

# **Analysis of 1,000 Tourette Syndrome Patients Treated with TCM**

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## **Abstract**

### **Purpose:**

The purpose of this clinical study is in using Chinese medicine to treat Tourette syndrome patients and hopefully increase Traditional Chinese Medicine's (TCM) important role in the international medical community. I also hope to offer resolution to the many school age patients, who are often mocked and involved in conflicts. These children, in taking western prescriptions, may be dazed and fall behind in their studies. Some are even forced to withdraw from school, and in extreme cases have fits of yelling, shaking, and self-injury.

In the February 3, 2010 *Taiwan XinSheng Newspaper*, there was an article on the difficulty in treating Tourette syndrome with western medication. A clinical doctor recommended, "Understanding ways to accept the disease are more important than medical treatment." In the absence of good medicine, parents, teachers, close friends, and social workers are asked

to come together in supporting and taking care of these patients.

In Ancient countries, Tourette syndrome patients were often mistakenly believed to be possessed by evil spirits or haunted. Today parents are often quick to give unproven medication, change the child's name, or make changes in the geomancy (fengshui, 風水). Children with severe symptoms may be physically disciplined by their parents, mistreated by religious officials, spend lots of money, or endure physical injury.

Tourette Syndrome is a neuropsychological disease. Four thousand years ago, the *HuangDi NeiJing Suwen: ZhiZhenYao* Chapter 《黃帝內經素問·至真要大論》 stated, “fire pathogen causes neuropsychological disease.” It also described “...all heat madness and convulsions are fire; all that are easily startled, fearful, as if they've lost their mind are also fire; all upward flushing are fire; all that are overly manic and dry are fire.” Three hundred years ago the *YiZhongJinJian* 《醫宗金鑑》 believed, “heat in the heart and excess of the liver may startle with fright and be open to wind.” It also describes, “the heart organ is the spirit, and thus heart illness shows as fright. Liver is wood, and thus liver illness shows as wind. If heat in the heart and excess of the liver may startle with fright and be open to wind, the wind and fright are simultaneously attacking, and therefore must be a wind-fright pattern (驚風之症)” . Over three hundred years ago the symptoms of Tourette Syndrome were recorded very clearly in the *YiZongJinBian: Pediatric Diagnosis Section* 《醫宗金鑑·幼科雜病心法》; “the eight types of wind-fright (JingFeng, 驚風八候): convulsion (搐), grasping (nuo, 搦), pulling (掣), tremors (顫), reverse (反), drawing in (yin, 引), scurry (竄), and sight (視). Convulsions are the flexion and extension of appendages, grasping is the

opening and closing of fingers, pulling is the simultaneous flutter of shoulders and head, tremors are the shaking of hands and feet, reversal is the movement of the body backwards, drawing in is the action of the hands like drawing a bow, scurrying is a stare as if angry, and sight is foggy lifeless eyes. This syndrome has both acute and chronic wind-fright (jingfeng), although fullness(實) and vacuity(虛) are indifferent; this is important to remember in treatment.”

It was not until 1885 when the French Doctor Gilles de la Tourette gave a case report of eight different types of motor neuron abnormalities, that the difference between this disease and ordinary illness and its difficult treatment was brought to light. From then on the disease was known as “Tourette’s syndrome” .

Treatment, and even suppression of symptoms, of Tourette syndrome is extremely difficult. Worldwide people have shown kindness and support in establishing foundations, supporting medical research, and counseling patients and their families all to help with their difficulties. For example the Tourette syndrome foundations of the United States, Canada, and England all have over a thirty-year history. The Tourette syndrome foundation of Taiwan has been established for eight years.

The effectiveness of treatment for Tourette syndrome using Western medicine pharmaceuticals is unstable. Taking Haloperidol, a common treatment choice, as an example. A small number of patients begin treatment with a 0.5mg dose and initially see results, but as soon as the dosage is cut back or medicine stopped the patient’s condition often worsens. After several years patients are often taking doses up 5mg at a time, taken morning and evening, two pills at a time. This is a serious

situation. Neurosurgery offers Deep Brain Stimulation (DBS) as a treatment option in controlling very serious conditions, but still nearly 30% or more of Tourette syndrome patients will not be cured by adulthood. A small number of patients with a serious condition will even become long-term psychiatric patients.

## **Materials and Methods:**

### **1. Clinical research without control group design**

In general, international research styles include a control group design. However, due to the difficulty in treating Tourette syndrome, if a control group in Chinese medicine research were to be established, it would be difficult and also oppose the rights of patients. Reasons include:

- (1) Tourette syndrome patients in Taiwan know that western medicine is ineffective. Taiwan only has a population of 23 million people, a small-congested place, where information travels fast. Therefore, all Tourette syndrome patients and their families know that there is no western medical treatment for the disease, and controlling it is also very difficult. So in the case of this research, if patients were to be put into a western medicine control group, both the doctors and the patients would be unwilling to cooperate.
- (2) No Tourette syndrome patients are willing to submit to long-term placebo treatment. In this clinical study of the patients who showed results, although a small portion showed improvement or were cured in a short period of time, most needed mid to long term treatment. It would

be impossible for patients to take placebo treatment for long term. No matter what type of blind study, if patients do not have some effect in the short term, they will not continue the treatment.

(3) Pre and post treatment diagnostic tests cannot be used for a control group design. Currently there are no abnormalities in blood serum tests of Tourette syndrome patients, and the over supply of Dopamine in the brain is still unconfirmed.

## **2. Main Research Methods**

(1) This study uses clinical visitation treatment method. A sample of 1000 cases, with sequential treatment, no group separation, no randomization, and no blind is performed.

(2) Treatment efficacy uses the Yale Global Tic Severity Scale (YGTSS) international standard evaluation. The number, frequency, strength, level of complication, and level of disruption are all used in evaluating the patient's tic disorder. Included is a maximum score of 25 for motor tics, a maximum score of 25 for vocal tics, and a maximum score of 50 for overall level of societal difficulty of the patient; cumulatively the maximum overall score for the most severe Tourette syndrome patient is 100. An overall score less than 25 is considered a mild case, a score of 25-50 a mild case, and a score over 50 a severe case.

(3) There was no laboratory research as part of this study. An experimental design for the study of Tourette syndrome is very difficult. Although an animal model for motor tics is possible, it is however impossible to design a model for various vocal tics and mental-cognitive

dysfunction.

- (4) The statistical analysis method of this research uses SPSS Statistics package, and uses the chi-square test to compare the inter group difference in effectiveness and complications. All experimental hypotheses have a testing level of 0.05. In cases of discontinued treatment or patients who didn't return, the Intention to treat analysis (ITT) is used. All use the highest level of data retention and randomization.
- (5) This research handles other factors, including Tourette syndrome patients confounding variables; like seasonal weather, personal life, emotional disturbance, congenital disease, simultaneous disease, sporadic disease, etc. All of this must be considered for the doctor to choose or adjust medication in treating these variables. For instance a patient may need treatment for motor tics, vocal tics, and psycho-emotional dysfunction, such as hallucinations, hitting their head, biting their tongue, smashing things, and injuring people. Various personal syndromes, like headaches, nosebleeds, rhinitis, mouth ulcers, high serum copper levels, sleep walking, and bed-wetting must also be treated.
- (6) Extension of treatment efficacy follow up in this research. Current clinical Chinese medical research reports showing treatment efficacy are often criticized. The reason for this is that generally the statistical analysis portion of the experimental design is performed after only 3 months. In this case, deduction and discourse on short-term statistical data of Tourette syndrome treatment efficacy is meaningless and often disputed by professionals.

## Results:

This clinical study gathered cases from August 2004 thru December 31, 2009. Included are 1000 Tourette syndrome patients, 829 male and 171 female. In the course of treatment with Chinese medicine, in order to avoid hazardous health effects, patients already taking long term and heavy dose psychiatric medications should not suddenly stop taking their medication. A “step ladder” approach to reducing medication is much safer. In the initial phase of treatment if the patient can safely stop use of all western medication, even though symptoms will not decrease, this is already a sign that Chinese medicine is effective.

There are many differing opinions on the Chinese medicine pattern diagnosis of Tourette syndrome. This researcher has categorized two types, the overactive liver yang pattern(肝陽上亢型)and the yin vacuity wind-stirring pattern(陰虛風動型). This researcher, however, also believes that treatment of severe overactive liver heat pattern is often similar to “exuberant yang(陽盛)”, “excessive yang(陽越)”, and “heat toxins brewing internally(熱毒內蘊)” patterns of treatment. For treatment of overactive liver heat pattern, the main treatments are additive compounds of Coptis Toxin Resolving Decoction (黃連解毒湯) and Sweeping Down Decoction (建瓴湯). For yin vacuity wind stirring patterns, treatments are ZhiBoDiHuang Decoction(知柏地黃湯) and Sweeping Down Decoction. If the patient also has organ dryness pattern the formulas Licorice, Wheat, and Jujube Decoction, and Pinellia and Magnolia Bark

Decoction(甘麥大棗湯、半夏厚朴湯) can be added. In this research there were 712 overactive liver heat pattern cases and 288 yin vacuity wind stirring pattern case.

Of the 1000 cases 16 patients were disqualified for central nervous system disease, such as: Huntington' s disease, Wilson' s disease, Epilepsy, brain tumor, and extra pyramidal symptoms. There were 36 patients disqualified for psychological disorders, such as: Obsessive-Compulsive Disorder, Autism, and Depression. Two patients (0.2%) were left off for not taking medication. There were 391 patients who did not complete a 30-day course of treatment and were without effectiveness were classified as withdrawals. The remaining 555 qualified patients were used in evaluating treatment efficacy. Clinical research results are as follows:

- (1)The 555 participants in the treatment efficacy analysis, by sex: Male 474(85.4%) Female 81 (14.6%).
- (2)One treatment cycle was 100 days, and the longest treatment lasted 10 cycles. Between each treatment cycle there was no clear difference in treatment efficacy, this indicates the lack of any correlation between treatment cycle and effectiveness.
- (3)A course of disease less than 20 years was separated into five years of age groupings, and a course of disease over 20 years was separated into ten years of age groupings. There was no remarkable difference between these groups' treatment efficacy. This indicates that course of disease and treatment efficacy are not correlated.
- (4)The most common age of disease onset was 7-12 years of age, 60.36%. Treatment was most effective for patients 0-7 years of age at time of onset.



(5) The pre and post treatment YGTSS and chi-square test both clearly showed a difference. This indicates that treatment of motor tic disorders with Chinese medicine gives improvement.

(6) In this research there were 411 cases of overactive liver yang pattern and 144 cases of yin vacuity wind stirring pattern. The rate of improvement in overactive liver yang cases post treatment was 93.43%, yin vacuity wind stirring cases, 90.28%. There is no remarkable difference between the groups. This indicates that Chinese medicine pattern identification treatment can improve the overall seriousness level of Tourette syndrome patients.

(7) Assessment of Tourette syndrome tic severity is separated into seven types. Chinese medicine's effectiveness between these types is clearly different. The main results are: (a) evaluation of the overall extent of injury, (b) frequency of motor tics, (c) motor tic impact on lifestyle and behavior, (d) complexity of tics, and (e) strength of motor tics have great effectiveness.

(8) YGTSS Results:

- a. Total cure (reduction rate  $\geq 95\%$ ): 14 patients (2.5%) .
- b. Clear effectiveness (reduction rate  $\geq 66\%$ ,  $< 95\%$ ): 331 patients (59.7%) .
- c. Effectiveness (reduction rate  $\geq 33\%$ ,  $< 66\%$ ): 195 patients (35.1%) .
- d. Ineffective (reduction rate  $< 33\%$ ): 15 patients (2.7%) .

- e. Overall efficacy rate (number of total cure+number of clear effectiveness+number of effectiveness): 540 patients (97.3%).

## Conclusion

Conclusions obtained from this research are as follows:

- (1)The overall efficacy rate for treatment of Tourette syndrome patients was 97.3%. This clearly indicates that Chinese medicine can be an effective treatment option for Tourette syndrome.
- (2)Chinese medicine treatment efficacy is independent of course of treatment.
- (3)Chinese medicine treatment efficacy is independent of course of disease. It is an effective treatment for patients at any stage of disease.
- (4)Chinese medicine treatment is more effective for younger age of onset patients.
- (5)Chinese medicine effectively treats and gives improvement to motor tic disorders.
- (6)Chinese medicine has very similar positive effects on both types of disease patterns.
- (7)Chinese medicine shows effectiveness on overall extent of injury, frequency of motor tics, motor tic impact on lifestyle and behavior, complexity of tics, and strength of tics.

**Keywords:** *Jing-Feng, Tic, Tourette syndrome.*