

Research Progress of Traditional Chinese Medicine in the Treatment of Post-Stroke Depression

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Abstract: Stroke is one of the public health problems widely concerned by many countries in the modern world. It is a kind of cerebrovascular disease with high risk. Most patients will have sequelae after stroke, such as hemiplegia, speech impairment, limited walking, etc. Depression is also one of the common sequelae. Patients are mainly characterized by low mood, unwilling to communicate with others, insomnia, and even negative thoughts of suicide. Post-stroke depression has adverse effects on patients and society, which greatly affects the normal life and work of patients and affects social stability. Western medicine treatment of post-stroke depression is mainly based on oral drugs, but it will bring many adverse reactions, such as drug resistance, dependence, and drug toxicity. Long-term medication treatment brings certain economic pressure. Traditional Chinese medicine (TCM) is a medicine with rich experience accumulated for a long time in China. It has a positive effect on the treatment of stroke and post-stroke depression. It has the characteristics of simplicity, low price and low toxicity, and is widely accepted by society and patients. There are various treatment methods of traditional Chinese medicine. This article reviews a large number of clinical observations to clarify the effectiveness of traditional Chinese medicine in the treatment of post-stroke depression.

Keywords: Post-stroke depression, TCM treatment, Research progress, Review

Stroke refers to stroke, which is divided into ischemic stroke and hemorrhagic stroke. It is a disease of brain tissue damage caused by rupture or obstruction of brain blood vessels^[1]. Studies have shown that China is one of the countries with the most prominent risk factors for stroke in the world^[2]. The lifetime risk of stroke in China is 39.9%, ranking first in the world^[3]. Post-stroke patients often have sequelae, such as physical activity disorders, language disorders, emotional disorders, etc^[4]. Post-stroke depression is one of the common sequelae after stroke, with an incidence of 18% ~ 61%^[5]. Post-stroke depression seriously affects the physical and psychological recovery of stroke patients and becomes an obstacle to their normal work and life. Western medicine uses antidepressants to treat post-stroke depression, but there are many side effects of the drug, which is not conducive to long-term medication treatment. Patients have a certain degree of exclusion from Western medicine treatment. Stroke is called 'stroke' in traditional Chinese medicine, and post-stroke depression is considered to be caused by depression caused by stroke. It is a disease caused by emotional disorders due to liver loss caused by yin and yang disorders of zang-fu organs caused by stroke^[6]. Traditional Chinese medicine has a long history of thousands of years of development, and has rich experience and understanding in the treatment of diseases. For post-stroke depression, acupuncture, traditional Chinese medicine, acupoint application, auricular points and other treatment methods have achieved remarkable results. Through a large number of literature, this paper expounds the research progress of Traditional Chinese medicine in the treatment of post-stroke depression from four treatment methods of acupuncture, traditional Chinese medicine, moxibustion and integrated traditional Chinese and Western medicine.

1. Understanding of TCM and Western Medicine on Post Stroke Depression

Stroke belongs to the category of stroke in traditional Chinese medicine, which is mainly manifested in sudden fainting, unconscious personnel, sudden mouth and eye deviation, sudden unclear speech and so on^[7]. The word "stroke" first appeared in the book "Huangdi Neijing" which referred to stroke as "partial dry" and "thin jue"^[8]. Traditional Chinese medicine believes that the causes of stroke include excessive labor, improper diet, and visceral deficiency. The pathogenesis includes deficiency of the body, exuberant liver fire, internal movement of liver wind, phlegm turbidity, qi stagnation and blood stasis^[9].

Traditional Chinese medicine believes that stroke is a stroke symptom caused by the imbalance of yin and yang in the viscera. Zhang Zhongjing put forward in the 'synopsis of the Golden Chamber' that 'the wind is a disease, when the body is incomplete, or the arm is incomplete, this is arthralgia, the pulse is small and the number is small, and the stroke is caused' indicating that there will be sequelae after stroke. Traditional Chinese medicine believes that the sequelae of stroke are caused by the deficiency of qi and blood after stroke and the damage of the five internal organs. Post-stroke depression belongs to the category of 'depression' in traditional Chinese medicine and is an emotional disease. The main site of the disease is the brain, which is closely related to the liver, heart and spleen. Post-stroke depression is a manifestation of qi and viscera damage. To treat post-stroke depression, it is necessary to sort out qi and adjust viscera and yin and yang.

Western medicine believes that stroke is a disease caused by cerebrovascular disease, in which cerebrovascular ischemia is one of the most common causes. This type of stroke is called ischemic stroke. Stroke is considered to be related to neuronal necrosis, apoptosis, autophagy, etc. Ferroptosis is one of the emerging mechanisms leading to cerebrovascular disease^[10]. Western medicine believes that stroke patients are considered to be sequelae of stroke if they still have limited physical activity, limited speech, and poor sleep after 6 months. Post-stroke depression is also one of the sequelae. At present, there are two pathogenesis of post-stroke depression, which are neurobiological mechanism and social physiological mechanism. The changes of neurotransmitters and social psychology such as 5-hydroxytryptamine (5-HT), norepinephrine (NE) and acetylcholine (ACh) are closely related to the occurrence of post-stroke depression^[11]. Western medicine believes that the treatment of stroke sequelae is drug therapy, psychological self-treatment and psychological intervention^[12], in the course of treatment to control the development of risk factors, active treatment of primary diseases and post-stroke depression.

Therefore, it can be seen that both traditional Chinese medicine and western medicine have unique understanding and treatment methods for post-stroke depression. In the treatment, western medicine has great side effects and high recurrence rate, but the treatment effect of traditional Chinese medicine is long-term and stable. Starting from the basic theory of traditional Chinese medicine, patients are treated as a whole and better treatment effect is achieved Traditional Chinese medicine treatment.

2. Chinese medicine treatment of post-stroke depression method

2.1 Acupuncture treatment of post-stroke depression

Acupuncture is one of the characteristic methods of traditional Chinese medicine treatment. Acupuncture at acupoints plays a role in relaxing meridians and activating collaterals and regulating yin and yang. Sun et al^[13] collected 120 patients with post-stroke depression and divided them into treatment group and control group for treatment. The treatment group was treated with acupuncture at Wuxin point and Anshen point on the basis of western medicine, while the control group was only treated with western medicine. After two months of treatment, the patient's sleep was improved, and depression and anxiety were relieved. Liu Lanqing et al.^[14] used the parallel needling method to acupuncture the patients 'bilateral mental and emotional areas, bilateral parafrontal 1 line and parafrontal 2 line. At the same time, after oral administration of paroxetine hydrochloride tablets for 2 months, the patients' self-rating depression scale score and daily living activity scale score were significantly compared with those before treatment, indicating that the parallel needling method had a significant therapeutic effect on post-stroke depression. Jiang Meirong^[15] used eye acupuncture combined with heat-sensitive moxibustion to treat 31 patients with post-stroke depression of liver qi stagnation type. The results showed that the depressive symptoms of the patients were alleviated, and the levels of norepinephrine and interleukin in serum were significantly changed compared with those before treatment. The effective rate of treatment was 97.30%. Zuo Yaochen^[16] In order to prove the effectiveness of acupuncture in the treatment of post-stroke depression, electroacupuncture was used to acupuncture the patient's pericardium meridian points. After the treatment, it was found that the levels of corticotropin and cortisol in the patient's blood decreased, and the patient's depression score also decreased, which proved that electroacupuncture at the pericardium meridian points can improve depression. On the basis of conventional treatment of cerebrovascular diseases, Yang Jing^[17] found that the stroke scale score of patients was significantly improved after 28 days of treatment by acupuncture at Baihui, Yintang, Shenmen and other acupoints of patients with post-stroke depression with Tongdu Bushen acupuncture method, which could promote the recovery of sleep disorders and emotional disorders. Liu Shuying^[18] in order to prove the therapeutic effect of acupuncture on post-stroke depression, patients with post-stroke depression were treated with acupuncture with awakening and closing. The final results showed that the neurokines, mental state, and

sleep treatment and pre-treatment comparisons of 43 patients with post-stroke depression treated with this method had significant improvements in the comparison between treatment and pre-treatment, and had a positive effect on serum levels of multiple cytokines. It can be concluded that acupuncture treatment for patients with depression after stroke can improve the symptoms of depression to a certain extent and promote the return to normal sleep.

2.2 Chinese medicine treatment of post-stroke depression

Traditional Chinese medicine is one of the most representative treatment methods of traditional Chinese medicine. It is made into decoction or granules and powder. It can play a role in promoting blood circulation and removing blood stasis and regulating human organs. Chen Yanfang et al.^[19] implemented oral Zhuyu Xiaoyao Decoction and acupuncture at Siguan points on the basis of routine treatment for patients with post-stroke depression. After one month of treatment, the adverse reactions of the patients were not significantly increased compared with the conventional treatment group. The total effective rate reached 95.0%, which was much higher than the total effective rate of conventional treatment. Du Yan et al.^[20] used self-made decoction (bupleurum, albizia bark, rhizoma cyperi, etc.) to treat patients with post-stroke depression, and then combined with auricular point therapy. After the treatment, the patient's depressive state was significantly improved, and the neurological function was restored, indicating that Chinese medicine is effective in treating post-stroke depression. Zheng Wenxu et al.^[21] used Shugan Huoxue Jieyu Decoction to treat patients with post-stroke depression. After treatment, the stroke scale score, daily living ability scale score and depression scale score of the patients were improved, and the neurotransmitters of the patients were also restored. Sun Mingliang^[22] used Yangxin Jianpi Decoction combined with Xingnao Tiaoshen acupuncture to treat patients with moderate to severe depression after stroke. After treatment, the cerebral blood flow perfusion level of patients increased compared with that before treatment, and gradually returned to normal nerve function. In order to prove the therapeutic effect of traditional Chinese medicine on patients with post-stroke depression, Shi et al.^[23] chose Buyang Huanwu Decoction and Chaihu Longgu Muli Decoction to treat 45 patients with post-stroke depression. The treatment results showed that the patient's depression was improved. You Di et al.^[24] used Huayu Wendan Decoction to treat post-stroke depression patients with wind-phlegm-fire hyperactivity. After four weeks, the patient's related clinical symptoms improved and the quality of life improved. In the study of these traditional Chinese medicines in the treatment of post-stroke depression, it is shown that traditional Chinese medicine can promote the recovery of post-stroke depression by regulating qi and blood and viscera yin and yang.

2.3 Moxibustion treatment of post-stroke depression

Moxibustion is a treatment method that warms the meridians, strengthens the body and dispels evils by gradually burning moxa sticks or moxa wool on human acupoints. He Dongmei et al.^[25] treated patients with mild depression after stroke by moxibustion at Shenmen, Zusanli, Hegu and other acupoints on the basis of a certain time and a certain syndrome type. After treatment, the depression scale score and EEG alpha wave of the patients were improved, indicating that the depressive symptoms of the patients were alleviated. Qu Fengjuan^[26] moxibustion Baihui, Sishencong, Taichong and other acupuncture points, moxibustion while the basic rehabilitation exercise therapy, basic drug therapy and oral sertraline hydrochloride treatment. After four weeks of treatment, the depressive symptoms of the patients were alleviated and the daily living ability was improved. Zhai Xiaohui^[27] and others treated 24 patients with post-stroke depression with moxibustion at bilateral Zusanli points combined with emotional nursing. After treatment, the researchers found that the patient's Hamilton depression scale score decreased, while the stroke scale score and daily life ability score index increased. It shows that moxibustion at Zusanli can play a therapeutic role in patients with post-stroke depression. Cao et al.^[28] randomly divided 98 patients with post-stroke depression into two groups. One group was treated with warm acupuncture at bilateral Yongquan points combined with behavioral stimulation therapy. After treatment, the Pittsburgh Rehabilitation Participation Scale score increased, and the patient's stress perception was relieved. Zhang Huadong^[29] treated patients with post-stroke depression of qi stagnation and fire type with four-flower moxibustion combined with Shugan Xiehuo decoction. After treatment, the TCM syndrome score, depression and daily life status of the patients were greatly improved compared with those before treatment. Zhang Ye et al.^[30] used scalp acupuncture combined with massage to treat depression and sleep symptoms in patients with post-stroke spasm. The results showed that the sleep quality of patients after treatment was improved, the depression was relieved, and the physical activity was more flexible than before. It is concluded that the effect of moxibustion on the human body can treat post-stroke depression.

2.4 Integrative treatment of post-stroke depression

Traditional Chinese medicine and Western medicine are valuable medical wealth of modern human beings. Traditional Chinese medicine and Western medicine have their own advantages, but there are still some shortcomings. The effective combination of traditional Chinese medicine and Western medicine can improve the efficiency of treatment and reduce the physiological and psychological pain of patients. Shan Yonglin et al.^[31] collected 40 patients with post-stroke depression and treated them with Qishenhuangwu capsule and transcranial magnetic stimulation. After treatment, the levels of serum substance P and neuron-specific enolase decreased, and the depression status improved, indicating that the combination of traditional Chinese medicine and Western medicine can treat the disease. Ji Qiangze^[32] found that Baihe Zhimu Decoction combined with EEG bionic electrical stimulator can treat patients with post-stroke depression. After treatment with this method, the whole blood viscosity high shear and whole blood viscosity low shear were improved, and the effective rate of treatment was as high as 95.65%. Chang Feng^[33] divided 90 patients with post-stroke depression into two groups. One group was treated with oral fluoxetine capsules, and the other group was treated with acupoint moxibustion combined with fluoxetine capsules. After completing the treatment course, the results showed that the level of neurotransmitters in patients with acupoint moxibustion combined with fluoxetine capsules was improved and the safety was high. Bian Weiyu et al.^[34] used Jiawei Buyang Huanwu Decoction combined with transcranial magnetic stimulation to treat 40 patients with post-stroke depression. After treatment, they found that the levels of interleukin-6, norepinephrine and tumor necrosis factor in the serum of patients increased, indicating that this treatment method has anti-inflammatory effects. And the patient's depression was reduced. In order to prove the therapeutic effect of integrated traditional Chinese and Western medicine on post-stroke depression, Ma Yuanxin et al.^[35] chose the method of paroxetine hydrochloride tablets combined with acupuncture treatment. The treatment results showed that the anxiety and depression of patients were improved, and the effective rate of treatment was 100%, which was much higher than that of patients taking western medicine alone. Zeng Jichao^[36] used Ganmai Dazao Decoction combined with venlafaxine to treat patients with depression after stroke. After treatment, the clinical symptom score of the patients decreased, the neurological deficit gradually recovered, and the adverse reactions during the treatment were less. On the whole, the combination of traditional Chinese and Western medicine can improve the level of treatment, significantly improve the symptoms of patients, less adverse reactions.

3. Summary

Stroke is one of the common diseases in clinical practice. It has the characteristics of high mortality, high disability rate and high incidence^[37]. Many patients have a certain degree of sequelae, which may lead to cognitive impairment, physical activity disorder, emotional disorder and so on. In China, there are more than 7 million stroke patients each year^[38]. Stroke can bring physical and psychological pain to patients, and it is also a heavy pressure on family and society. Therefore, how to reduce the physical and psychological pain of patients with post-stroke depression is one of the urgent problems to be solved in modern medicine. Western medicine for the treatment of post-stroke depression system, but the side effects are difficult to avoid, the patient's acceptance is not high. Traditional Chinese medicine is a valuable asset that has been circulating in China for thousands of years. It has accumulated a lot of treatment experience. Compared with western medicine, it has the characteristics of small side effects, low price and high patient acceptance. Traditional Chinese medicine has achieved good clinical results in the treatment of post-stroke depression with acupuncture, traditional Chinese medicine, auricular points and other methods, and the promotion is also very high. However, there is a lack of a large number of clinical and experimental verification at this stage, which requires Chinese medicine scholars to pay more efforts to study and treat post-stroke depression.

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