

## Acupuncture Is Successful for An Infertile Couple with Polycystic Ovary Syndrome (PCOS) And Oligo-Astheno-Teratozoospermia (OAT): A Case Report

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**Abstract**

This article is a case report on a couple who had difficulty conceiving for 4 years. They wanted to undergo acupuncture to improve their health and increase their chances of conceiving.

Four years prior, the wife was diagnosed with polycystic ovary syndrome (PCOS) and primary infertility. She wanted to regulate her menstrual cycle, to help release eggs regularly, to increase the rate of ovulation and the chance of pregnancy. The husband was diagnosed with oligo-astheno-teratozoospermia (OAT). He wanted to improve the quality of his sperm i.e. sperm count, motility and morphology.

**Results:** Acupuncture was done once a week as the sole treatment for each member of the couple over the course of 4 months, which resulted in the female partner becoming pregnant naturally and giving birth to a healthy baby boy.

**Conclusions:** This case suggests that acupuncture is an effective treatment for female patients with PCOS and for male patients with OAT.

**Keywords:** Polycystic Ovary Syndrome (PCOS), Oligo-Astheno-Teratozoospermia (OAT), Acupuncture, Female Infertility, Male Infertility

**Introduction**

Polycystic ovary syndrome (PCOS) is a condition in which the ovaries produce an abnormal number of androgens (male sex hormones) that are usually present in women in small amounts. PCOS describes the numerous small cysts (fluid-filled sacs) that form in the ovaries [1]. PCOS is one of the most common causes of female infertility. Women with PCOS often have high levels of androgens, which negatively affect a woman's menstrual cycle [1]. Common symptoms of PCOS include: irregular periods or no periods at all; difficulty getting pregnant; excessive hair growth (hirsutism) usually on the face, chest, back or buttocks; weight gain; thinning hair and hair loss; oily skin or acne [2]. Currently, hyperandrogenemia, oligomenorrhea, amenorrhea and anovulation, and polycystic ovary morphology are the three main criteria used to diagnose PCOS [3].

Polycystic ovary syndrome (PCOS) is a common endocrine disease in women of reproductive age. In western medicine, the exact cause of PCOS is unknown [4]. In the treatises of Traditional Chinese Medicine (TCM) there is no "PCOS" medical terminology. According to the clinical symptoms mentioned above, PCOS

belongs to the category of amenorrhea, oligomenorrhea, irregular menstruation, and infertility in TCM. The etiology and pathogenesis of PCOS in TCM are kidney qi deficiency, liver qi stagnation, blood stasis, phlegm and damp retention. In TCM, the major therapeutic principles used to treat PCOS include tonifying the kidneys, dispersing stagnated liver qi, regulating blood, clearing damp and resolving phlegm [5].

Oligo-astheno-teratozoospermia (OAT) is a condition that includes oligozoospermia (low sperm number), asthenozoospermia (low sperm motility), and teratozoospermia (abnormal sperm morphology) [6]. OAT is the most common cause of male subfertility. Subfertility is when a man cannot impregnate a woman after 1 year of regular sex without birth control. The cause of OAT is unknown in western medicine. In fact, up to 30% of the cases of male infertility are said to have idiopathic OAT [7]. In contrast, in TCM, the cause is known: the fundamental pathogenesis of male infertility is kidney deficiency [8]. A low sperm count is due to a deficiency in kidney essence; low motility is due to a deficiency in kidney yang; and low morphology is due to a deficiency in kidney essence or the accumulation of damp heat [9].

## Clinical Case

### General Information

#### The wife's case

A 33-year-old woman, a bank employee, G0P0A0, the first consultation was on November 5, 2020. She had been diagnosed with PCOS (cause unknown) in 2015 and had been taking Metformin since then. She had been trying to conceive for 4 years. Her main symptoms included: no ovulation, an irregular and long menstrual cycle, which varied between 36-60 days with light bleeding (15ml) that lasted 3 days only; and very little cervical mucus in the middle of her cycle. She was overweight (98.5 kg; her BMI was 27). She had acne on the face and upper back, a lot of gray hair on the head, thinning scalp hair, excess hair growth on the face, chest, back and buttocks. She suffered from constipation (bowel movements once every 2-3 days); lower back pain off and on. She likes to eat sweet and spicy food, and often had acid reflux. She went to bed at 11:00 pm, and woke up to pee once in the middle of the night. She had cold hands and feet. Premenstrual syndrome (PMS) symptoms included mood swings, tender breasts and cramps, food cravings all the time, especially in the evening, fatigue, irritability, and depression. Her tongue was fat with tooth marks on both sides, red in color with a greasy, yellow coating; and the sub-lingual veins were dark red. Her pulse was thin and slippery.

Her ultrasound showed there were numerous small collections of fluid (follicles).

**TCM Diagnosis:** Primary infertility due to kidney essence deficiency, spleen qi deficiency, liver qi stagnation, accumulation of phlegm and dampness.

**Acupuncture Treatment Strategy:** Strengthen and enrich kidney essence, nourish spleen qi, regulate liver qi, promote the flow of blood and qi, remove phlegm and dampness.

**Results:** During the course of treatment, the length of her menstrual cycle reduced; the number of days of menstrual bleeding increased to 6 days from only 3; the amount of blood increased to 50ml from 15ml; and the amount of cervical mucus on fertile days increased. After a total of 13 sessions of acupuncture, her menstrual cycle was regulated to 28 days. Her LMP was March 19, 2021, she ovulated on cycle day 14, became pregnant naturally, and gave birth to a healthy baby boy on December 29, 2021 (Table 1).

**Table 1: The changes in menstrual cycle and ovulation dates during acupuncture treatment**

Number of cycle	Cycle length	Menstrual bleeding	Ovulation day	Cervical mucus
First cycle	50 days	3 days	Day 34	A little
Second cycle	39 days	4 days	Day 25	Tiny
Third cycle	35 days	5 days	Day 22	Obvious
Fourth cycle	28 days	6 days	Day 14	Abundant

#### The Husband's Case

A 34-year-old man, IT software developer, the first consultation was on November 5, 2020. He had been diagnosed with oligo-as-theno-teratozoospermia (OAT) and a varicocele. His semen analysis in 2020 revealed that there was a low sperm count, low sperm motility and low normal morphology. His main symptoms included: overweight (102kg and BMI was 26). He suffered from constipation (bowel movements once every 2-3 days). He bloated easily after eating. He ate only two meals a day and skipped breakfast for many years. He went to bed late after midnight, sometimes even at 2 or 3am. He slept little, 5 to 6 hours a night. He worked long hours (10-11 hours a day) and had a high level of stress. His feet were often cold and, in general, he was sensitive to cold. His tongue was light red and cracked with a deep line in the middle. His pulse was deep.

**TCM Diagnosis:** kidney yang and kidney essence deficiency, stomach and spleen qi deficiency, blood and qi deficiency, liver qi stagnation.

**Acupuncture Treatment Strategy:** invigorate kidney essence and strengthen kidney yang; nourish stomach and spleen qi, tonify qi and nourish blood, disperse stagnated liver qi.

**Results:** After being treated once a week for 4 months with acupuncture, he repeated the semen test and all of the parameters for measuring the health of semen had improved (see table 2).

**Table 2: Semen Analysis in 2020 and 2021**

Semen Parameters	Results Before acupuncture	Results After acupuncture	WHO Reference Limit
Semen volume (ml)	1.4 ml	2 ml	1.5 ml
Total sperm count (million)	20 million	35 million	39 million
Progressive motility (%)	14 %	30 %	32 %
Normal morphology (%)	2.93%	4.6%	4%

## Methods

Treatment protocol: Both husband and wife had acupuncture once a week.

### 3.1: Acupuncture protocol and points for the wife

Group	Acupoints selected
Group 1	DU20 (Baihui), ST40 (Fenglong), ST36 (Zusanli), ST29 (Guilai), ST25 (Tianshu), CV6 (Qihai), CV3 (Zhongji), SP10 (Xuehai), SP9 (Yinlingquan), SP6 (Sanyinjiao), SP4 (Gongsun), GB27 (Wushu), EX-CA1 (Zigong), KD12 (Dahe), KD3 (Taixi), LIV3 (Taichong).
Group 2	Back shu points: BL15 (Xinshu), BL17 (Geshu), BL18 (GanShu), BL20 (Pishu), BL23 (Shenshu). Baliao points: BL31 (Shangliao), BL32 (Ciliao), BL33 (Zhongliao), BL34 (Xiaoliao).
Group 3	Auricular points: Zigong (TF2), Ovary, Endocrine (CO18), Liver (CO12), Spleen (CO13), Kidney (CO10).

Frequency: 1 treatment a week, 12 times per treatment course. 3 groups of acupoints were used alternately.

### 3.2 : Acupuncture protocol and points for the husband

Group	Acupoints selected
Group 1	LIV3 (Taichong), LIV8 (Ququan), LIV12 (Jimai), GB 27 (Wushu), CV6 (Qihai), CV12 (Zhongwan), ST36 (Zusanli), ST29 (Guilai), ST25 (Tianshu); SP9 (Yinlingquan), SP6 (Sanyinjiao), KD7 (Fuliu), PC6 (Neiguan), LI4 (Hegu), DU20 (Baihui).
Group 2	Back shu points: BL15 (Xinshu), BL18 (GanShu), BL20 (Pishu), BL21 (Weishu), BL23 (ShenShu). And Du 4 (Mingmen). Baliao points: BL31 (Shangliao), BL32 (Ciliao), BL33 (Zhongliao), BL34 (Xiaoliao).
Group 3	Auricular points: Gaowan, Shenmen (TF4), Endocrine (CO18), Liver (CO12), Spleen (CO13), Kidney (CO10).

Frequency: 1 treatment a week, 12 times per treatment course. 3 groups of acupoints were used alternately.

## Manipulation

### For the wife

**Preparation:** After disinfecting all points with a cotton ball dipped in alcohol, the order of inserting the needles is from the lower limbs to the abdomen, starting on the left side and finishing on the right side. Disposable sterile needles, size 0.25x25mm and 0.35x75mm, are used and are inserted perpendicularly in all points to a depth of 10 to 15mm with the tonification technique.

An electro-acupuncture stimulator (model KWD-808I, brand Greatwall) is connected ipsilateral at two anterior acupoints, KD12 (Dahe) and EX-CA1 (Zigong), and at four posterior acupoints, BL31-34 (Baliao), and set to a continuous wave, the intensity of which is based on the patient's preference. Needles remain inserted for 30 minutes each session and acupuncture points are needled bilaterally and alternately. A TDP lamp is used on the belly during the session.

### For the husband

The preparation is the same as that for the wife. (Omitted).

An electro-acupuncture stimulator (model KWD-808I, brand Greatwall) is connected ipsilateral at two anterior acupoints, LIV12 (Jimai) and GB 27 (Wushu), and at four posterior acupoints, BL31-34 (Baliao), and set to a continuous wave, the intensity of which is based on the patient's preference. Needles remain inserted for 30 minutes each session and acupuncture points are needled bilaterally and alternately.

## Discussion

PCOS is a common cause of infertility in women and OAT is the most common cause of subfertility in men. The fundamental pathogenesis of PCOS and OAT in TCM is kidney deficiency (essence, qi). As a consequence of kidney qi being deficient for a long time, spleen qi will be deficient, water will stagnate and lose the transformation, qi will be blocked, phlegm will be endogenous, and liver qi will stagnate.

Acupuncture has been widely used to treat infertility in both women and men in the West for the last decade. Based on TCM theory, the strategy of acupuncture used to treat infertility is to tonify kidney qi and essence, and strengthen kidney yang, references to which are found in the following sources.

1. The importance of the kidneys is found in the ancient treatise on Traditional Chinese Medicine (TCM), The Yellow Emperor's Classic of Internal Medicine (in Chinese: 黄帝内经): "The kidneys store congenital essence which controls a human being's growth, development, reproduction and fertility, and is the physiological function of kidney essence and kidney qi." A deficiency in kidney essence will result in insufficient reproductive essence, and ultimately lead to infertility.
2. The Chinese medical classic General Treatise on Causes and Manifestations (in Chinese: 诸病源候论) written by Chao Yuanfang, a medical author during the Sui Dynasty (581–618 CE), states that: "The kidneys govern the bone marrow and store essence. Tired and weak kidney qi causes semen deficiency."

3. And lastly, the centrality of the kidneys to pregnancy was written about during the late Qing Dynasty by the renowned TCM doctor Zhang Xichun in the Medical Records of Chinese and Western Medicines (in Chinese: 医学衷中参西录): “Both male and female fertility depends on the essence of the kidneys. Therefore, kidney essence is the basis of fertility; kidney qi is the key to achieving a perfect pregnancy. The exhaustion of Tiangui (kidney essence) mainly dominates the rise and fall of reproductive function under the influence of kidney qi.”

4. The kidneys are considered the congenital foundation of men. The TCM treatise Questions of Fundamental Nature (in Chinese: 素问) says: “The kidneys govern the bone marrow, and the bone marrow produces the liver.” This indicates that the liver and kidneys are homologous, and essence and blood are mutually produced. The essence of reproduction as the foundation of reproduction depends on the essence of the kidneys and the blood of the liver.

5. Zhang Jingyue, the great TCM master from the Ming dynasty, believes that the formation of phlegm is directly related to the health of the spleen and kidneys. His medical book A Complete Compendium of Jingyue (in Chinese: 景岳全书·痰饮) says that phlegm is water, its origin is in the kidney, and its end is in the spleen; the spleen controls dampness, and when the dampness moves, it becomes phlegm; the kidney controls water, and when there is excess water, it also becomes phlegm.

A clinical study shows that the acupuncture can be fully utilized to promote the development and discharge of follicles when the treatment starts on the third day of menstruation to the third day of ovulation [10]. Acupuncture affects the activity of the hypothalamic–pituitary–ovarian (HPO) axis that is the dominant system controlling ovulation during puberty [11]. Clearly, acupuncture modulates endogenous regulatory systems, including the sympathetic nervous system, the endocrine system, and the neuroendocrine system [12]. A randomized placebo-controlled study found that acupuncture improved severe oligoasthenozoospermia [13].

The acupuncture treatment for the infertile couple in this article focused on strengthening the qi of the kidneys and spleen; dispelling dampness and resolving phlegm; nourishing qi and blood; soothing the liver; regulating menstruation; eliminating blood stasis and circulating qi and blood in the meridians and collaterals. PCOS and OAT are chronic conditions that require regular and long-term acupuncture treatment in order to regulate the menstrual cycle and ovulation, to enhance the quality of sperm including sperm count, motility, and morphology and to enhance fertility.

### Conclusion

This case suggests that acupuncture is an effective treatment for female patients with PCOS and male patients with OAT. Also, acupuncture is effective for improving their health naturally.

### Lifestyle Advice

A proper diet, regular exercise, and weight control are helpful in the treatment of PCOS and OAT. It is important to adjust one's lifestyle by eliminating raw food, cold beverages, sugar, coffee and alcohol; eating 3 meals a day, going to sleep early; quitting smok-

ing; and not ruminating as peace of mind is important during the preparation for conception.

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