Effect of Traditional Chinese Medicine on oligoasthenospermatism: a narrative review

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OBJECTIVE: To summarize the treatment of oligoasthenospermia (OAS) with Traditional Chinese Medicine (TCM).

METHODS: The literature describing OAS treatment with TCM in the past 4 years was searched. Three studies were reviewed, evaluated, and summarized. The etiology and pathogenesis, pattern differentiation, medicine administration, and combination of TCM with Western Medicine were all examined.

RESULTS: TCM had an advantage in treating OAS and had fewer adverse events than conventional treatments.

CONCLUSION: Although TCM has an advantage in treating OAS and fewer adverse events, the efficacy of TCM and modern medicine on OAS is unsatisfactory.

Key words: Asthenozoospermia; Infertility; Medicine, Chinese Traditional; Review

INTRODUCTION

Oligoasthenospermia (OAS) accounts for 46% of male infertility worldwide,¹ and its incidence is rising.² The common causes of OAS are reproductive tract infections, varicocele, endocrine diseases, and systemic diseases. However, the cause of OAS is not clear in 40%-75% patients.³ The conventional medical treatment for OAS is administration of nutritional supplements such as vitamins, a variety of hormones, and other supportive treatments. However, the outcomes are not satisfactory.¹ Traditional Chinese Medicine (TCM) has been studied and used for OAS in the past. We searched the literature for TCM studies treating OAS in the past 4 years to analyze and summarize its use.

Etiology and Pathogenesis of OAS

There are no relative records on OAS in the TCM ancient literatures. According to patients clinical display, it belongs to Traditional Chinese Medicine”no child”, "cold sperm". Nevertheless, ancient and modern physi-
cians of TCM have different views on the etiology and pathogenesis of OAS. In terms of ancient ones of TCM, the causes of OAS are cold sperm Qi deficiency, phlegm, excess Kidney fire, semen scarcity, and Qi stagnation. However, many modern TCM researchers have different views on the causes of OAS. Sun et al. hypothesized that Kidney deficiency and blood stasis are responsible for OAS. Additionally, Wang et al. maintained that weakness of the Spleen and Kidney are integral to the pathogenesis of OAS, but Tian et al. argued that Kidney-essence deficiency was the main cause of OAS. Min found that there is a close physical relationship between the Liver, Kidney, and male reproductive function. Finally, Wang believes that Kidney deficiency with toxic dampness is the main pathogenesis of OAS.

OAS TREATMENT BASED ON TCM PATTERN DIFFERENTIATION

Zhang classified OAS patients as having Kidney-essence deficiency, essence and blood deficiency, excessive labor, Liver-Qi stagnation, Yin deficiency and Yang hyperactivity, and damp heat in the lower energizer. The herbs prescribed for Kidney-essence deficiency are: Lurong (Cornu Cervi Pantotrichum), Danggui (Radix Angelicae Sinensis), Renshen (Radix Ginseng), Huangqi (Radix Astragali Mongolici), Tu Si Zi (Semen Cuscutae), Ziheche (Placenta Hominis), Shan Zhu Yu (Fructus Corni), Xianmao (Rhizoma Curculiginis), Gou qizi (Fructus Lycii), Yinyanghuo (Herba Epimedii Brevicornus). The herbs prescribed for essence deficiency and blood are: Yupiao (Inglucis Pisci), Lui jiao jiao (Colla Cervi), Ziheche (Placenta Hominis), Dang gui (Radix Angelicae Sinensis), Jixu eteng (Caulis Spatholobi), E jiao (Colla Cor rii Asini), Huai jing (Rhizoma Polygonati Sibirici), Gou qizi (Fructus Lycii), stir-frying with liquid adjuvant Heshouwu (Radix Polygoni Multiflori). The herbs prescribed for overstrain are: Zi heche (Placenta Hominis), Long yan rou (Arillus Longan), Dang gui (Radix Angelicae Sinensis), Fuling (Poria), Wu weizi (Fructus Schisandrae Chinensis), Su na zao ren (Sem en Ziziphi Spinoae), Hou pu (Cortex Magnoliae Officinalis). The herbs prescribed for Liver-Qi stagnation are: Chai hu (Radix Bupleuri Chinensis), Baishao (Radix Paeoniae Alba), Chuan lian zi (Fructus Toosendan), stir-frying with liquid adjuvant Xiangfu (Rhizoma Cyperi), Nuzhenzi (Fructus Ligustri Lucidi), Huai jing (Rhizoma Polygonati Sibirici), Yujin (Radix Curcumae Wenyujin), Gou qizi (Fructus Lycii), Shan Zhu Yu (Fructus Corni), Li zhi he (Sem en Li tchi). The herbs prescribed for hyperactivity of Yang owing to Yin deficiency are: Mohan lian (Herba Ecliptae prostratae), Sang shen (Fructus Mori), Gu jia (Carap ax et Plastrum Testudinis), Mudan pi (Cortex Moutan Radicis), Bi jia (Carap ax Triyncisc), Nuzhenzi (Fructus Ligustri Lucidi), Digupi (Cortex Lycii Radicis). The herbs prescribed for damp heat in the lower energizer are: Qumai (Herba Dianthi Superbi), Bian xu (Herba Polygoni Avicularis), Dong ku guo (Fructus Malvae Verte cillatae), Pu gong ying (Herba Taraxaci Mongolici), Yi jiren (Sem en Coicis), Lian qiao (Fructus Forsythiae Suspensae), Wu hu uguo (Receptaculum Fici Caricatae), Jin yin hu a (Flos Lonicerae). Zhang hypothesized that Kidney deficiency for OAS may be associated with blood stasis or damp heat. The therapeutic principles for treatment are: nourishing Kidney essence, tonifying Qi and warming Yang, promoting blood circulation of Qi, clearing heat, and removing dampness. Gao proposed that therapy for the pattern differentiation should be based on microcosmic syndrome differentiation of semen. For example, the deficiency of Kidney Yin was often correlated with low semen volume, which may have certain clinical significance.

TCM HERBAL MEDICINES PRESCRIBED FOR OAS

The prescription of traditional medicines for the treatment of oligospermia and asthenospermia in clinic is common in China. Geng randomly divided 80 OAS patients into treatment and control groups. The treatment group was administered modified Tian xiong powder for treating oligospermia and asthenospermia. Tian xiong powder is composed of: Fu zi (Radix Aconiti Lateralis Preparata) 6 g, Huang qi (Radix Astragali Mongolici) 10 g, Bai zhhu (Rhizoma Atractylodis Macrocephalae) 15 g, Fuling (Por a) 15 g, Guizhi (Ramulus Cinnamomi) 10 g, Long gu (Os Dra conis) 10 g, Tu si Zi (Semen Cuscutae) 15 g, Gou qizi (Fructus Lycii) 20 g, stir-frying with liquid adjuvant Heshouwu (Radix Polygoni Multiflori) 15 g, Rou congrong (Herba Cistanches Deserticoae) 10 g, Ci wu jia (Radix et Caulis Acanthopanacis Santicos) 10 g, Dan shen (Radix Salviae Miltiorrhizae) 10 g. The control group was administered Wu zhi yanzong pill. The pregnancy and total effective rates in the treatment group were 8.57% and 91.43%, respectively, and 5.71% and 85.71% in the control group (P<0.05). Each group saw a significant increase in sperm density, sperm motility, and percentage of normal sperm morphology. However, the improvements of them in the treatment group were superior to those in the control group (P<0.05). Geng randomized 210 patients with OAS into two groups, with 126 in the treatment group and 84 in the control group. The treatment group was administered Sheng jing hong zi decoction, which is composed of: Chai hu (Radix Bupleuri Chinensis) 12 g, Zhi qiao (Fructus Aurantii Submaturus) 18 g, Yujin (Radix Curcumae Wenyujin) 12 g, Gou qizi (Fructus Lycii) 18 g, Nuzhenzi (Fructus Ligustri Lucidi) 15 g, Bai shao (Radix Paeoniae Alba) 18 g, Xian ma o (Rhizoma Curculiginis) 9 g, Yinyanghuo (Herba Epimedii Brevicornus) 18 g, Tu si Zi (Semen Cuscutae) 12 g, Dang gui (Radix
Angelicae Sinensis) 12 g, Wuweizi (Fructus Schisandrae Chinensis) 12 g, stir-frying with liquid adjuvant Heshouwu (Radix Polygoni Multiflori) 12 g, Huangqi (Radix Astragali Mongolici) 20 g, Cheqianzi (Semen Plantaginis) 20 g, Chuanniuxi (Radix Glycyrrhizae) 15 g, Fupenzi (Fructus Rubi Chinensis) 15 g, Chuanxuduan (Radix Dipsaci Asperoidis) 20 g, Chenpi (Pericarpium Citri Reticulatae) 12 g, Gancao (Radix Astragali Mongolici), Huangqi (Radix Astragali Mongolici), Tusizi (Semen Cuscutae), Baisha (Radix Paeoniae Alba), Chenpi (Pericarpium Citri Reticulatae), Luong (Cornu Cervi Pantorichum), Danggui (Radix Angelicae Sinensis), Gouqizi (Fructus Lycii), Shudihuang (Radix Rehmanniae Praeparata), Shanzhuyu (Fructus Coriandi), Lurong (Radix Paeoniae Rubra), Huangbai (Cortex Phellodendri Amurensis), Niuxi (Radix Achyranthis Bidentatae), Luijiaojiao (Colla Cornus Cervi), Sanqi (Radix Notoginseng). The control group was administered WuZiYangZong pill. The total effective rates were 89.68% and 71.43% in the treated and the control groups, respectively (P<0.05). Wang et al. randomized 80 patients with oligozoospermia into a treatment and control group. The treatment group was administered YiJing Decoction, and the control group was given vitamin E. They found that two patients were cured, six patients had marked effects, and 16 patients saw effects in the treatment group. The total effective rate was 63.16% in the treatment group. Zero patients were cured, two patients saw marked effects, and five patients saw effects in the control group. The total effective rate was 19.44% in the control group (P<0.05). Hu randomly divided 246 patients with oligozoospermia into a treatment and control group with 126 and 120 patients, respectively. The treatment group was administered Hushiyulin Pill, which is composed of: Yinyanghuo (Herba Epimedi Breviscorus), Shanzhuuyu (Fructus Corni), Huangqi (Radix Astragali Mongolici), Tusizi (Semen Cuscutae), Baisha (Radix Paeoniae Alba), Chenpi (Pericarpium Citri Reticulatae), Luong (Cornu Cervi Pantorichum), Danggui (Radix Angelicae Sinensis), Gouqizi (Fructus Lycii), Shudihuang (Radix Rehmanniae Praeparata), Chishao (Radix Paeoniae Rubra), Huangbai (Cortex Phellodendri Amurensis), Niuxi (Radix Achyranthis Bidentatae), Luijiaojiao (Colla Cornus Cervi), Sanqi (Radix Notoginseng). The control group was administered Shengjiing capsule. Patient A+B grade sperm count, sperm density, and sperm motility were improved in both groups, but the treatment group improved significantly more (P<0.05).

TREATMENT OF OAS WITH TCM PATENT MEDICINES

Song et al. randomized 92 OAS patients into a treatment and control group. The treatment group was administered Bushenkangle capsule and the control group was given WuZiYangZong pill. They found that 15 patients were cured, 17 patients saw marked effects, and eight patients saw effects in the treatment group, with a total effective rate of 86.96%. In the control group, 12 patients were cured, 13 patients saw marked effects, and six patients saw effects, with a total effective rate of 67.39% (P<0.05). In another study, the treatment group was given compound Xuanju capsule, and the control group was administered vitamin E capsule. Grade A sperm and sperm density improved in both groups (P<0.05), but the improvement in the treatment group was superior (P<0.05). Eighty OAS patients were randomized into two groups; the treatment group took Huangjingzanyu capsule, and the control group was administered vitamin E, B6, Clomiphene citrate, testosterone undecanoate, zinc preparations, and human chorionic gonadotropin. In the treatment group 12 patients were cured, nine saw marked effects, 15 cases saw effects, and the total effective rate was 90.00%. In the control group, eight patients were cured, five patients saw marked effects, 14 patients saw effects, and the total effective rate was 67.50% (P<0.05). In another study, 120 OAS patients were randomized into two groups; the treatment group was given Shengjing pills, while the control group was administered vitamin E. The Shengjing prescription significantly improved sperm concentration and motility (P<0.05), decreased serum FSH levels and elevated serum T levels (P<0.05), reduced DFI and seminal plasma elastase, and increased the percentage of hypotonic swelling sperm and the levels of seminal plasma α-glucosidase, fructose, zinc, and acrosin. Therefore, Shengjing prescription has good clinical efficacy and improves semen parameters in patients with OAS by multiple mechanisms. Sixty male Kidney-yang deficiency and OAS patients were randomized into two groups; a treatment and control group. The treatment group was given Wang capsule and the control Clomiphene capsules. The total effective rate of the treatment group was 86.67%, while the control group was 70% (P<0.05).

TREATMENT OF OAS WITH TCM AND WESTERN MEDICINE

Overall, 180 oligozoospermia patients were randomized into three groups, A, B, and C. Group A was administered compound Xuanju capsule combined with L-arginine, group B was given L-arginine only, and group C was given compound Xuanju capsule. After treatment, sperm density, A grade sperm, and (A+B) grade sperm improved in all groups from before treatment (P<0.05). However, the improvement in group A was superior to that in the other two groups (P<0.05). Sixty oligozoospermia patients were randomized into a treatment or control group. The treatment group was given compound Xuanju capsule combined with L-carnitine, and the control group was given only L-carnitine. The total effective rate of the treatment group and control groups were 86.7% and 70%, respectively (P<0.05). Su et al. randomly divided 86 and 78 oligozoospermia patients into study and control groups, respectively. The study group was administered zinc gluconate combined with Huangjingzanyu capsule, and the control group was treated only with Huangjingzanyu capsule. After treatment, the sperm density, grade A sperm, and (A+B) grade sperm improved in each
groups from before treatment (P<0.05). However, the improvement in study group was superior to that in the other group (P<0.05). The total effective rate of the treatment and control groups were 93.02% and 70.51%, respectively (P<0.05). In another trial, 154 oligozoospermia patients were divided into a treatment and control group. The treatment group was administered Honghuangxianzi Yin combined with L-carnitine. The total effective rates were 85.71% and 66.07% in the treatment and control groups, respectively (P<0.05).

### TREATMENT OF OAS WITH ACUPUNCTURE AND TCM MEDICINAL HERBS

Shi⁶ randomly divided 97 OAS patients into three groups: a Chinese herb medicine group, an acupuncture group, and an acupuncture combined with herbs group. The effective rate of the Chinese herb group was 72.72%, that of the acupuncture group was 70.97%, and that of the acupuncture combined with herbs group was 84.84%. Therefore, the clinical effect in the acupuncture combined with herbs group was superior to that of the other two groups (P<0.05). Sixty OAS patients were randomly divided into a treatment and control group. The control group was given conventional Western medicine plus injection of human choric gonadotropin and sodium chloride, while the treatment group was given electroacupuncture combined with the co-xuanju capsule. In the treatment group, 16 patients were cured, seven patients saw marked effects, and five patients saw effects with a total effective rate of 93.3%. In the control group, seven patients were cured, eight patients saw marked effects, and five patients saw effects with a total effective rate of 63.3% (P<0.05).

### CONCLUSION

The efficacy of Western Medicine on OAS is unsatisfactory. Modern TCM treatment of male infertility from OAS has better effects. Nevertheless, its use still has some limitations. For example, most prescriptions used are not clearly defined. Moreover, few clinical studies are actually randomized and double-blinded. Finally, the standards of diagnosis and effect evolution are not consistent, and clinical pattern differentiation has not yet reached a consensus. More rigorous studies are warranted to support the findings.

### REFERENCES

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