June 2006 to May 2007.
Main Outcome Measures: The outcome sought was a live birth after 24 weeks of gestation.
Results: After another miscarriage in September 2006, this patient conceived a viable pregnancy in December 2006, after 6 months of treatment. She continued treatment through 20 weeks and delivered a healthy son at 39.5 weeks of gestation.
Conclusions: Subfertile women with RPL may benefit from TCM treatment. More research is needed to examine the safety and effectiveness of TCM as a treatment for RPL.

Key Words: Spontaneous Abortion, Acupuncture, Traditional Chinese Medicine, Infertility

INTRODUCTION

Recurrent pregnancy loss (RPL) is estimated to occur in 1%–3% of all pregnancies.[1] Other estimates indicate that anywhere from 12% to nearly one-third or one-half of all miscarriages occur without a patient's knowledge, appearing like late menstruation.[2,3] Evidence supports an increased risk of miscarriage as females age, with women ages 18–20 having a 12% chance of miscarriage. As women age, it incrementally increases to a 25% chance in women ages 40–42 and 50% or more in women ages 43–46.[2,4,5]

While a great deal of research supports the relationship between maternal age and miscarriage, some research is now suggesting that paternal age may also play a role.[6,7] Women with male partners over age 35 have more than twice the risk of miscarriage, compared with women who have younger partners.[8]

By definition, miscarriage is a pregnancy that is involuntarily terminated before 20 weeks of gestation or if the fetal weight is below 500g.[2,4] A loss of pregnancy after 20 weeks is considered a premature birth or stillbirth. The cause is generally different than a loss prior to 20 weeks.[2,4] After three previous losses, the chance of miscarriage is 30%–45% and varies with the number of previous live births: If there were no previous live births, then the chance is 40%–45%; if there was one or more live births, then the risk of pregnancy loss is $\sim$30%.[2,4]

While age is a considerable factor, there are several reasons for a spontaneous loss, including fetal genetic abnormalities, anatomical factors, immunological factors,

Oregon College of Oriental Medicine, Research Department, Portland OR.

endocrine imbalances, bacterial infections, environmental toxicities, and lifestyle factors.[2,4,5]

In Traditional Chinese Medicine (TCM), the Kidney Essence (*Jing*), Yin, Yang, and Qi provide direction, energy, and substance to the reproductive system.[5,9,10] The quality and balance of these energies determine egg health in the female and sperm health in the male. TCM theory states that a decline in the vital energies is a significant contributing factor to miscarriage but is not the primary reason. Multiple miscarriages are also known as *hua tai,* or slippery fetus, and can also be caused by pathological factors.[11]

Essence, Yin, Yang, and Qi naturally decline with age, but can be accelerated as a result of poor self-care, overworking, poor diet, drug/alcohol abuse, unresolved emotions, and/or excessive stress.

There is currently insufficient evidence to support the use of TCM as a treatment for RPL, but recent research suggests that acupuncture could play a role in preventing miscarriages in women undergoing *in-vitro* fertilization (IVF). In one abstract, it was noted that acupuncture performed on patients ($N = 114$) prior to IVF resulted in fewer miscarriages.[12] In another similarly designed study by the same researchers, an acupuncture group had significantly fewer miscarriages than a no-treatment group.[13] Clearly, more research is needed. The aim of this article is to report the reproductive outcome of a 42-year-old female who was diagnosed with RPL and diminished ovarian reserve (DOR), and treated with TCM.

CASE HISTORY

A 42-year-old female presented with RPL in June 2006. At her initial visit, she reported that she had had six pregnancies, two live births (1995 and 1998), and four miscarriages of fetuses that were between 6 and 8 weeks' gestation. The first miscarriage was in 1994 during a previous relationship. The next three miscarriages occurred in November 2005, January 2006, and February 2006, respectively. Her reproductive endocrinologist found that her follicle stimulating hormone (FSH) was elevated on day 10 (16 mIU/mL, normal range is below 10) via a clomid challenge test. She also reported that her progesterone level was low in the luteal phase, but no laboratory values were provided.

She started receiving a protocol for six consecutive cycles from November 2006 to June 2007. The protocol required she take 50 mg of clomiphene citrate on cycle days (CD) 3–7, confirm ovulation via an ovulation-predictor kit (OPK), and try timed intercourse. For her luteal phase, she was prescribed 200 mg of progesterone via vaginal suppositories 2 times per day and heparin shots two times per day daily. Clomiphene citrate is a selective estrogen receptor modulator that induces ovulation and may improve progesterone levels in the luteal phase.[4] Progesterone administered exogenously supports early pregnancy until the placenta takes over at approximately 10 weeks of gestation. Heparin, a blood thinner, is administered in women with RPL to help prevent immunologically induced blood clots or inflammatory markers that can inhibit a viable pregnancy.[4] Her reproductive endocrinologist was not hopeful and suggested that she consider IVF with a donor egg, which she and her partner declined.

The patient was a former athlete, who was lean and very fit with a normal body mass index. She exercised frequently by running, weight lifting, playing tennis, and bike riding. Her menarche was at age 13. Her menses were regular, occurring every 30 days. She reported a typical period as having a light-to-medium flow for 5 days, and she denied having clotting and cramps. The color of the flow was generally a ''fresh'' red, except that, on the last day, her flow turned to a pale brown-red. She confirmed mild bloating and irritability 2–3 days prior to onset of her menses. She believed that she ovulated between CDs 15 and 17 and confirmed this with an OPK. She reported minimal cervical fluid and an elevated libido. She denied having vaginal dryness or a need for lubricants.

In addition, she reported having frequent urination, nocturia, mental restlessness, irritability, cold hands and feet, thirst, postprandial gas and bloating, occasional loose stools, and elevated stress perception. She reported good energy and sleep. She denied night sweats, palpitations, digestive weakness, or pain. Her bowel movements tended to be daily and were easy for her to pass. Her partner's sperm analysis was better than normal in every parameter. She declined taking her basal body temperature as this induced stress.

Her pulses were thin and wiry overall, but were deeper and slightly weaker on her right. The *chi* positions were also slightly less forceful bilaterally than the other positions. Her tongue was pink, normally shaped, and slightly dry. Her sublingual veins were dark blue and mildly engorged.

DIAGNOSIS

With trepidation, this patient began acupuncture at the behest of her yoga instructor. Because the patient was a former competitive athlete, she was unwilling to give up on solving her RPL problem without exhausting every option.

Motivation and vision despite facing struggles or obstacles are a benefit from the Wood Element. Her pulses were frequently wiry, with the exception of choppiness when she was miscarrying. The depressive aspect of an unfulfilled desire Stagnated her Liver Qi. Her perpetual movements forward in life, exercing, and attaining her goals had likely taxed her Kidney, making it insufficiently strong enough to govern reproduction and pregnancy.

Her diagnosis was mixed with Deficiency and Excess. She was Kidney Yin and Yang Deficient, with Liver Qi

Stagnation agitating the *Shen*. The Kidney had signs of both Yin and Yang weakness. Urinary frequency, nocturia, cold hands, and feet show that the Yang is unable to warm the extremities and regulate urination. Restlessness, insufficient fertile cervical fluid, elevated libido, and thirst reveal the limited Yin available to moisturize and ground her. Irritability, premenstrual bloating, and elevated perception of stress combined with a wiry pulse show Liver Qi Stagnation. The Liver's inability to circulate Qi freely can also make it difficult to warm the extremities. Yin is needed to have high-quality eggs, estrogen, and a full lining of the Uterus in the follicular phase. Yin must transition easily, with assistance from the movement of Liver Qi to Yang in the luteal phase to warm the Uterus, allow embryo implantation, hold a potential pregnancy, and produce a good amount of progesterone.

Multiple pregnancies can deplete Kidney Yin and Yang. Multiple serial ovulation-induction cycles with clomid further assault the Kidney, making it difficult to recover.[5,9] What is also noteworthy is the emotional upset caused by multiple miscarriages, which can Stagnate the Liver Qi and agitate the *Shen*. It is not surprising that this patient frequently exercised to aid movement of her Liver Qi. The inability to calm the *Shen* and mental restlessness may have compromised the Heart Qi, leading to the RPL caused by inappropriate opening of the Uterus and subsequent miscarriage.[5]

The treatment principle is to nourish Yin, warm and supplement Yang, course the Liver and calm the *Shen*. Treatment is adjusted to nourishing Yin in the follicular phase, coursing Qi to facilitate transition from Yin to Yang at ovulation, and warming and supplementing Yang by tonifying Yin in the luteal phase.

At the patient's initial visit, weekly acupuncture, with the addition of Chinese herbs, was recommended, as well as foot baths,[9] yoga, and increased protein in her diet.

The patient provided written informed consent for this protocol.

TREATMENT: ACUPUNCTURE

Acupuncture was performed with Seirin brand (Japan, 0.16 × 15 mm, J-type ear) needles for auricular points and Vinco brand (China, 0.22 × 30–40-mm needles) for body points, except *Yintang*, which was needled with a 0.16 × 15 mm, J-type Seirin brand ear needle. The needle length selected was dependent upon point location. The point selections followed the phases of the menstrual cycle and the functions were sourced from *A Manual of Acupuncture*[14] unless otherwise noted. The needling technique used is based on the following key:

- Even stimulation is represented by =.
- Reinforcing is represented by +.
- Reducing is represented by −.

In addition, R represents right and L represents left. The protocol is outlined in the sections below.

Menses Phase (CDs 1–4)

In the menses phase, regulate menses, prepare for next cycle, and calm *Shen,* using:

- *Neiguan* PC 6 −, *Gongson* SP 4 −: Open the *Chong*, needled from the R.
- *Taichong* LR 3 −: Circulate Qi and calm *Shen.*
- *Sanyinjiao* SP 6 +: Support Middle *Jiao*, harmonize Liver, regulate menses, and calm *Shen.*
- *Dazhong* KI 4=: Boost spirit, regulate menses, and strengthen back.
- *Mingmen* CV 4 +: Nourish Yin and Blood, regulate Uterus, and nourish and stabilize Kidney.
- *Yintang*=: Calm *Shen*.
- Ear: Uterus, Endocrine, *Shenmen,* and Heart.

Follicular Phase (CDs 5–11)

In the follicular phase, nourish Yin and Blood, circulate Qi, and calm *Shen,* using:

- *Lieque* LU 7 +, *Zhaohai* KI 6 +: support Yin and Conception Vessel.
- *Mingmen* CV 4 +: Nourish Yin and Blood, regulate Uterus, and nourish and stabilize Kidney.
- *Tituoxue* +: Circulate Qi and Blood in Uterus and Ovary.
- *Zigong* +: Support ovarian function.
- *Taixi* KI 3 +: Tonify Kidney Qi, Yin, Yang, and benefit Essence.
- *Taichong* LR 3 −: Circulate Qi and calm *Shen*.
- *Yintang*=: Calm *Shen*.
- Ear: Uterus, Endocrine, and *Shenmen*.[15]

Ovulation (CDs 12–19)

During ovulation, support transition from Yin phase to Yang phase by nourishing Yin and tonifying Yang, regulating Qi, and promoting ovulation, using:

- *Qihai* CV 6 +: Tonify Qi, Yang, and *Zheng* Qi, strengthen Kidney, and regulate Qi.[16]
- *Qixue* KI 13=: Relax the cervix and circulate Qi around the ovaries.
- *Neiguan* PC 6 −: Calm *Shen*, regulate Blood, and regulate cervix.[9]
- *Taichong* LR 3 −: Circulate Qi.
- *Taixi* KI 3 +: Regulate uterus, and tonify Qi, Yin, and Yang.
- *Diji* SP 8 −: Regulate Qi in Lower *Jiao*.
- *Baihui* GV 20=: Tonify and raise Qi.
- Ear: Uterus, Endocrine, *Shenmen*.[15]

Luteal Phase (CDs 20–Onset of Menses)

In the luteal phase, tonify Yang, raise Qi, support Yin, and regulate Qi; support Chong and Ren vessels so they do not open prematurely; and calm *Shen,* using:

- *Baihui* GV 20=: Raise Qi
- *Sishenchong*=: Calm *Shen* when combined with *Baihui* DU 20.[17]

- *Neiguan* PC 6=L, *Gongson* SP 4=R: Support Blood and *Chong*.
- *Lieque* LU 7=R, *Zhaohai* KI 6=L: Support Yin and *Ren*.
- *Zusanli* ST 36=: Tonify Qi.
- *Qiuxu* GB 40=: Circulate Qi.
- *Fuliu* KI 7 +: Tonify Kidney Yang.

TREATMENT: CHINESE HERBAL THERAPY

All formulas are KPC granules (from Taiwan) in premixed formulas with single-herb additions. All herb functions were sourced from *Formulas & Strategies,*[18] unless otherwise noted below. Daily dosage is 4 g dissolved in warm water, 2 times per day.

Menses Phase (CDs 1–4)

No herbal treatment was administered.

Follicular Phase (CDs 5–11)

A modified *Yi Guan Jian* (Linking Decoction) and *Si Wu Tang* (Four Substance Decoction) was administered. The 35-g *Yi Guan Jian* contained:

- *Sheng Di Huang*, *Rhemannia radix* (fresh), 30.8%
- *Gou Qi Zi, Lycii fructus,* 15.4%
- *Sha Shen* (*Bei*), *Glehnia radix,* 15.4%
- *Mai Men Dong, Ophiopogonis radix,* 15.4%
- *Dang Gui* (*Shen*) *Angelica sinensis radix,* 15.4%
- *Chuan Lian Zi, Toosendan Fructus,* 7.6%.

The 10 g of *Si Wu Tang* contained: *Shu Di Huang*, *Rehmannia radix* (cooked), 25%; *Dang Gui* (*Shen*), *Angelica sinensis radix,* 25%; *Bai Shao*, *Paeoniae radix alba,* 25%; and *Chuan Xiong*, *Chuanxiong rhizoma,* 25%.

There was also a single-herb addition of 6 g of *Sha Ren* (*Amomi fructus*).

Yi Guan Jian was chosen for its ability to nourish Yin and circulate Qi. The addition of *Si Wu Tang* provided extra Blood supplementation and movement. Blood and Yin are supplemented with the combination of these two formulas, with the addition of *Sha Ren* to aid digestion of the rich tonics.

Ovulation Phase (CDs 12–19)

A modified *Yi Guan Jian* was administered, 29-g, *Yi Guan Jian*, with the single-herb additions:

6 g of Gou Qi Zi
4 g of *Tu Si Zi* (*Cuscutae semen)*
6 g of *Xiang Fu* (*Cyperi rhizoma)*
4 g of *Wu Yao* (*Rhizome radix*)
4 g of *Wang Bu Liu Xin* (*Vaccariae semen).*
4 g of *Sha Ren.*

Yi Guan Jian was chosen as the base formula for its ability to circulate Qi while nourishing Yin. *Gou Qi Zi* and Tu Si Zi were added to supplement the Kidney Yang, Essence, and Yin. The next three herbs are used to circulate Qi in the Lower *Jiao* to support ovulation. *Xiang Fu* circulates Qi in the Lower *Jiao*. Wu Yao is warm, circulates Qi, and opens the collaterals. Wang Bu Liu Xin moves Blood and also opens the collaterals. Sha Ren (Amomi aids digestion and harmonizes the middle *Jiao*.

Luteal Phase (CD 20–Onset of Menses)

In the luteal phase modified *Zuo Gui Wan* (Restore the Left Pill) was administered The 27-g *Zuo Gui Wan* contained:

- *Shu Di Huang*, cooked, 23%
- *Shan Zhu Yu*, *Corni fructus,* 11.4%
- *Tu Si Zi*, *Cuscutae semen,* 11.4%
- *Lu Jiao*, *Cervi gelatinatum cornu,* 11.4%
- *Shan Yao*, *Dioscoreae rhizoma,* 11.4%
- *Gou Qi Zi*, *Fructus lycium,* 11.4%
- *Gui Ban Jiao*, *Testudinous gelatinatum,* 11.4%
- *Niu Xi* (S) *Achyranthis bidentat radix,* 8.6%

Single-herb additions included:

- 10 g of *Tu Si Zi*
- 10 g of *Xu Duan* (*Dispaci radix)*
- 5 g of *Xiang Fu*
- 5 g of *Sha Ren*.

In the luteal phase, Yang is at its fullest, supported by Yin, Blood, and Qi. *Zuo Gui Wan* nourishes the Yin to support the Yang.[5] Additional Yang tonics *Tu Si Zi* and *Xu Duan* were added to support the Yang during its peak. *Xiang Fu* ensured that the Qi did not Stagnate and *Sha Ren* aided digestion of this formula.

FIRST PREGNANCY AFTER TCM

After 3 months of TCM treatment, the patient resumed timed intercourse, and became pregnant immediately. She noted significant breast tenderness, a queasy sensation, low energy, a ''cloudy'' head, night sweats, and increased urination. Her pulses, overall, were slightly rapid and deep, and thin and slightly wiry on the left. Her right pulse was slippery, especially in the *chi* position. Her blood test revealed a ß–human chorionic gonadotropin level of 175 and a progesterone level of 30. Her formula was changed immediately to nourish the Kidney and prevent miscarriage. Modified *Shou Tai Wan* (Secure the Fetus Pill) was prescribed. It contained:

- 10 g of *Tu Si Zi*
- 10 g of *Xu Duan*
- 10 g of *Sang Ji Sheng* (*Taxilli herba*)
- 10 g of E *Jiao* (*Asini corii colla*)
- 10 g of *Huang Qi*n (*Scutellariae radix*)
- 6 g of *Zhu Ru* (*Bambusae caulis intaeniam*)
- 4 g of *Sheng Jiang (Zingiberis rhizoma recens).*

Shou Tai Wan tonifies and stabilizes the Kidney to prevent miscarriage and calms the fetus. The herbs collectively

tonify Yang, Yin, and Blood. The additions were included to address the Middle *Jiao* and prevent nausea.

She, unfortunately, miscarried a fifth time at 4.5 weeks' gestation in September. At this time, she stopped *Shou Tai Wan* and was advised to wait a minimum of 2 months before trying to conceive again; this was advised to supplement the Kidney, resolve any post-miscarriage Blood Stasis, regulate the Liver, and support the *Shen*. Her pulses were choppy and deep.

She was prescribed the following formula to take for 2 weeks:

- 15 g of *Dang Gui*
- 18 g of *Bai Shao*
- 10 g of *Chuang Xiong*
- 12 g of *Tao Ren* (*Persicae semen)*
- 9 g of *Pu Huang* (*Typhae pollen)*
- 12 g of *Yan Hu Suo* (*Corydalis rhizoma*)
- 10 g of *Dan Shen*
- 12 g of *He Huan Pi* (*Albizziae julibrissin cortex*)
- 6 g of *Zhi Gan Cao* (*Glycyrrhizae radix, preparata*).

The first four herbs move Blood and resolve Blood Stasis. *Dang Gui* also nourishes Blood, while *Chuang Xiong* also moves Qi. *Zhi Gan Cao* harmonizes the formula.

She also received acupuncture at the following points:

- *Hegu* LI 4 −, *Taichong* LR 3 −: The Four Gates regulates Qi
- *Shuiquan* KI-5 +: Regulates *Ren* and *Chong* vessels
- *Guanyuan* CV 4 +: Regulates Uterus and nourishes Kidney Yin/*Jing*, which strongly affects the cervix
- *Tianshu* ST 25 −: Moves Stagnation in the Large Intestine and in the whole Lower *Jiao*
- *Diji* SP 8 −: Regulates Uterus, stops pain
- *Xuehai* SP 10 −: Cools and moves Blood.

Her menses came the next day; the flow was dark and clotty but relatively painless. She menstruated for 4 days, and her blood became slightly more ''fresh'' red before the menses stopped. She returned to the office on CD 7, and her pulses were deep, thin, and wiry—especially deep in the *chi* positions. Considering the emotional anguish, frustration, and sadness that often accompany miscarriage, it was imperative that the influence of the Heart *Shen* and the Kidney *Zhi* over the Uterus (via the *Bao Mai* and the *Bao Luo*, respectively) be restored post-miscarriage.[19]

She received an aggressive energy (AE) treatment. *Xie Qi* or evil Qi accumulates in the organs making them dysfunctional. The AE drains the *Xie Qi*, supporting the proper function of each of the *Zang* organs.[20,21]

The points entail needling the *Zang*/Yin organ *Shu* points on the Bladder channel: Lung, Pericardium, Liver, Spleen, and Kidney.[20,21] Needles are inserted superficially to drain AE from each of the five officials. Three additional dummy needles are placed at nonspecific acupoints, unilaterally at each *Jiao* or Burner, located ~0.5 cun from the Governing Vessel.[20] The Heart *Shu* was added, as nearly all of the points had strong erythema. The needles were retained for nearly 55 minutes until all of the erythema was resolved.

After the needles were removed, the *Yuan* source points on the Heart and Small Intestine channels were needled. *Wangu* SI 4 was needled on the left, De Qi was achieved,[22] and the needle was then rotated a quarter turn clockwise for Tonification. The right *Wangu* SI 4 followed, then the left *Shenmen* HT 7, and then the right *Shenmen* HT 7 were all needled in the same fashion. This was done to encourage the Heart to restore its role as monarch of the five officials.

The patient returned 1 week later and reported feeling peaceful and hopeful. Treatment was resumed as reported above for the various phases of her cycle. Her next menstrual cycle flow was fresh red, with no clots, and she did not have cramping. The plan was continued to wait until December 2006 to begin trying for pregnancy again, while work was going on to supplement her Kidney and regulate her Liver.

RESULTS

This patient conceived in early December 2006 and experienced few difficulties in her pregnancy other than moderate nausea in weeks 6–8 of gestation. During this time, *Shou Tai Wan* was prescribed through gestational week 8, and weekly acupuncture was administered through her fifth month. The acupuncture treatments were as follows:

- *Baihui* GV 20=: Raises Qi.
- *Sishenchong* combined with *Baihui* GV 20=: Calms *Shen*[23]
- *Neiguan* PC 6=: Harmonizes the Stomach and calms *Shen*
- *Zusanli* ST 36=: Tonifies Qi
- *Qiuxu* GB 40=: Circulates Qi
- *Fuliu* KI 7 +: Tonifies Kidney Yang
- *Yinxi* HT 6 −: Added if night sweats occurred.

She brought to term and then delivered a healthy baby boy in mid-August of 2007; the boy weighed 10 lbs and 11 oz.

DISCUSSION

This kind of case is commonplace in an infertility acupuncture specialty practice. The cause of this patient's recurrent miscarriages was likely the result of elevated FSH. FSH naturally elevates as women age, and this is a normal process in aging.[1] This is also described by the *Nei Jing*.[23] Qi and Blood are in the middle of a slow and natural decline and the Kidney continues to weaken.

Treatment of the Heart *Shen* was essential in this RPL case. There is often anguish, frustration, grief, bitterness, and fear that one will not conceive again, or, if one does, concern about not carrying to term. The seven emotions are

a known etiological factor for imbalance in TCM.[23] The *Shen* can be disturbed as a result of these unresolved emotions and potentiate the imbalance of Yin and Yang.[19] Unresolved emotions can also cause uterine vessels and collaterals (*Bao Mai* and *Luo*) obstruction, undermining its ability to hold the pregnancy because of inadequate Yin, Yang, Qi, and Blood.

The success of this case is also the result of this patient's ability to conceive as well as the quality and virility of her husband's sperm. It is also possible that she may have eventually conceived a viable pregnancy without TCM treatment.

CONCLUSIONS

Little peer-reviewed evidence currently exists exploring TCM's role in treating subfertile women with RPL. However, this case reports that TCM treatment positively and safely aided a woman in conceiving and delivering a healthy child. More research is needed to elucidate further the safety and effectiveness of treating RPL with TCM.

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DISCLOSURE STATEMENT

No competing financial interests exist for any of the authors.

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Address correspondence to:
Lee Hullender Rubin, DAOM
Oregon College of Oriental Medicine
Research Department
75 NW Couch Street
Portland, OR 97209

E-mail: lrubin@ocom.edu