

# Treating Infertility with the Integration of Traditional Chinese Medicine and Assisted Conception Therapy

by Liqin Zhao

## Abstract

Infertility is a common gynaecological condition in modern society. Cases of infertility have progressively increased, especially in recent years. Traditional Chinese Medicine (TCM) has been used to treat infertility for thousands of years, although nowadays assisted conception therapy (ACT) is also available. The author has demonstrated that TCM is not only the most effective treatment for infertility, but can also improve the success rate of ACT significantly. In this article, illustrated by case studies, the author will discuss the aetiology and pathology from both a TCM perspective and Western medical understanding, introduce her positive unique treatment strategies, which include the use of TCM diagnostic differentiation, TCM cycle therapy, and integrated with the most advanced ACT technology such as IUI, IVF and ICSI.

## Introduction

Around one in six couples have problems conceiving naturally<sup>[1]</sup>, and this is predicted to rise to one in three in Europe over the next decade<sup>[2]</sup>. In the western countries, most infertile couples seek treatment such as ovulation induction, IUI, IVF or ICSI before turning to TCM. However, TCM has been recognised and used popularly worldwide over the last 20 years, and many studies and research have proved that it is the most effective treatment of infertility. According to my 26 years clinical and research experience, applying the integration of TCM with ACT can speed up the progress of treatment and enhance a woman's chances of conception significantly.

## Definition of Infertility

Infertility is the inability to conceive after regular unprotected sexual intercourse for two years in the absence of known reproductive pathology<sup>[3]</sup>. In some countries, reproductive endocrinologists may also consider a couple to be infertile if the couple has not conceived after 12 months of contraceptive-free intercourse if the female is under the age of 34, or the

couple has not conceived after 6 months of contraceptive-free intercourse if the female is over the age of 35<sup>[4]</sup>.

There are two types of Infertility: primary infertility and secondary infertility. Primary infertility means that the couple has never been able to conceive; secondary infertility is difficulty conceiving after already having conceived (either carried the pregnancy to term, or had a miscarriage).

## TCM Philosophy

TCM philosophy states that infertility is ultimately associated with three organs: kidney, spleen and liver. These internal organs are interconnected function units: if any of the organs dysfunction, fertility problems may appear.

The Kidney, 'the origin of congenital constitution', is considered as the origin of yin-yang and the source of life of the human body. It stores the essence, the major material foundation for our body's growth, development and reproduction. Dysfunction of the kidney may lead to delayed periods, scanty periods, anovulation or even amenorrhea and infertility.

The Spleen, 'the material basis of the acquired constitution', is known as 'the source of Qi and Blood'. It is the foundation of life after birth, governs most energetic processes in the body, transports and transforms the food into qi, blood and nutrients, and keeps blood flowing in the blood vessels. The spleen must be functioning optimally for a healthy menstrual cycle. Dysfunction of the spleen may cause qi and blood deficiency, leading to heavy periods, short menstrual cycles, spotting or bleeding after ovulation, short luteal phases, prolonged bleeding and infertility.

The Liver governs the normal flow of qi, stores blood and regulates the volume of blood in circulation. It plays a major role in assisting ovulation, and has a great influence over the menstrual cycle. If the liver system is not functioning smoothly, then neither is the hormonal system.

Dysfunction of liver qi may cause dispending pain of the chest, breasts and lower abdomen, irregular periods, mental depression, PMT and menopause. Repeated and persistent emotional abnormality may result in the stagnation of liver qi or hyperactivity of liver yang, causing oestrogen to build up, leading to heavy and painful periods, short menstrual cycles, or the uterus becoming a toxic environment, hostile to implantation and conception. If liver blood fails to replenish the uterus—the house of blood, scanty periods or amenorrhea may occur.

There are four main pathological patterns of infertility: deficiency of spleen qi and kidney yang and the accumulation of cold and damp in the uterus; insufficient kidney yin (jing) with empty fire and liver qi stagnation with blood deficiency; deficiency of qi and blood with the accumulation of phlegm and damp; damp and heat together with blood stasis in the uterus.

### Western Medicine Understanding

There are many biological causes of infertility, which are often very complicated. They may sometimes interfere with each other, while at other times several factors may coexist. Some of the causes are still not clear or have not been found. Therefore, it may be difficult to determine the definite cause of infertility in some cases.

There are five major factors which may cause female infertility. Obstacle of ovulation and pelvic endometriosis are often the causes of primary infertility, while fallopian tube obstruction, uterine and cervix problems are often the causes of secondary infertility.

#### 1. Ovarian factors

- Nervous and mental factors: a woman's dysfunction of endocrinal sexual axis can cause irregular periods, anovulation or even amenorrhea. Enduring stress, anxiety and worry can interfere with the sexual axis and restrain ovulation.
- Ovarian disorders: acute and chronic ovarian infection, ovarian-endometriosis, ovarian cysts, or ovarian tumour; congenital mal-development of ovaries, such as polycystic ovary or polycystic ovarian syndrome (PCOS), etc. These can cause a decline in the ovarian function or endocrine disorder and, as a consequence, interfere with hormonal balance and cause ovulation problems.
- Long-term use of oral contraceptive pills may cause ovarian function disorder. Patients may manifest irregular periods or amenorrhea, high follicle stimulating hormone (FSH), low anti-mullerian hormone (AMH), premature ovarian failure (POF) or pre-menopause.
- Hyperthyroidism, hypothyroidism, and severe diabetes may cause ovarian functional disorder.

Some contagious diseases such as mumps or pulmonary tuberculosis may impair ovarian function and cause infertility.

#### 2. Uterine factors

Congenital malformation or mal-development of the uterus, endometritis, endometriosis or uterine fibroids; uterine infection after miscarriage, labour or abortion; congenital mal-development of cervix, incompetent cervix, narrow cervix, cervix infection or cervix erosion, etc, may interfere with the transportation of sperm and implantation of the embryo, and consequently inhibits conception.

#### 3. Fallopian tubes factors

Recurrent vaginal infection, pelvic inflammatory disease (PID), chlamydia, endometriosis, or ectopic pregnancy may damage the wall of the fallopian tubes and cause blockage of the fallopian tubes and adhesion of the pelvis, thereby preventing conception.

#### 4. Unexplained infertility and immunological infertility

It is common for a woman to be diagnosed with unexplained infertility, after having undergone an extensive array of tests, with none of the tests pinpointing her problem. Further investigations for some unexplained infertile women are sometimes necessary. Immunological tests have found that some women produce anti-sperm antibodies and/or natural killer cells, which may cause anti-sperm immunological reaction, sperm agglutinating to each other, losing the ability to penetrate and fertilize eggs or even die. Such factors will naturally lead to the woman not being able to conceive.

#### 5. Other factors

Age, stress, living environment or climate changes, heavy smoking and drinking of alcohol, radiotherapy and chemotherapy may contribute to infertility.

### Treatment Strategies

#### 1. Deficiency of spleen Qi and kidney Yang, accumulation of cold and damp in the uterus

Aetiology and pathology:

A weak constitution of kidney yang, failure of warming uterus, poor diet, over-consumption of cold food and dairy products and extreme worry and stress may all impair spleen function, failing to transport body fluid; prolonged fluid retention may then transform into dampness. The accumulation of cold and damp obstructs the qi and blood flow in the

uterus; the long term intake of oral contraceptive pills suppresses the kidney qi; obsessive dieting causes deficiency of spleen qi and blood, disharmony of chong and ren channels. As a consequence, the uterus and ovaries are unable to get adequate blood supply for conception.

#### Clinical Manifestation:

Infertility, delayed periods with scanty bleeding for 2-3 days only, or spotting/bleeding around or after ovulation, sore back, stomach cramps, aversion to cold, frequent urination, loose bowels, profuse and watery vaginal discharge. Pale-swollen tongue with teeth marks, white and greasy coating, deep-fine- slow pulses. This type is commonly seen in women with unexplained infertility, anovulation, luteal phase defect (LPD) (luteal phase is shorter than 14 days), hyperthyroidism or after repeated IVF or ICSI treatment. TCM is highly effective for this type of infertility.

#### Treatment Principle:

Strengthen spleen qi and kidney yang, expel cold and remove dampness, warm the uterus and harmonise the chong and ren channels. Herbs: Shan Yao, Shan Zhu Yu, Yin Yang Huo, Dang Gui, Shu di Huang, Du Zhong, Tu Si Zi, Sha Yuan Zi, Dang Shen, Bai Zhu, Xu Duan, Ai Ye. Acupoints: Pishu (UB 20), Shenshu (UB 23), Mingmen (DU 4), Guanyuan (REN 4), Zusanli (ST 36), Fulu (KI 7) and Taixi (KI 3). Moxibustion: Pishu (UB 20), Shenshu (UB 23), Mingmen (DU 4) and Shenque (REN 8).

### 2. Insufficient Kidney Yin(Jing) with Empty Fire, Liver Qi Stagnation with Blood Deficiency

#### Aetiology and Pathology:

This is due to congenitally insufficient kidney yin (Jing) and blood; a long term use of birth control pills which suppresses the kidney Jing and qi; being stressed, anxious and frustrated with failure of conception, which affects liver qi movement and causes liver qi stagnation; or prolonged working hours over consuming the yin (Jing) and blood. Altogether these factors may cause disharmony of the qi and blood, kidney yin deficiency with empty fire, a failure to nourish each other between chong and ren channels. As a consequence, infertility occurs.

#### Clinical Manifestation:

Infertility, irregular periods, heavy or scanty bleeding or even amenorrhea, vaginal dryness, painful sex, premenstrual breast tenderness and headaches, depression, high irritability, hectic heat, night sweats, insomnia and fatigue, red tongue with thin and less

moisture coating, wiry-fine-rapid pulses or deep-fine-rapid pulses.

It is often seen in women with unexplained infertility, after discontinuing the use of contraceptive pills, POF with high FSH and low AMH, or immunological infertility. Ovulation induction therapy – Clomid is unlikely to work in these cases, but may cause strong side-effects. IVF with donor eggs is often advised by consultants.

Treatment Principle: Nurish kidney yin and tonify blood, soothe liver qi and clear heat. Herbs: Danggui, Baishao, Shudihuang, Gouqizi, Nuzhenzi, Hanliancao, Shanyao, Mudanpi, Xiangfu, Chaihu, and Suanzaoren. Acupoints: Geshu (UB 17), Ganshu (UB 18), Sheshu (UB 23), Guanyuan (REN 4), Zigong (EX-CA1), Neiguan (PC 6), Hegu (LI 4), Xuehai (SP 10), Sanyijiao (SP 6), Taixi (KI 3), Taichong (LV 3).

### 3. Deficiency of Qi and Blood, Accumulation of Phlegm and Dampness

#### Aetiology and Pathology:

This is due to obesity or over consumption of sugary and greasy foods and dairy products. Extreme worrying and excessive physical work impair spleen function. The spleen fails to transport fluid and food into useable energy, leading to qi and blood deficiency. Accumulated fluid in the body may then transform into dampness and phlegm, thereby blocking the chong and ren channels. The uterus and ovaries are starved of blood, causing irregular or scanty periods, or even amenorrhea and infertility.

#### Clinical Manifestation:

Infertility, scanty or delayed periods or even amenorrhea, low sex drive, prone to vaginal thrush, obesity, fatigue and heavy limbs, pale tongue with white or white and greasy coating, fine and slippery pulses. These women are often diagnosed with polycystic ovaries or PCOS, endocrine disorders and obesity.

Treatment Principle: Tonify qi and nourish blood; remove dampness and resolve phlegm. Herbs: Huang Qi, Dang Shen, Cang Zhu, Xiang Fu, Chong Wei Zi, Fu Ling, Chen Pi, Ban Xia, Dang Gui, Chuan Xiong, Zao Ci, Yi Mu Cao. Acupoints: Baihui (DU 20), Tianshu (ST 25), Qihai (REN 6), Guilai (ST 29), Pishu (UB 20), Shenshu (UB 23), Zusanli (ST 36), Fenglong (ST 38), Sanyinjiao (SP 6).

### 4. Damp and Heat together with Blood Stasis in the Uterus

#### Aetiology and Pathology:

This is due to over consumption of deep fried food, greasy food and hot spicy food, heavy drinking and smoking; or internal impairment by severe emotions, liver qi stagnation turning to fire; or pathogenic heat and toxin invading the uterus after a prolonged illness, miscarriage, abortion or pelvic surgery, which may cause accumulation of damp and heat, and blood stasis in the uterus and pelvic area. This may block the ren channel, preventing menstruation. Therefore, no conception can be achieved.

#### Clinical Manifestation:

Infertility, short menstrual cycles with heavy bleeding, or impeded menstrual flow, dark purplish blood mixed with blood clots, severe abdominal pain, lower backache, premenstrual breasts tenderness, dry and bitter taste in the mouth, dark-red tongue with black spots on the edge, white or yellow-greasy coating, wiry or slippery-rapid pulses.

It is commonly seen in women with pelvic inflammatory disease (PID), uterine fibroids, endometriosis, blocked fallopian tubes, after ectopic pregnancy, miscarriage or abortion, immunological infertility etc. IVF may be necessary for some woman.

#### Treatment Principle:

Clear heat and eliminate dampness, motivate blood and resolve blood stasis. Herbs: Tao Ren, Hong Hua, Dan Shen, Dang Gui Wei, Chuan Xiong, Chai Shao, Yi Mu Cao, Xiang Fu, Ren Dong Teng, Yi Yi Ren, Huang Bai, Lulu Tong. Acupoints: Quchi (LI 11), Hegu (LI 4), Xuehai (SP 10), Tianshu (ST 25), Yinlingquan (SP 9), Diji (SP 8), Guilai (ST 29), Taichong (LV 3), Sanyinjiao (SP 6).

#### TCM Cycle Therapy

TCM cycle therapy can be very useful in treating infertility, while regulating periods and preparing general wellbeing. For women undergoing IUI or IVF/ICSI treatment, applying TCM cycle therapy based on their IUI or IVF/ICSI protocol can increase their chances of conceiving dramatically.

TCM draws its philosophy and treatment from the recognition of this connection between humanity and nature. It recognises that everything is considered to be created through the integration of yin and yang, qi and blood. Different energies dominate each phase of the menstrual cycle. Therefore, TCM treatment should be focused on those energies depending on the time of their period. However, the primary pattern diagnosis should always be addressed no matter what phase of the cycle.

#### Phase I, Yin phase – Follicular phase:

Kidney yin (or essence) and blood govern the Yin phase. Nourishing kidney yin, enriching qi and blood to support oestrogen, improve eggs quality, strengthen endometrial lining, and to prepare the basic condition for conception.

#### Phase II, A process of transformation – Ovulation phase:

Liver qi and blood flow control ovulation. Liver qi is triggered to begin the transformation of yin energy (oestrogen) into yang energy (progesterone). Therefore, nourishing kidney yin and warming kidney yang to support the transformation, soothing liver qi and activating blood to promote ovulation.

#### Phase III, Yang phase – Luteal phase:

Kidney yang and spleen qi dominate the Yang phase. It is therefore crucial to strengthen kidney yang and spleen qi, nourish blood to support progesterone and to increase the chances of successful implantation and conception.

#### Phase IV, The premenstrual phase:

Liver Qi helps premenstrual transformation, converts yang energy into yin energy. Harmonising liver qi, improving blood circulation, to unblock the channels and regulate period.

#### Phase V, The blood phase- Menstrual phase:

Blood is allowed to flow, menstruation is a time of rest for all the energies. Regulate qi and blood, nourish yin and move blood stasis, so the new and fresh blood can take its place in the uterus.

#### TCM and ACT

ACT is the most advanced medical technology which helps infertile couples achieving pregnancy. However, the average success rate of IVF in the UK is only 29.6% for women under the age of 35<sup>[5]</sup>, and this figure reduces dramatically for women aged over 35. Many Researches have shown that acupuncture with IVF can increase success rates significantly. A recent study published by the British Medical Journal in February 2008 concluded that women undergoing IVF who also have acupuncture improved their rates of pregnancy by 65%, substantially higher than those who did not have acupuncture.

### TCM preparation before IVF/ACT

TCM can prepare a woman's body in the best way possible to support IVF to enhance the chances of conceiving and carrying healthy babies to term. Since a woman's best response to any IVF/ACT depends on the overall endocrine status in the few months prior to the procedure, I usually suggest commencing TCM treatment three months before IVF. This allows sufficient time to restore adequate balance of energies and organs, reduce chromosome abnormalities, and improve quality of eggs and sperms, thus consequently produce better response to IVF drugs.

### Acupuncture during IVF/ACT

Applying acupuncture may only be recommended while a woman is undergoing IVF/ACT, since most consultants do not recommend patients taking any other medication besides IVF drugs. Drawing from my clinical experience and the TCM literatures I've read, applying acupuncture during IVF/ACT can:

- Support patients physically and mentally up to and after the IVF procedure
- Alleviate the tension during this stressful process
- Reduce some of the side effects caused by IVF drugs, and improve response to hormonal stimulation
- Increase blood supply to the uterus and ovaries, strengthen endometrial lining, and improve egg quality
- Balance hormone levels and create a more receptive environment in the womb for conception
- Calm the uterus to prepare for implantation
- Maintain a pregnancy if successful, minimizing the risk of miscarriage

### **Case Studies**

#### Case one: Premature ovarian failure (POF)

##### Medical history:

Lindsay, a 35 year old teacher, had taken contraceptive pills since the age of 18. She came off the pill in 2000 and planned to start a family, however her period was absent ever since. She was diagnosed with POF, and was given HRT tablets to ensure that she had monthly menstrual cycle. She had two cycles of IUI, achieved one pregnancy in 2005, but miscarried at 6 weeks. She visited me two weeks after the miscarriage, where her HCG level was still high (300 IU), and her lower abdominal area was lumpy and painful to the touch. She was very depressed and extremely anxious, always had cold hands and feet which turned blue or white and stiff in cold weather, whilst suffering from insomnia

and frequent urination. She has been a vegetarian for many years and undertook excessive exercise, she was always under-weight.

##### Treatment process:

I had advised her not to have any IUI or IVF for three months while preparing her body with TCM, but she was really concerned that her age may impact on her fertility, and wanted to keep trying without a break. She had another IUI and one IVF attempt within four months, both of which failed. She came back to me three months later and followed my acupuncture treatment programme. The main acupoints I used were: Baihui (DU 20), Yintang (M HN 1), Neiguan (PC 6), Guanyuan (REN 4), Guilai (ST 29), Xuehai (SP 10), Zusanli (ST 36), Sanyinjiao (SP 6), Taixi (KI 3), Taichong (LV 3), Ganshu (UB 18), Pishu (UB 20) and Shenshu (UB 23), modifications were made accordingly at each session. After she had received eight sessions of acupuncture, eight eggs were retrieved, seven of which were fertilised, two embryos of grade one were transferred. She then successfully achieved a pregnancy, and continued acupuncture with alteration of acupoints until 18 weeks pregnant. She had a very health pregnancy and gave birth to a healthy baby girl in 2006.

In September 2007, she went on to have another IVF attempt without acupuncture, but only four eggs were retrieved and none of them fertilised, so the cycle had to be cancelled. She then took my advice and received some more acupuncture prior to IVF. On this occasion, there were nine eggs collected, five of which were fertilized, and two grade one embryos were transferred. She had achieved another pregnancy with twins, and they are now two and half years old.

##### Analysis:

Lindsay had taken contraceptive pills for 12 years before trying for a family, which suppressed kidney qi, and reduced oestrogen production. Her uterine lining was too thin to shed regularly for menstruation or implantation. She was very stressed and anxious, worrying that she may never be able to have her own genetic children, especially after several failed IUI and IVF attempts. Her condition was deficiency of kidney yin and yang, liver qi stagnation and insufficient heart blood. TCM treatment was focused on two points: firstly to harmonise liver qi and blood, nourish heart blood, calm her mind and restore ovarian function; secondly to nourish kidney yin in order to support oestrogen and reduce FSH levels, warm kidney yang to improve blood flow to the uterus and ovaries. Since her body had recovered completely with acupuncture, she consequently responded well to IVF drugs, produced good quality eggs, and achieved two pregnancies.

### Case two: After repeated IVF treatments

#### Medical history:

Jenny and Richard were both 40 years old and were originally diagnosed with male-factor infertility – Richard had poor sperm motility and morphology. They had been trying to conceive for eight years, and had undergone nine IVF attempts, including one cancelled cycle. They had achieved two pregnancies, but unfortunately both had miscarried at 8 weeks. They were referred to me while undergoing their 10<sup>th</sup> IVF cycle.

#### Treatment process:

Acupuncture was given to Jenny once or twice weekly, with main acupoints of Ren4, Ren6, LI4, Zigong, St36, Sp10, Sp6, Ki7, Ki3, UB17, UB20, UB23 and Du4, combined with patent herbs Zuogui Wan and Nuangong Yunzi Wan. On this occasion, after six sessions of acupuncture, she produced 7 eggs, 6 of them fertilised and divided. They were told that those were the best quality embryos they have ever produced, and also, for the first time, had three viable embryos that were frozen. She had also received one session of acupuncture for 30 minutes before ET and one straight after ET, and two more sessions within a week to help with embryo implantation. She had successfully achieved a pregnancy, but started bleeding at seven weeks. I therefore prescribed Chinese herbal medicine to replace the herbal pills, along with the acupuncture. She continued taking the herbs for a month and the bleeding had stopped in just two weeks. She was fine for the rest of pregnancy, and gave birth to a healthy baby girl in January 2005.

#### Analysis:

Because this couple was diagnosed with male-factor infertility, it was essential that both partners received treatment to enhance Jenny's chances of conceiving. As a company manager, Richard was busy and stressed, and always felt hot. His liver qi and blood were stagnated, and kidney yin was deficient. Chinese herbs Liu Wei di Huang Wan was given to nourish kidney yin, while Jia Wei Xiao Yao Wan was used to harmonise liver qi and blood, together to improve his sperm quality. Jenny had only one ovary on the left side, and had already gone through nine IVF attempts, which meant constantly taking strong hormonal stimulation drugs over the years. Her body was totally out of balance and had never been able to fully recover. Her organs were not functioning optimally, which led to the depletion of kidney qi (yang) and Jing (yin), as well as deficiency of qi and blood. She therefore had a poor blood supply to the ovary and uterus, and imbalanced hormone levels. TCM had rectified this hormonal imbalance, improved uterine and ovarian blood flow, thickened the endometrial lining, and

harmonised the environment of the pelvic area. As a consequence, she achieved a healthy pregnancy and carried to term.

### **Conclusion**

Infertility is not only getting more and more common, but is also much more complicated. Since women started trying to conceive late, the contraceptive pill has often been prescribed by western doctors for stopping unexpected conception, consequently interfering with their endocrine function, and cause infertility later on in life. They may realize that age may be the factor of infertility after failing to conceive naturally and then seek for a quick solution such as IVF or IUI, etc. They eventually turn to TCM as a last resort, which means that their condition may be rather complex and the patients are often extremely stressed with their situation. However, TCM has demonstrated that it can help these women conceive with or without ACT. Here I summarised the most important points of infertility treatment:

1. There are numerous factors which may cause infertility. To be able to treat infertility effectively, it is crucial to determine its primary causes. The most common causes are: spleen qi and kidney yang deficiency; liver qi stagnation and blood deficiency; accumulation of phlegm and damp and blood stasis.
2. Western diagnosis may complement TCM treatment. We, however, should not rigidly adhere to a Western diagnosis. TCM differentiation integrated with cycle therapy can be the most effective treatment of infertility.
3. Most women with infertility are stressed and anxious due to frustration of failure of conception, therefore relaxation is essential for supporting patients, and acupuncture is often beneficial.
4. It is crucial to check the male partner's sperm count and quality while treating the female partner. TCM should be given to the men when necessary to increase the women's chances of conception.
5. IVF/ACT may be necessary for some couples. However, TCM preparation is often needed before the procedure, and timed acupuncture is crucial after the embryo transfer to support implantation.
6. As repeated IVF/ACT with strong hormonal drugs may impair kidney qi, TCM treatment must therefore be continued during early pregnancy to strengthen kidney qi and nourish blood, hence supporting progesterone production and minimising the risk of miscarriage.

### **Biography**

Dr. Li Qin Zhao is a highly experienced consultant from one of the most popular state hospital in China, and is currently a UK leading TCM practitioner on reproductive and gynaecological medicine with over 26

years clinical and research experience. She graduated in 1985 from Henan TCM University in China after five years full time study, possesses a Bachelor degree of medical science, and is well qualified in both TCM and conventional Western medicine. She has been practise acupuncture and Chinese medicine in the UK since 1995, has helped hundreds of infertile couples conceive.

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