

# The Treatment of High FSH Levels in Fertility Patients using Traditional Chinese Medicine

by Li Qin Zhao

## What is FSH?

FSH, or Follicle Stimulating Hormone, is a hormone that is produced and released by the pituitary gland in the brain and stimulates the ovaries to develop follicles, ripen the eggs and eventually release the eggs.

A baseline FSH blood test on day 2 or 3 of the menstrual cycle is expected to be below 10 iu/l in women with reproductive potential, FSH levels of 10-12 iu/l are considered borderline.

## How does high FSH affect fertility?

FSH fluctuates from cycle to cycle. In young women, FSH is normally low and the fluctuation is minimal. As a woman ages, her ovaries are depleted, FSH fluctuation becomes greater and the maximum reading gets higher and remains high until finally the woman enters perimenopause (known as menopausal transition), and subsequent menopause. This reflects the process of aging and is part of a woman's natural physiological change.

However, if it occurs prior to the age of 40, the woman may be diagnosed with 'premature ovarian failure (POF)' or 'premature menopause'. High FSH indicates poor ovarian reserve, the number of eggs left in the ovaries is declining. As a consequence, the woman becomes progressively less fertile.

Many women with high FSH levels are told that there is nothing the fertility consultant could do for them. They can't even embark on IVF or IUI until their FSH drops to the cut-off line (usually 11 or 12), as they are more likely to be a poor responder to fertility drugs used to stimulate their ovaries for IVF or IUI treatment. They are often advised to consider IVF with donor eggs. While this might give a woman a baby, it does nothing to address the underlying failure of the ovaries. Most women with high FSH prefer a treatment that will restore their ovaries and hormonal system to fully functional health, and hopefully they would be able to conceive with their own eggs and have their own genetic children.

## Possible causes of high FSH

- Premature ovarian failure (POF).
- Autoimmune disorders, for example, hypothyroidism, adrenal gland impairment or lactation.
- Long term stress or depression.
- Chromosomal defects.
- Discontinuing the use of oral contraceptives.
- Damage from pelvic surgery, abortion, miscarriage or pelvic inflammatory disease (PID).
- Chemotherapy or radiotherapy.
- Excessive smoking and/or drinking.

## TCM philosophy on high FSH

### *Kidney Yin deficiency with concurrent heat*

Being born with a genetic constitution of kidney yin deficiency or long term intake of contraceptive pills, suppressed kidney yin and energy; or chemotherapy or radiotherapy causes the depletion of kidney yin and deficiency heat. As a consequence, the Penetrating and Conception meridians become 'empty', the uterus and ovaries are being starved of blood flow, and its function begins to decline, causing high FSH.

### *Liver Qi stagnation with Spleen Qi and blood deficiency*

Excessive stress, worry or over-thinking, working long hours, or excessive drinking and smoking can add toxins to the blood, which damage the liver. Therefore causes liver Qi stagnation that fails to regulate and store blood. The spleen Qi is also impaired, meaning the spleen cannot help the stomach transform the food we eat into Qi and blood, causing blood deficiency. A lack of blood supply to the uterus and ovaries will result in a malfunction, leading to hormonal imbalance - elevated FSH.

### *Blood stagnation in the uterus*

After a pelvic operation, abortion, miscarriage or PID, the blood stagnated in the uterus and endometrium become unsmooth. Poor blood circulation in the pelvic area impairs nourishment of the uterus and ovaries, causing an unfriendly environment and an imbalanced hormone level.

### **Clinical symptoms of high FSH**

The main symptoms of high FSH are: hot flushes; night sweats; insomnia; headache; restlessness; lethargy; short menstrual cycle with scanty bleeding; irregular period; amenorrhea; early ovulation; anovulation; lack of cervical mucus; infertility. These symptoms may appear suddenly over a couple of months, or gradually over several years. It is quite common that women are diagnosed with high FSH after years of unsuccessful conception.

### **TCM treatment for high FSH**

High FSH is an extremely frustrating diagnosis. Regardless of the cause, western medicine generally does very little to help it. The treatment is usually contraceptive pills or oestrogen replacement therapy, such as HRT (Hormone Replacement Therapy). This may artificially suppress FSH, helping the woman to menstruate again, relieving some of the symptoms. However this exogenous suppression of FSH does not necessarily improve poor ovarian reserve and therefore would not help with conception as the artificial oestrogen sends signals to the brain that it doesn't need to stimulate the ovaries to produce oestrogen, causing a hormonal imbalance.

### *TCM treatment principle*

TCM is one of the most effective treatment methods for high FSH. Below are the TCM treatment principles I've summarised according to my clinical experience and to TCM academic literature I've reviewed:

- The key point of treating high FSH is to nourish the kidney yin to support oestrogen, strengthen the spleen Qi and tonify the blood to increase blood supply to the uterus and ovaries. Together this restores the ovarian function, thickens the uterine lining, rectifies the hormonal imbalance and reduces the FSH level.
- To harmonise the Liver Qi and blood, we nourish the Heart blood to calm down the spirits, improve blood circulation, regulate the menstrual cycle, balance the Yin-Yang to stabilise the FSH level, improve egg quality and promote ovulation.
- To remove blood stasis, we soften the scar tissues, strengthen the uterine self-healing function and improve general well-being. This creates a welcoming environment in the uterus for the egg to be fertilised and implanted.

	Patent Herbs	Dried herbs / concentrated powders	Acupuncture points
Principal prescription	Liu Wei Di Huang Wan (Six Ingredient Pill with Rehmannia)	Tu Si Zi (Cuscutae Semen), Nu Zhen Zi (Ligustri Lucidi Fructus),	Guanyuan (REN 3), Zigong (EX-CA1), Neiguan (PC 6), Quchi (LI 11), Zusanli (St 36), Sanyijiao (SP 6),

	Pill) or Zuo Gui Wan (Restore the Left Kidney Pill) combined with Gui Pi Wan (Restore the Spleen Pill) or Fu Ke Yang Rong Wan (Woman's Tonic Pill).	Han Lian Cao (Herba Ecliptae Prostratae), Mai Men Dong (Ophiopogonis Radix), Shan Yao (Dioscoreae Rhizoma), Dang Gui (Angelicae Sinensis Radix), Shu Di Huang (Rehmanniae Radix Preparata), Gou Qi Zi (Lycii Fructus), Ji Xie Teng, etc.	Taixi (KI 3), Pishu (UB 20), Shenshu (UB 23).
Liver Qi stagnation with blood deficiency	Jia Wei Xiao Yao Wan (Augmented Rambling Powder), Yang Xie An Shen Wan.	Chai Hu (Bupleuri Radix), Mu Dan Pi (Moutan Cortex), Ye Jiao Teng (Polygoni Multiflori Caulis), Chong Wei Zi (Leonuri Fructus), Bai Shao Yao (Discoreae Rhizoma), Xiang Fu (Cyperi Rhizoma), Suan Zao Ren (Ziziphi Spinosae Semen).	Yintang (EX-HN3), Baihui (DU 20), Shensen (HT 7), Ganshu (UB 18), Geshu (UB 17), Taichong (LV 3), Hegu (LI 4).
Blood stasis in the uterus.	Xie Fu Zhu Yu Wan (Drive Out Stasis from the Mansion of Blood Pill), or Tao Hong Si Wu Wan (Four substance Decoction with Safflower and Peach Pit), or Gui Zhi Fu Ling Wan (cinnamon Twig and Poria Pill).	Tao Ren (Persicae Semen), Hong Hua (Carthami Flos), Dan Shen (Salviae Miltiorrhizae), Chi Shao Yao (Paeoniae Radix Rubra), Yi Mu Cao (Leonuri Herba), Xiang Fu (Cyperi Rhizoma), Ze Lan (Lycopi Herba).	Tianshu (ST 25), Diji (SP 8), Guilai (ST 29), Xiehai (SP 10), Hegu (LI 4), Zhongji (REN 2).

Applying Chinese herbs and acupuncture precisely and accurately can be very effective for treating high FSH.

*Patent Herbs:* are convenient to take. However, regular acupuncture treatment should be combined to achieve the best possible result.

*Herbal tea (dry herbs or concentrated herbal powders):* Much more powerful and effective than patent herbs. The herbal components can be modified at any time as is necessary according to the patient's condition.

*Acupuncture:* It is especially effective for patients who are stressed, depressed, anxious or having sleep difficulties. Working together with herbs, it can achieve better results.

## Case Studies

### Case one

Fiona, aged 32, had taken the contraceptive pill for over 10 years before trying for a family. Her period

stopped for 6 months after she came off the pill. She then conceived her first child naturally 12 months later. She breast-fed the baby for 3 months only, but she didn't start menstruate until 10 months later and it was very irregular when she did start eventually. The shortest cycles were 22 days with light bleeding. She then stopped menstruating completely after 5 months. She went to see a gynaecological consultant in the hospital, day 2 blood tests revealed high FSH level of 46 iu/l. She was diagnosed with premature ovarian failure (POF) and told that she had no chance of conceiving naturally. She was devastated and walked out of the hospital with a prescription of 6 months HRT drugs. Nevertheless, she started having acupuncture treatment along with Chinese herbal tablets, as well as following a special fertility diet which I advised her. The treatment protocol was Baihui (DU 20), Neiguan (PC 6), Guanyuan (REN 3), Zigong (EX-CA1), Xuehai (SP10), Zusanli (St 36), Sanyinjiao (SP 6), Taixi (KI 3), Geshu (UB 17), Pishu (UB 20), Shenshu (UB 23); Patent herbs: Ba Zhen Yi Mu Wan (Eight Treasure Pill to Benefit Mothers) and Liu Wei Di Huang Wan (Six Ingredient Pill with Rehmannia). Her period came back after 4 weeks of treatment and her cycles have been regularly 28 days ever since. She then asked the consultant for another blood test to see if her FSH level had dropped any lower, but was refused as the consultant did not believe that her FSH level would ever drop to normal. Instead, she was advised to consider IVF with donor eggs. However, a month later, while she was on the waiting list for donor eggs, she fell pregnant naturally with twins, and gave birth to two beautiful, healthy girls.

### *Case two*

Jennifer, aged 34, had been trying to conceive unsuccessfully for 4 years with 11 years history of taking the oral contraceptive pill. Her menstrual cycle was between 25 to 46 days. It was always painful, with heavy bleeding. She had blood tests 2 years ago and discovered that she did not ovulate. She then tried Clomid for 10 months (two courses) and one cycle of IUI with no success. She had laparoscopy 3 months ago and severe endometriosis was detected with an ovarian cyst. She was then operated on to remove the misplaced endometrial tissues. Meanwhile she expecting that she would be able to start IUI soon, but her period cycle shortened to 19 to 25 days, and her FSH level elevated to 18.6 iu/l, with low oestrogen (oestradiol) level of 78pmol/l. The gynaecological consultant had to postpone her IUI and referred her to me. She was devastated and extremely stressed. However, her period cycle was regulated to 27 days with normal blood flow, after having been on TCM treatment for 4 weeks. The treatment protocol was Yintang (EX-HN3), Baihui (DU 20), Hegu (LI 4), Quchi (LI 11), Tianshu (ST 25), Guanyuan (REN 3), Guilai (ST 29), Diji (SP 8), Zusanli (ST 36), Sanyinjiao (SP 6), Taichong (LV 3); Herbs are Zhu Yun Wan (Support Conception Pill), Tiao Jing Bu Xue Wan (Regulate Period and Tonify Blood Pill) and Zuo Gui Wan (Restore the Left Kidney Pill). Her day 4 FSH level dropped to 10.2 iu/l (it would be below 10 iu/l if it was tested for on day 2) and oestradiol was raised to 138pmol/l, which were normal level for this stage of the menstrual cycle. Her scan on day 15 showed that she ovulated on day 14. She continued acupuncture weekly with taking herbs every day for 3 months more, and surprisingly fell pregnant naturally while she was expecting to start IUI on that cycle. She eventually delivered a healthy baby girl weighing 8lb 3oz.

### *Case three*

Joanne, aged 33 years old, had viral meningitis at the age of 15, and also had her tonsils and appendix removed in the same year. She went on the contraceptive pill at the age of 13 due to heavy periods, and was diagnosed with breast cancer at the age of 18, which spread to her bones a few months later. She had chemotherapy and radiotherapy for two years and tamoxifen for 5 years. Her period stopped for 5 years before she started menstruating again in 1999. The cycle was irregular, between 25-37 days. She recovered very well from cancer, and had breast reconstruction surgery and augmentation in 2002. She has been trying to conceive since then, but discovered that her FSH level had elevated to 20 iu/l. She cannot embark on IVF and the gynaecological consultant sent her away. She was extremely stressed, and felt hot most of the time, even though she had cold hands and feet, night sweats, poor sleep, headaches, thirst, fatigue and a craving for sweets before her period. Hysteroscopy/laparoscopy found scar tissue in her uterus. Her condition was very complicated, with a mixture of excess and deficiency. The liver qi was stagnated and the kidney yin was deficient with concurrent heat, together with spleen qi and blood deficiency. My treatment was divided into two steps:

Firstly to soothe the liver qi to regulate the period, nourish the kidney yin to cool down the heat and

increase the oestrogen level.

Secondly to tonify the blood and spleen qi while nourishing the kidney yin to increase blood supply to the uterus and ovaries, strengthen the uterine lining, improve ovarian function, reduce the FSH level and promote ovulation.

She had been having acupuncture weekly for five months combined with patent herbs. The treatment protocol was Baihui (DU 20), Yintang (EX-HN3), Quchi (LI 11), Neiguan (PC 6), Shenmen (HT 7), Guanyuan (REN 3), Zigong (EX-CA1), Zusanli (ST 36), Sanyinjiao (SP 6), Taixi (KI 3), Ganshu (UB 18), Pishu (UB 20): Herbs are Zhi Bai Di Huang Wan (Anemarrhena, Phellodendron and Rehmannia Pill), Yang Xue An Shen Wan (Tonify Blood and Calm Spirit Pill) and Gui Pi Wan (Restore the Spleen Decoction). Her FSH level reduced to 5.5 iu/l and scan showed that ovulation had occurred. She carried on the treatment and conceived naturally three months later. She couldn't believe it until she saw the baby's heartbeat on the scan. She is now 38 weeks pregnant.

#### *Case four*

Helen was 35 years old, had taken the contraceptive pill since the age of 18 and came off the pill five years ago when she was going to start trying for a family. Unfortunately, she stopped menstruating altogether ever since with raised FSH. She was diagnosed with POF, and went on HRT. She had two cycles of ovulation induction, and achieved one pregnancy, but miscarried at 6 weeks. She visited me two weeks after the miscarriage, whereas her HCG level was still high (300), and lower abdominal area was painful and hard to touch. She was extremely stressed and anxious, had difficulty in sleeping, always suffered cold hands and feet with frequent urination. She had been a vegetarian for years, along with excessive exercise and was always under-weight. The TCM treatment was designed firstly to invigorate the blood, transform stasis, cleanse uterus, and soothe the liver qi, therefore improve pelvic blood flow; then to tonify the qi and blood, nourish kidney yin (essence), as well as strengthening spleen and kidney yang. The treatment protocol was firstly, Tianshu (ST 25), Zhongji (REN 2), Guilai (ST 29), Hegu (LI 4), Xuehai (SP 10), Dijii (SP 8), Sanyinjiao (SP 6), Taichong (LV 3); Xue Fu Zhu Yu Wan (Drive Out Stasis from the Mansion of Blood Decoction) and Xiao Yao Wan (Rambling Pill). Followed by Yintang (EX-HN3), Guanyuan (REN 3), Qihai (REN 6), Neiguan (PC 3), Hegu (LI 4), Zusanli (ST 36), Sanyinjiao (SP 6), Taixi (KI 3); Gui Pi Wan/Tiao Jing Bu Xue Wan (Restore the Spleen Decoction) and Zuo Gui Wan (Restore the Left Kidney Pill). Meanwhile, I advised her not trying to conceive for three months, allowing enough time for preparing her body. But she was really concerned that her age may go against her fertility, and had another IUI and IVF attempt within the next four months, unfortunately both failed. She then took my advice, had another IVF three months later. This time she successfully conceived and carried the baby to term. She came back to me again when the baby girl was one year old, had some more acupuncture treatment prior to IVF, and achieved another pregnancy with twins, who are now 9 months old.

#### *Case five*

Julie visited me for the first time when she was 40 years old after she had one failed IVF attempt and one cancelled IVF cycle due to poor response, which converted to IUI instead. She was very stressed, depressed and anxious, extremely tired, suffering bad backache and shoulder pains and always felt cold. Her period cycle was between 21 to 28 days, with heavy bleeding and clots, painful, and bad PMT. Her condition was spleen qi and kidney yang deficiency, together with liver qi and blood stagnation. After she had five months of acupuncture and Chinese herbs, her period cycle became regularly 28 days, and she felt much better in general. Unfortunately, she stopped the treatment completely. Sixteen months later, she found out that her FSH level elevated to 14.6 iu/l, and was told that it was unlikely she would ever conceive with her own eggs. However, she wanted to try IVF with her eggs whilst waiting for donor eggs, but combined this with acupuncture for the first time. The treatment protocol was Baihui (DU 20), Neiguan (PC 3), Shenmen (HT 7), Guanyuan (REN 3), Qihai (REN 6), Zusanli (ST 36), Taixi (KI 3), Shenshu (UB 23), Mingmen (DU 4), together with moxibustion. Shi Quan Da Bu Wan (All Inclusive Great Tonifying Decoction), Cong Rong Bu Shen Wan/ Nuan Gong Yun Zi wan.

On this occasion, she responded incredibly well, produced eight follicles, had two embryos of grade one

transferred, and successfully achieved a pregnancy. She finally gave birth to a healthy baby girl of 8lb 8oz before her 43rd birthday.

#### *Case six*

Debbie was 40 years old. Her husband was 46 and had a vasectomy after having two children from a previous marriage. He failed to have it reversed.

Before they started IVF treatment, it was found that her FSH level was 14.5 iu/l. The consultant suggested that she could wait for a few more months to see if her FSH level would drop. Unfortunately, three months later, her FSH level increased to 23.2 iu/l. She was told that there was no chance of conceiving with her own eggs. They did not, however, want to use donor eggs.

She found me through her friend, and started acupuncture treatment. After eight sessions of acupuncture, her FSH level was reduced to 5.5 iu/l. She therefore started IVF treatment and responded really well to the stimulation drugs. The treatment protocol was Yintang (EX-HN3), Guanyuan (REN 3), Zigong (EX-CA1), Neiguan (PC 3), Xuehai (SP 10), Sanyinjiao (SP 6), Taixi (KI 3). She had two embryos of grade 1-2 transferred and achieved a strong positive result. Her little boy is now two and a half years old.

#### **Summary**

From birth, women are filled with all the eggs they will ever have (1-2 million). This gradually decreases with age, until they enter menopause when the ovaries are depleted and run out of eggs and the FSH is elevated and stays elevated. This is a natural physiological process. However, if young women have high FSH, this indicates that the women are likely to be poor responders to fertility medications and that IVF/IUI may or may not increase their chances of pregnancy. It does not necessarily mean that there are no high quality eggs remaining or that pregnancy is impossible. As long as the FSH is fluctuating, the odds of conception are higher than if it remains elevated.

When the patient's menstrual cycle has been regulated back to normal, the treatment principle should be altered according to the woman's four different phases of her cycle and the yin-yang pattern, qi-blood transformation, to promote ovulation and support conception.

From my clinical observation, the combination of TCM and HRT can be quite effective for reducing FSH level sometimes. When the patient's FSH drops to normal levels, they generally have a good chance of conceiving naturally if they continue TCM treatment, although IVF may be necessary for some of them that also have other conditions, for instance, if the male partner has severe problems of sperm or if he has had a vasectomy, or if the woman is suffering from serious endometriosis, fibroids, fallopian tube blockage, or a willingness to try acupuncture alongside IVF. It is often that the gynaecological consultant advises patients to stop taking any other medication including Chinese herbs whilst having IVF drugs. In these cases, I suggest that we should cooperate with the consultant, providing acupuncture only. However, we need to moderate some acupuncture points according to their IVF treatment protocols, such as long protocol, short protocol or Antagonist regime, etc. Applying acupuncture treatment precisely and effectively during IVF, IUI or ICSI, can mitigate some of the side effects caused by those drugs, support and improve their response to the hormonal stimulation, produce better quality eggs and create a welcoming environment in the uterus. As a consequence the success rate of pregnancy will increase.

#### **Bibliography**

- Lewis R (2004) *The Infertility Cure*. London: Little, Brown and Company.  
Shen G and Huang K (1999) *Treating Infertility with the combination of TCM and Western Medicine*. Beijing: Scientific and Technical Documents Publishing House.  
Zeng Q (2003) *TCM Treatment of Infertility*. Nanjing: Jiangsu Science and Technology Press.