

Understanding and Exploration of Traditional Chinese Medicine in Treating Pediatric Autism Spectrum Disorders

Xinyu Fu^{1,a} and Hujie Song^{2,b*}

¹*Shaanxi University of Traditional Chinese Medicine, Xi'an, Shaanxi, China*

²*Xi'an Hospital of Chinese Medicine and Brain Diseases, Affiliated with Shaanxi University of Chinese Medicine, Xi'an, Shaanxi, China*

^a1572029056@qq.com, ^b15769107568@139.com

*corresponding author

Keywords: Traditional Chinese Medicine Treatment, Autism Spectrum Disorder, Understanding and Exploration

Abstract: In recent years, autism spectrum disorder, as a type of mental development disorder, has received increasing attention from scholars. This article summarizes some effective treatment methods of traditional Chinese medicine in the treatment of this disease in recent years, in order to understand the new treatment ideas of frontline doctors in clinical practice

1. Ancient Physicians' Understanding of This Disease

Tracing back to the research and discovery of this disease, there are similar records of autism in ancient Chinese books. For example, "Yan Xiaozhong's" Yan Family Prescriptions for Children "proposed that children with insufficient heart energy cannot speak at the age of five; the Song Dynasty's" Taiping Shenghui Formula "proposed to treat children with insufficient heart energy, weak tongue, and delayed speech; the Qing Dynasty's" Medical Jinjian "proposed that children with delayed speech are often due to weak parents' qi and blood, congenital kidney deficiency, and difficulty in walking, uneven teeth, and unable to sit steadily after giving birth to their children. Although there is no clear record of the disease name for autism, there are many records of some symptoms of the disease, and some symptoms in ancient books are very similar to autism, and there are many books that also have prescription records. For example, in the "Dialectical Records", a type of dementia is described, whose clinical manifestation is "silent all day long, without knowing good or evil..." According to the above literature, According to some similar clinical manifestations, autism spectrum disorders can be classified into categories such as "child fainting", "delayed

speech", and "fetal weakness" [1].

2. Understanding of Modern Medicine

Many traditional Chinese medicine experts believe that the main location of ASD is in the brain and is closely related to dysfunction of the heart, liver, spleen, kidney and other organs. Professor Liu Xiaoping [2] believes that ASD is caused by factors such as fetal weakness, fetal toxicity, improper care, and emotional imbalance, resulting in deficiency of essence and blood, loss of consciousness and nourishment, internal generation of phlegm turbidity, obscuration of the clearing of the orifices or hyperactivity of the heart and liver, and confusion of the mind. It is a syndrome of deficiency and excess. Professor Shi Zhenggang [3] believes that the main organs affected by this disease are the liver and spleen, which are closely related to the gallbladder, heart, and stomach. The viewpoint of "liver and spleen stagnation as the foundation, and wind, fire, phlegm, and heat as the standard" was proposed for the pathogenesis of this disease. It is believed that the spleen and liver are the key to treating this disease, and the treatment method of nourishing the spleen and regulating the liver is summarized. Professor Lv Ying [4] practiced the core academic idea of the Li Kegou School's "Qi Yuan Theory" and proposed a treatment method of "benefiting wood and carrying soil" based on the principle of "all diseases are inherent in Qi and disease". Based on this theoretical method, prescriptions were formulated to enhance the "root qi, middle qi, and sprouting" of the children, further improving the overall condition of the children.

Traditional Chinese medicine emphasizes a holistic approach and differentiation of symptoms and treatment, treating children with ASD as a whole and treating them based on their physical constitution and clinical symptoms. [5] The clinical manifestations of this disease are not just one manifestation. Children with ASD often have comorbidities such as gastrointestinal disorders, sleep difficulties, and cognitive disorders. Therefore, traditional Chinese medicine has a macro advantage in the treatment concept of this disease.

3. Progress in Traditional Chinese Medicine Treatment

Acupuncture and moxibustion, as an effective means of traditional Chinese medicine, has been widely used in clinical practice in recent years. It is also easy to be accepted by parents and children because of its non-invasive, convenient, and economic benefits, which enables children with ASD to receive scientific and standardized treatment at an early stage, thus greatly reducing the burden on families and society.

3.1 Acupuncture and Moxibustion Treatment

Chen Dong [6] and others randomly divided 60 children with autism spectrum disorders into two groups: the acupuncture group and the rehabilitation group. The rehabilitation group adopted the method of education and rehabilitation training. The acupuncture rehabilitation group added the acupuncture method of "regulating the intestines and regulating the mind" on the basis of the former. This method used four spirit acupuncture, three wisdom acupuncture, three speech areas and other positions for acupuncture. The two groups were treated every other day, three times a week, and both groups were treated for three consecutive months. After treatment, both groups of children showed varying degrees of improvement in their scores and scales. The acupuncture rehabilitation group had a higher rate of change in scores before and after treatment compared to the acupuncture group, and the difference was statistically significant. This treatment method is indeed effective and can be promoted and used in clinical practice.

Guo Kai et al. [7] randomly divided 60 children who met the diagnostic criteria into a control

group and a study group of 30 cases. The control group received rehabilitation training, while the study group received acupuncture and acupoint injection treatment on the basis of the control group. After three months of treatment, the clinical efficacy was observed. After three months of treatment, the evaluation scales of sensory ability and communication ability in the observation group's ABC score were significantly reduced, This indicates that the acupuncture method has significant clinical effects in improving gastrointestinal diseases in children, and is worth promoting in clinical practice.

Bai Jingjing [8] and others randomly divided 60 children into the control group and the observation group by using head acupuncture and moxibustion according to the point of view that the disease is located in the brain in traditional Chinese medicine. The former used music rehabilitation training, while the observation group added head point penetration acupuncture on the basis of the former. According to the frequency of 1 time/day and 6 times/week, the total duration was 12 weeks. The results showed that the scores of CARS CSHQ scale in both groups increased significantly after treatment, And it indicates that this acupuncture method has significant therapeutic effects on improving sleep and regulating emotions in children. After years of clinical experimental research, scholars such as Hueng et al. [9] have found that scalp acupuncture has a better clinical effect on improving symptoms in younger or earlier onset children than in older children. Therefore, once the disease is diagnosed in clinical practice, acupuncture treatment should be carried out as soon as possible to improve its comorbidity.

Wang Jing et al. [10] randomly divided 80 children with childhood autism into a control group and an observation group of 40 cases each. Both groups received traditional rehabilitation training, and the observation group received five treatments of "Jin San Needle" scalp acupuncture, including four divine needles, three brain needles, three wisdom needles, three temporal needles, and three left upper temporal needles. The operations were performed once a day and five times a week. After three months of continuous treatment, CARS, Gesell, PEP-3 Peds QLTM4.0 and other scales have achieved varying degrees of improvement, indicating that this acupuncture therapy plays a great advantage in alleviating clinical symptoms and delaying the development of the condition in children.

3.2 Medication

Zhang Qian et al. [11] used a random number method to divide 64 children with heart spleen deficiency type ASD into a control group and an observation group of 32 cases each. The control group received routine rehabilitation training, while the observation group added or subtracted Guipi Tang on top of the former. After continuous treatment for 3 months, the total effective rate of the observation group was higher than that of the control group, and each evaluation scale showed varying degrees of improvement. Guipi Tang has a significant therapeutic effect on children with heart spleen deficiency type ASD, which is worthy of clinical promotion.

Shi Qianxin et al. [12] used the treatment principle of "tonifying the kidney and filling the essence, clearing phlegm and opening the orifices" to treat children with ASD. 35 children with ASD who met the diagnosis of the disease and the type of essence deficiency and phlegm disturbance were treated with tonifying the kidney and clearing phlegm decoction. After 12 weeks of continuous treatment, the therapeutic effect was statistically analyzed. The results showed significant differences before and after treatment, and no abnormalities were found in various biochemical indicators after treatment, indicating high safety, It can significantly alleviate clinical symptoms, has a definite therapeutic effect, and is worthy of clinical application.

Zhao Ningxia et al. [13] clinically noticed the prominent problem of gastrointestinal diseases in children with this disease and used Zengye Chengqi Tang to treat constipation in children. Some

studies have shown that changes in the microbiota gut brain axis may be related to neurodevelopmental disorders [14] Sui Zhao Ningxia's team alleviated the intestinal problems of children by changing their gut microbiota, further alleviating their clinical manifestations. Zengye Chengqi Tang has the effects of nourishing yin, promoting qi, nourishing blood, and moistening the intestines, and has a prominent effect on improving the digestive tract problems of children. After three consecutive courses of treatment, the total effective rate of this decoction reached 29%, with a significant therapeutic effect.

3.3. Massage

Massage, as a non-invasive and cost-effective treatment method, is currently widely used in clinical practice. Zhang Jiwei et al. [15] randomly divided 60 children with ASD who met the inclusion criteria into an observation group and a control group with 30 cases each, excluding 9 cases of detachment. 26 cases were included in the study observation group and 25 cases in the control group. The control group received acupuncture and rehabilitation training, while the observation group received spleen strengthening and stomach massage therapy on the basis of the control group. The specific acupoint selection of massage is "rubbing the abdomen, pressing and kneading the Zusanli and Zhongwan acupoints, and clearing and tonifying the spleen". After 6 consecutive courses of treatment (4 weeks as 1 course), each scoring scale has improved to varying degrees, proving that this massage therapy has a therapeutic effect on improving its clinical symptoms and is worthy of clinical application and promotion.

4. Summary

Individuals with autism spectrum disorder (ASD) typically exhibit core symptoms such as social communication deficits, repetition, and stereotypical behavior (American Psychiatric Association, 2013). Among them, the social communication deficits of individuals with ASD are more closely related to their daily lives. [16] With the further development of contemporary society and modern economy, the public has a deeper understanding of this disease, which is changing from a rare lesion to a common disease. Its clinical manifestations are diverse, and some children still have intellectual and cognitive developmental delays. China currently lacks nationwide ASD screening, especially for preschool children. Early screening for children with ASD is imperative [17], and the pathogenesis of autism spectrum disorders is complex and still unknown to this day. Further exploration of the pathogenesis and clinical efficacy of this disease is a long and arduous task.

Funding

This work was supported by Shaanxi administration of Traditional Chinese Medicine foundation "Innovative Traditional Chinese Medicine Preparations and Devices Incubation Platform for Clinical Urgent ASD Treatment.

Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

References

- [1] Zhao Ningxia, Du Xiaogang, Song Hujie, et al. Application of Traditional Chinese Medicine Clinical Pathway in Children with Autism Spectrum Disorders. *Chinese Journal of Medicine*, 2020,22 (5): 305-309
- [2] Liu Pan, Jin Xuan, Zhao Ningxia, et al. Liu Xiaoping's understanding of the etiology and pathogenesis of autism spectrum disorders in traditional Chinese medicine . *Chinese Journal of Traditional Chinese Medicine*, 2022,37 (04): 1999-2001
- [3] Dang Qingzhong Summary of Professor Shi Zhenggang's Experience in Treating Childhood Autism Spectrum Disorders and Study on the Regularity of Medication . *Gansu University of Traditional Chinese Medicine*, 2022. DOI: 10.27026/d.cnki. ggszc. 2021.000163
- [4] Xu Shan Summary of Professor Lv Ying's Experience in Treating Autism Spectrum Disorders with the Method of "Benefiting Soil and Loading Wood" and Research on Network Pharmacology . *Southern Medical University*, 2023
- [5] Liu Huituan Clinical Study on the Treatment of Childhood Autism with Regulating Mind Acupuncture as the Main Therapy . *Guangzhou University of Traditional Chinese Medicine*, 2020. DOI: 10.27044/d. cnki. ggzu.2019.001157
- [6] Chen Dong, Bao Chao, Li Jianbing, etc Research on the effect of acupuncture with the method of "regulating the intestines and regulating the spirit" on the behavior and intestinal function of children with autism spectrum disorders . *Clinical Journal of acupuncture and moxibustion*, 2023,39 (09): 49-53. DOI: 10.19917/j.cnki.1005-0779.023177
- [7] Guo Kai, Wang Ru, Zhao Ningxia, et al. Clinical efficacy observation of acupuncture combined with acupoint injection of calf serum deproteinized injection in the treatment of autism spectrum disorders . *Guizhou Medical Journal*, 2023,47 (08): 1181-1183
- [8] Bai Jingjing The effect of scalp cluster needling combined with early intervention in Denver mode on core symptoms in children with autism spectrum disorders . *Heilongjiang University of Traditional Chinese Medicine*, 2023. DOI: 10.27127/d.cnki.ghlzu.2023.000025
- [9] YAU C H, IP C L, CHAU Y Y. The therapeutic effect of scalp acupuncture on natal autism and regressive autism. *Chin Med*, 2018,13:30.
- [10] Wang Jing, Mei Xuerui, Li Wenxia, etc Clinical study on the combination of "Jin San Needle" scalp acupuncture and five therapies with rehabilitation training for the treatment of childhood autism . *Journal of Practical Traditional Chinese Medicine*, 2023,39 (02): 379-381
- [11] Zhang Qian, Guo Kai, Zhao Ningxia. Analysis of the therapeutic effect of Guipi Tang on children with autism spectrum disorder of heart and spleen deficiency type . *Chinese Medical Journal*, 2023,25 (02): 182-186
- [12] Shi Xixin, Wang Jun, Yan Haihong, Rong Ping, Ma Rong. Modified Yishen Huotan Tang for the Treatment of 35 Cases of Children with Autism Spectrum Disorder with Essence Deficiency and Phlegm Disturbance Syndrome . *Journal of Traditional Chinese Medicine Pediatrics*. 2022 (05): 47-51
- [13] Zhao Ningxia, Jiao Wentao, Zhang Qian, et al. Clinical observation on the treatment of functional constipation in children with autism spectrum disorders using Zengye Chengqi decoction combined with acupuncture . *Chinese Medical Journal*, 2021,23 (11): 801-804
- [14] Zurita MF, Cárdenas PA, Sandoval ME, et al. Analysis of gut microbiome, nutrition and immune status in autism spectrum disorder: a case-control study in Ecuador. *Gut Microbes*, 2020,11(3):453-464.

- [15] Zhang Jiwei, Xu Cuixiang, Shen Wenbin. *Clinical study on the treatment of gastrointestinal symptoms in autism spectrum disorders with spleen strengthening and stomach massage . Guangming Traditional Chinese Medicine*, 2023,38 (16): 3160-3163
- [16] He Jianqing, Liu Tongwei, Bao Chenye, et al. *Social actions in individuals with autism spectrum disorders: a predictive processing perspective. Applied Psychology: 1-17 [2023-09-25]*
- [17] Zhao Yanan, Li Zhiwen, Li Lin, et al. *Current status of screening for autism spectrum disorders in children aged 0-6 in China . Chinese Journal of Reproductive Health*, 2023,34 (05): 423-428.