

The Treatment of Aggressive Behavior of Dementia Based on the Theory of “Internal Heat”

Caishan Huang^{1,a}, Jingqing Hu^{2,b,*}

¹*The First School of Clinical Medicine, Shaanxi University of Traditional Chinese Medicine, Xianyang, Shaanxi, China*

²*Guang'anmen Hospital, China Academy of Traditional Chinese Medicine, Beijing, China*

^a18875204388@163.com, ^bgcp306@126.com

^{*}Corresponding author

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Abstract: Agitated behavior in dementia not only aggravates the physical, mental and economic burdens of the patient's family, but also threatens the personal safety of the patient and the people around him/her. Its pathogenesis is not yet clear, and antipsychotic drugs are often used when the agitated symptoms are severe, dangerous or cause significant pain to the patient. However, such drugs can significantly increase the probability of cardiovascular accidents and sudden death in dementia patients, and are prone to drug dependence. More and more patients and their families are looking to Chinese medicine for help. Researcher Hu Jingqing has been engaged in the clinical diagnosis and treatment of geriatric diseases for many years, and has much experience in the theory of “endogenous fire and heat”. In this paper, we will share Hu Jingqing's experience in treating agitated behavior of dementia patients based on the theory of “internal fire and heat”, in order to improve the agitated behavior of dementia patients by combining the advantages of Chinese and Western medicines with small doses of Western medicines.

1. Introduction

According to the World Health Organization, at present, the number of dementia patients worldwide has exceeded 55 million, and there are nearly 10 million new cases every year ^[1]. Another study shows that 80% to 90% of dementia patients have agitated behavior. Radicalization refers to behavioral disorders that occur in people with dementia, are associated with emotional distress, and are proven to cause excessive disability not only attributable to mental, medical, or physical ^[2], including pacing, gesturing, swearing, yelling, pushing, shoving, and hitting. These behaviors have been intractable problems that not only increase the physical, mental, and economic burden of the patient's family, but even threaten the personal safety of the patient himself or herself and those around him or her ^[3-6]. Its pathogenesis has not been clearly defined, and Western medicine suggests that it may be related to neurodegenerative lesions and increased susceptibility of patients to stressors. Treatment includes removal of triggers, non-pharmacologic and pharmacologic treatments. Non-pharmacological treatment is the recognized first-line protocol for agitation

treatment^[7], which includes general psychological interventions, cognitive-emotional interventions, and sensory stimulation interventions. Several scholars have applied the method of meta-analysis in an attempt to seek quantification and standardization of interventions to achieve replication of interventions^[8-10]. The application of antipsychotic medication is considered only when the agitated symptoms are severe, dangerous, or cause significant distress to the patient, after evaluating the benefit-risk ratio and seeking the consent of the patient or his/her family^[11-13]. However, such drugs can significantly increase the probability of cardiovascular accidents and sudden death in dementia patients and are prone to drug dependence. Therefore, more and more patients and their families are looking to traditional Chinese medicine (TCM) for help. Researcher Hu Jingqing has been engaged in the clinical diagnosis and treatment of geriatric diseases for many years, and he has experienced the theory of “endogenous fire and heat”. In this article, we will share Hu's experience in treating agitated behavior of dementia patients based on the theory of “internal fire and heat”, in order to improve the agitated behavior of dementia patients by combining the advantages of Chinese and Western medicine with the help of a small dose of Western medicine.

2. Connotation of endogenous fire-heat

“Fire is the pole of heat, heat is the gradual fire”, fire and heat in the pathogenesis and clinical manifestations are basically the same, so the endogenous fire heat is also known as ‘internal heat’ or ‘internal fire’^[14]. Patients or old age and frailty or chronic illness and weakness or emotional trauma or dietary inappropriateness, etc., resulting in visceral dysfunction, yin and yang, qi and blood dynamic imbalance, the emergence of the heat phenomenon that is the internal fire^[15]. Fire disease in the qi can be different from qi deficiency yin fire and qi depression fire, qi deficiency yin fire can often be accompanied by fatigue, excessive sweating and other manifestations of qi deficiency. Due to the decline of cognitive ability and living ability of dementia patients, and the inability to correctly express their requests often bring depression, anxiety and other negative emotions, the liver is the wind and wood, the main drainage, drainage is too much, the gas is the fire, so clinically qi depresses the dementia patients in the fire more common than qi deficiency yin fire in the radical Yue. Fire disease in the blood can have the difference between blood deficiency and internal heat and blood stasis. Blood for yin, fire for yang, yang fire dependent on yin blood line in the vein, if blood deficiency is not full of veins, yang no yin attached to the fire, frying Jin pulse appear dry and hot phenomenon. The theory of typhoid fever”said: ‘this has a long time blood stasis, so make happy to forget’, also said ‘the sun disease is not resolved, the heat knot bladder, people such as crazy’. This means that blood stasis and heat can make people crazy, and external heat and blood stasis in the lower burner will make people crazy. Another study shows that in Alzheimer's disease, patients with hyperactive yang are more often accompanied by aggressive aggression and irritability^[16], patients with Alzheimer's disease have deficiency of renal essence, and if the yin is insufficient, there is no way to control the yang, and water does not contain wood, and the relative hyperactivity of the yang can show a hot and fiery image, and the disturbance of the God by phasic fire can be seen in the aggressive and aggressive behavior. In addition, the internal fire burns the yin and consumes the qi, which can lead to yin deficiency, the external manifestation of yin deficiency can be the body directly into the inhibitory state, or enter the inhibitory state after a small plateau period, so it is common to see patients with intermittent episodes of depression and mania in the clinic^[17]. The imbalance of yin and yang, qi and blood in the internal organs can not only directly lead to internal heat, but also through the birth of phlegm and stagnation, which can lead to internal heat. The qi and blood of the internal organs is the material basis for the physiological activities of the organs, and the prevalence of the qi and blood of the internal organs also affects the normal distribution of fluids. Gas depression for the first of the six depression, the gas is not smooth, water

and dampness, gathered into phlegm, or liver depression multiplied by the spleen, the spleen is not healthy, phlegm and dampness born within. Phlegm, water-dampness, food accumulation, blood stasis, and other tangible evil brewing and chemical accumulation and heat and fire^[18], fire and heat have the characteristics of easy to injure the fluid and consume fluid, and easy to generate wind and move the blood, and further aggravate the metabolic disorders of qi, blood, fluid, leading to malignant cycle.

3. Theoretical basis

In Chinese medicine, the name “dementia agitation” has not yet been found, and according to its clinical manifestations, modern medical practitioners mostly attribute it to the category of “dementia, mania, and psychosis”. As early as in the pre-Qin period, *the Yellow Emperor's Classic of Internal Medicine* on the physiology and pathology of the “spirit” records. *The Spiritual Pivot - Tiannian* cloud, “what is God? Qibo said, blood and gas has been, and Rongwei has been through, and the five viscera has been, God's gas has been to the heart, the soul must have, is to become a person.” *Su Wen - eight corrections on the theory of God Ming* cloud, “blood gas, the human God, cannot be careful to maintain.” This means that blood and qi is the material basis of God, qi and blood imbalance is God chaos. *Su wen - to true to be great theory* said, “all mania, all belong to the fire.” In the Jin-Yuan period, Zhu Danxi put forward in the “Bureau Square Play” that “each of the five organs has its own fire, and when the five wills are stimulated, their fire will rise”, claiming that the five wills can transform fire, especially the liver fire can help the heart fire to disturb God. In the Ming Dynasty, Zhang Jiebin^[19] has a more systematic record of the treatment of madness, realizing that fire-heat causes madness, and that there is a distinction between the real and the imaginary. Jiebin puts forward the fire evil real evidence and see the occlusion of the person, or under or vomit, vomit, with Dongguan Anshen Pill and calm the liver medicine, Qingdai, Chaihu, Chuanxiong, and so on; no distension closed hot knot, when the straight folding of the fire poison, in order to kettle the bottom of the fire; yangming fire, then clear the stomach fire; kidney yin deficiency is unable to constrain the yang of the heart, heart-kidney disunion can also be caused by madness. The Qing Dynasty's “miscellaneous diseases source and flow rhinoceros candle - epilepsy source and flow” and said: “epilepsy phlegm and fire suddenly moved, yin and yang competition, but also if the madness of the situation.” This indicates that “phlegm” is the common pathological basis of epilepsy, and that phlegm can lead to madness when it is disturbed by fire. The “Red Water Xuanzhu”: “Madness is a real abundance of phlegm and fire.” *Yi Xue Zhong Zhong Can Xi Lu* said: “The evidence of epilepsy is that phlegm and fire are upward, stagnating and blocking the orifices connecting the heart and brain, so that the heart and brain are not connected, and the gods are all in chaos.” From this, we can see that God is closely related to qi and blood, and the evil of fire and heat. Fire-heat and the heart should be connected, “fire-heat evil, heart disease.” The heart is the master of spirit, so the fire and heat of the evil into the blood, especially easy to affect the heart and spirit, the light heart and spirit of restlessness and insomnia; heavy heart and spirit can be disturbed, mania, agitation and other symptoms.

4. Overview of modern Chinese medicine experience in treating dementia agitated behavior

Peach kernel Cheng Qi Tang is a commonly used formula for the clinical treatment of psychiatric disorders such as schizophrenia and bipolar disorder^[20], and Dr. Wang Leiyun^[21] used the formula to treat patients with frontotemporal lobe dementia who were evidenced to have frequent mood fluctuations, spontaneous urination, and constipation of the bowels, and also achieved very good efficacy. Dr. Zhuang Zifan^[22] diligently searched for ancient teachings and applied the Fangji Dihuang Tang in the Treatise on Typhoid Miscellaneous Diseases to treat Alzheimer's dementia

mania often accompanied by hallucinations and hallucinations, rage and insults, and so on, and believed that this was due to the loss of essence in the liver and kidneys, yin not convergence of yang, and the liver stagnation and stagnation of qi, and stagnation of the liver and the result of the fire. It is said that Fangji is “the master of epilepsy with heat”, and Radix et Rhizoma Pinelliae has the effect of cooling blood and nourishing water and wood. Its application of Radix et Rhizoma Shengdi is similar to Hu Shi's theory of prevention and treatment. Professor Zhang Qi ^[23], a master of state medicine, treats patients with dementia who are emotionally agitated, irritable and talkative, and also see qi stagnation and blood stasis, and often uses epileptic dream awakening soup with additions and subtractions, and adds pores and other defects or rhubarb to lax the stagnation and heat when the phlegm-heat symptom is obvious. Prof. Qiu Peiran ^[24], a master of national medicine, has unique insights into the etiology and pathogenesis of dementia, and believes that some dementia is caused by damp-heat in liver and gallbladder, obscuring the clear orifices, and the disease is mainly in the liver and gallbladder and the brain, so it is appropriate to clear damp-heat, dissolve phlegm and open the orifices, activate blood circulation to eliminate blood stasis, and promote and open up the qigong mechanism. The treatment is to clear away the damp-heat, resolve phlegm and open the orifices, activate blood circulation and eliminate blood stasis, and promote the circulation of qi. Use Longdian Diarrhea Liver Soup to rectify the fire, with Acorus calamus, amber, and safflower. Prof. Yan Dexin ^[25], a master of national medicine, believes that emotional disorders, liver depression and stagnation of qi, generating dampness and phlegm, phlegm and dampness and fire, upward disturbance of the clear orifices can be dementia and agitation, the application of Huanglian Wengdian Tang plus subtractions for the treatment of dementia evidence of crying and laughing, incoherence, and verbal abuse has achieved good results. Prof. Tian Jinzhou ^[26] applied the addition and subtraction of Huang Lian Xie Du Tang to directly fold the fire poison, and at the same time, added the products of tonifying the kidney and essence and replenishing the vital energy, and used 60g of sour jujube nut to treat the patients with dementia in the downward phase of dementia with the state of deficiency and toxicity, and the condition deteriorated rapidly, accompanied by the clinical manifestations of agitated aggression, delirious delusion and so on, and the clinical efficacy was remarkable. In addition, the 2018 consensus of Chinese medicine diagnosis and treatment of Alzheimer's disease ^[27] also attributed the dementia patients with the evidence of impatience and irritability, shouting and moving differently to the evidence of heart and liver fire, and suggested that Tianma Hookteng Tang be added to the flavors; agitated aggression can be seen in the evidence of toxicity and deficiency, and it is appropriate to give Huanglian Xieyue Tang plus forgetfulness of Shuangzhidan. Selected prescriptions for the treatment of dementia agitated behavior by contemporary healers are shown in Table 1.

Table 1: Chinese medical cases of manic behaviors in dementia in old age

Physician	Type of dementia	Main prescription name
Wang Leiyun	frontotemporal dementia	Peach kernel and Cheng Qi Tang
Zhuang Zifan	Alzheimer's disease	Fenghui Di Huang Tang
Zhang Qi	Alzheimer's disease	Dian Kuang Meng Xing Tang
Yan Dexin	vascular dementia	Huanglian gallbladder soup
Tian Jinzhou	Alzheimer's disease	huanglian jiedu decoction

5. Hu Jingqing based on the theory of “endogenous fire-heat” to prevent and control dementia agitated behavior

Hu Jingqing has been engaged in clinical research for many years and found that the red tongue, yellow fur, slippery pulse, and obvious fluctuation in the condition of manic dementia patients in

the clinic are in line with the core characteristics of the fire-heat syndrome ^[28], and suggested that “internal fire-heat, phlegm and blood stasis” may be the key mechanism for the progression of dementia and the accompanying agitated behaviors ^[29-30]. The disease of Alzheimer's disease progresses with agitated behavior ^[29-30]. Dementia patients with old age and chronic illness or emotional disorders lead to visceral yin and yang, qi and blood out of harmony, phlegm and stasis of tangible evils contained and transformed into heat, damage to the brain network. Clinical use of honeysuckle, forsythia, Rhizoma Coptidis, Rhizoma Pinelliae, Artificial Oxalic acid and other heat-clearing and detoxifying products to control the patient's condition in a timely manner. Different from the deficiency fire caused by insufficient kidney essence, the prescription is based on nourishing yin and tonic formulae such as Liu Wei Di Huang Wan and Er Xian Tang. When patients with dementia are irritable, or even have violent symptoms such as cursing and destroying things, or aggressive behavior, the real evil rises as the main contradiction, following the principle of treating the symptom in case of emergency, clearing away heat and removing toxins, cooling and activating the blood, and dispersing the knots and nourishing the veins as the general rule of treatment. In exploring the role of traditional Chinese medicine, it was emphasized that the phenomenon of “only seeing the trees, not seeing the forest” should be avoided, and the use of scriptural formulas should be emphasized ^[31]. The treatment was often based on the application of additional and reduced Si Miao Yong An Tang. Si Miao Yong An Tang was first included in the Shilou Secret Record for the treatment of sores that do not heal. After clinical practice, it is found that this formula can not only clear heat and detoxification, but also can tonify the five viscera, tonifying without stagnation, and eliminating evils, which is in line with the overall state of Alzheimer's disease and mania patients who are deficient in essence, with heat and toxicity stagnation. The combination of forsythia to clear heat and detoxify toxins, dissipate stagnation and eliminate swelling, qiangwu to dispel wind-dampness and pass through xuanfu, huzhi to clear heat and activate blood circulation and pass stools, and artificial oxalic acid to clear heat and open the orifices, etc., which were clinically effective. Some animal tests on rats also showed that Si Miao Yong An Tang has anti-inflammatory and microcirculation improvement effects ^[32].

The treatment of dementia with agitated behavior is more important in prevention. Hu also emphasized that “deficiency, phlegm, and stasis” are not only the basic pathogenesis of Alzheimer's disease, but also the source of “fire and heat”. In the plateau stage of Alzheimer's disease, patients often do not show obvious signs of heat, and there is no obvious progress in their condition, which leads to “fire-heat”, the key mechanism of disease development, being often neglected. Injury to the collaterals, resulting in abnormal emotions and moods, including irritability, hitting and destroying things, and so on. Attention to “fire-heat” should start from the early stage of the disease. For example, in the early stage of patients with kidney deficiency as the main evidence, although there is no obvious signs of heat, but more inclined to use raw dihuang to nourish yin and cool blood; for phlegm evidence, commonly used Chenpi, half-summer with Huanglian to clear heat and dry dampness to resolve phlegm; for blood stasis, commonly used peach kernel, safflower with mudanpi, salvia in order to activate blood stasis and cool blood.

Alzheimer's disease is a progressive and irreversible chronic disease, and the aggressive behavior of dementia patients is a thorny issue for nursing. To improve the sense of access of patients with chronic diseases, it is necessary to promote the application of traditional Chinese medicine in primary health management ^[33], for patients with dementia with frequent aggressive behaviors in addition to giving conventional dementia care, should be given dialectical care according to the pathological characteristics of internal heat, for example, such patients are mostly prone to upset and irritability, firstly, overstimulation should be avoided to ensure that the patient's mood is stable; secondly, more vegetables and fruits are eaten to allow the patient to keep .The second is to eat more vegetables and fruits, so that the patient can keep the bowels unobstructed. Third, according to

the different concurrent symptoms, give different dietary and activity guidance. When Yin deficiency and fire-heat are obvious, more wheat porridge can be consumed to nourish Yin and calm the mind; when Qi stagnation and blood stasis lead to heat, the patient should be assisted to perform more functional exercises of the limbs and divert his attention; when phlegm is obvious, do not eat more mung bean soup, etc., and avoid cold and greasy food. A clinical study found that the use of Chinese medicine evidence-based nursing care compared with general care can not only reduce the frequency of patients' agitation episodes and improve the quality of life, but also reduce the burden of care of patients' families and caregivers^[34].

6. Summary

“Internal fire and heat is an important pathogenesis leading to dementia agitated behavior. Internal fire can be generated by the imbalance of yin and yang, qi and blood in the internal organs, and it can also be caused by phlegm, dampness, blood stasis and other pathological products. Treatment is often four wonderful Yongan Tang plus reduction to clear the heat and detoxification, cool the blood to activate the blood, scattered knots to support the pulse. When the accumulation of pathological products can generate heat, and when the pathological products escalate to become the main contradiction and the body cannot metabolize them by itself, it is necessary to expel phlegm and diuresis, activate blood circulation and remove blood stasis as well as clearing heat. While removing pathological products, the positive qi will be depleted, and the combination of nourishing yin and cooling blood products to support the positive, adjust the qi and blood, and restore the function of the internal organs, in order to achieve the state of yin and yang secrecy, qi and blood, and smooth. In addition, the application of traditional Chinese medicine should not be limited only to the onset of dementia agitated behavior, in the dementia patients have not yet shown agitation and other positive manifestations, it should be prevented from generating internal fire and heat and then disturbing the spirit. At the same time, applying the theory of TCM evidence-based treatment to the care of dementia patients can help improve the agitated behavior of dementia patients.

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