Clinical Observations

Clinical Observations on Therapeutic Effects of the Modified Shengjing Zhongzi Tang (生精种子汤) in Patients with Asthenospermia and Oligozoospermia

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Objective: To compare the therapeutic effects of Shengjing Zhongzi Tang (生精种子汤 Decoction for Generating Sperms) and Wuzi Yanzong Wan (五子衍宗丸 Pills for Reproduction) for asthenospermia and oligozoospermia.

Methods: Seventy patients with asthenospermia and oligozoospermia were divided into a treatment group of 35 cases treated with Shengjing Zhongzi Tang and a control group of 35 cases treated with Wuzi Yanzong Wan for 3 months respectively. The therapeutic effects were evaluated, the semen parameters were analyzed and the spermatic morphology was judged before and after treatment.

Results: In the treatment group, the total effective rate was 91.4% with a pregnant rate of 8.6% spouses, and the markedly effective rate was 65.7%. In the control group, the total effective rate was 85.7% with a pregnant rate of 5.7% spouses, and the markedly effective rate was 54.3%. Both the total effective rate and the markedly effective rate were higher in the treatment group than those in the control group, but with no significant statistical difference (P>0.05). The spermatic density, spermatic motility and the percentage of normal spermatic morphology were obviously enhanced in the two groups with the indexes in the treatment group superior to those in the control group (P<0.05 or P<0.01).

Conclusion: Shengjing Zhongzi Tang with obvious therapeutic effects for asthenospermia and oligozoospermia can significantly enhance the spermatic density and motility, and raise the pregnant rate in spouses.

Keywords: Shengjing Zhongzi Tang; asthenospermia and oligozoospermia; Wuzi Yanzong Wan

In the past 50 years, the incidence of infertility in the world has risen from 8%–10% to 12%–16%. Asthenospermia and oligozoospermia with complicated etiology are commonly seen in male infertility. Traditional Chinese medicine (TCM) is widely used in clinical treatment of male infertility with definite curative effect. As compared with Wuzi Yanzong Wan (五子衍宗丸 Pills for Reproduction), Shengjing Zhongzi Tang (生精种子汤 Decoction for Generating Sperms) may show significant therapeutic effects for asthenospermia and oligozoospermia. The present study conducted from January 2008 to December 2009 is reported as follows.

METHODS

General Data
All the 70 cases of asthenospermia and oligozoospermia were outpatients at the First Hospital Affiliated to Medical College of Xi’an Jiaotong University in the period from January 2008 to December 2009. They were randomly divided into a treatment group of 35 cases and a control group of 35 cases, with no statistical differences in illness course and age range between the two groups (P>0.05).

Case Selection
According to the WHO standards described in Laboratory Test Handbook on Interaction of Human Semen and Sperms with Cervical Mucus, the married couples live together for more than one year and have normal sexual life without contraception but with no pregnancy; gynecological examination shows that their wives have no infertility. Seminal routine test shows spermatic density <20×10⁶/mL or forward movement A+B grade<50% or A grade<25%.

Inclusive Criterion
The married male testers aged 23–46 conform to the standards for diagnosing asthenospermia and oligozoospermia. They are under treatment for 1–10 years and have normal sexual life in the past 6 months.

Exclusive Criterion
Men under 23 or over 46 years old. Their spouses have infertility. They have taken anti-tumor, anti-epilepsy or other drugs hindering generation of sperms. They have obstructed spermatic route, over second degree varicocele, atrophy of testis, angiocardiopathy, cerebrovascular disease, hepatopathy, nephrosis, disease of the hematopoietic system and other severe primary diseases. Infection of the reproductive system has not been cured, or infertility is caused by definite genetic factors.
Therapeutic Methods
Shengjing Zhongzi Tang used in the treatment group consisted of Shu Di Huang (Radix Rehmanniae Praeparata) 18 g, Shan Yao (Rhizoma Dioscoreae) 10 g, Zi He Che (Placenta Hominis) 10 g, Gui Zhi (Ramulus Cinnamomni) 10 g, Lu Rong (Cornu Cervi Pantotrichum) 6 g, Sheng Long Gu (Os Draconis) 12 g, Rou Cong Rong (Herba Cistanchis) 10 g, Tu Si Zi (Semen Cuscutae) 15 g, Huang Qi (Radix Astragali seu Hedysari) 30 g, Dang Gui (Radix Angelicae Sinensis) 12 g, Bai Zhu (Rhizoma Atractylodis Macrocephalae) 15 g and Yin Yang Huo (Herba Epimedii) 10 g. Three hundred mL decoction of a dose was orally taken every day, 150 mL a time in the morning and in the evening. Wuzi Yanzong Wan (60 g per bottle) used in the control group consisted of parched Tu Si Zi (Semen Cuscutae), Gou Qi Zi (Fructus Lycii), steamed Wu Wei Zi (Fructus Schisandrae), Fu Pen Zi (Fructus Rubi), salt-parched Che Qian Zi (Semen Plantaginis) and honey. The pill is produced by Beijing Tongrentang Pharmaceutical Factory (batch number Z11020241). One course of 3-month treatment was carried out in both the two groups.

Indexes Observed
1) Observation on safety: Adverse incidents were recorded by testing blood routine, urine routine and stool routine, electrocardiogram, and examinations of the hepatic and renal functions. 2) Pregnancy in spouses was determined. 3) Dynamic examination of the sperms: Semen routine was tested with an automatic analyzer for seminal parameters. 4) Examination of spermatic morphology and its normal rate: With the modified Ba’s staining methods, spermatic morphology was examined with a WLJY—9000 CASA static observation system (produced by Beijing Weili New Century Sci-tech Development Limited Company).

Criteria for Therapeutic Effects
1) Cured: spouse is conceived. 2) Markedly effective: the spermatic quantity and motility returned to normal after 3 months of treatment. 3) Improved: the spermatic grade was raised (for instance, from grade C to grade B), and the spermatic quantity increased. 4) Failed: No obvious improvement after treatment.

Statistical Analysis
The SPSS software package was used to analyze the results, \( \bar{X} \pm s \) to express the measurement data, paired t test to compare the data before and after treatment in the same group, variance analysis to compare the data between groups, and \( \chi^2 \) test to express enumeration data. \( P<0.05 \) means having statistical difference.

RESULTS
Comparison of the Spermatic Motility before and after Treatment in the Two Groups (Table 1)
The spermatic density, the rate of grade A and the rate of grade A+B were raised after treatment in the two groups (\( P<0.01 \)) with the effect in the treatment group superior to that of the control group (\( P<0.01 \)).

<table>
<thead>
<tr>
<th>Group</th>
<th>Cases</th>
<th>Spermatic density (×10⁶/mL)</th>
<th>Grade A rate (%)</th>
<th>Grade A+B rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment group</td>
<td>35</td>
<td>14.8±5.3</td>
<td>13.5±5.1</td>
<td>25.3±8.3</td>
</tr>
<tr>
<td>Before treatment</td>
<td></td>
<td>33.4±10.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>After treatment</td>
<td></td>
<td>25.4±8.8</td>
<td>56.7±12.8</td>
<td>( \wedge )</td>
</tr>
<tr>
<td>Control group</td>
<td>35</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Before treatment</td>
<td></td>
<td>14.9±5.6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>After treatment</td>
<td></td>
<td>27.1±9.6</td>
<td>-</td>
<td>50.6±10.7</td>
</tr>
</tbody>
</table>

Notes: \( ^{\wedge} \) \( P<0.01 \) as compared with the data in the same group before treatment; \( ^{\wedge} \) \( P<0.01 \) as compared with the data in the control group after treatment.

Comparison of Curative Effects in the Two Groups (Table 2)
The total effective rate in the treatment group was higher than that in the control group but with no statistical difference (\( P>0.05 \)), No obvious adverse reaction was found in all the patients who had orally taken drugs.

<table>
<thead>
<tr>
<th>Group</th>
<th>Cases</th>
<th>Conception</th>
<th>Markedly effective</th>
<th>Improved</th>
<th>Failed</th>
<th>Total effective rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment group</td>
<td>35</td>
<td>3 (8.57)</td>
<td>23 (65.72)</td>
<td>6 (17.15)</td>
<td>3 (8.56)</td>
<td>32 (91.43)</td>
</tr>
<tr>
<td>Control group</td>
<td>35</td>
<td>2 (5.71)</td>
<td>19 (54.30)</td>
<td>9 (25.72)</td>
<td>5 (14.28)</td>
<td>30 (85.70)</td>
</tr>
</tbody>
</table>
DISCUSSION

Male infertility with complicated etiology is mainly caused by the decline of spermatic motility. Internal organs are closely related to the kidney. “The kidney is the place of generating sperms.” The kidney as the congenital foundation stores essence and governs growth, development and reproduction. Abundant kidney-qi will make sperms full of motility. The decline of spermatic motility hinges on hypofunction of the kidney. Insufficient kidney-yang can not make the kidney-yin generate essence and qi, thus causing less sperms, declined spermatic motility and infertility. Deficient kidney-yin will reduce the sperm-generating substance. Therefore, in the treatment of asthenospermia and oligozoospermia, stress should be put on treating the kidney and regulating yin and yang of the kidney. The kidney stores the essence of the internal organs, especially food essence transformed by the spleen as the acquired foundation. Male infertility should be treated by reinforcing qi and strengthening the spleen to make the spleen full of power in transporting and transforming nutrients to generate the acquired essence and fully nourish the congenital essence.

In Shengjing Zhongzi Tang, Lu Rong (Cornu Cervi Pantotrichum) and Gui Zhi (Ramulus Cinnamomi) can warm and enrich the kidney-yang; Bai Zhu (Rhizoma Atractylodis Macrocephalae) and Shan Yao (Rhizoma Dioscoreae) can supplement and regulate qi, strengthen the spleen and regulate stomach; Sheng Long Gu (Os Draconis) and Zi He Che (Placenta Hominis) can foster yin and suppress sthenic yang; Huang Qi (Radix Astragali seu Hedysari) can reinforce qi and strengthen the spleen to make the spleen full of power in transporting and transforming nutrients to generate the acquired essence and fully nourish the congenital essence.

Wuzi Yanzong Wan, a famous recipe for male infertility, can nourish the kidney, replenish essence and supplement marrow. The recipe is most widely used in clinical treatment of male infertility. Furthermore, modern medical researches have also proved its effectiveness. Therefore, the recipe was used in the control group.

The process of conception is very complicated. Routine and morphological analysis of semen is of important significance for male infertility because spermatic function is closely related to the normal morphological structure of sperms. Asthenospermia and oligozoospermia are mainly caused by increase of the deformed sperms and reduction of the spermatic velocity. The present study demonstrates that Shengjing Zhongzi Tang may show very good curative effect for male infertility due to asthenospermia and oligozoospermia, which can not only enhance spermatic motility and increase spermatic quantity and density, but also raise the percentage of normal sperms, with better curative effect than that of Wuzi Yanzong Wan.

REFERENCES


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