

# Based on the Theory of Phlegm and Blood Stasis, the Mechanism and Research Progress of Acupuncture in the Treatment of Posterior Circulation Ischemic Vertigo were Analyzed

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**Abstract:** In recent years, the theory of phlegm and blood stasis has been more and more widely used in the treatment of various diseases, and has become the focus and hotspot of theoretical research and clinical attention of traditional Chinese medicine. Acupuncture therapy is widely used in clinical practice because of its convenient operation, small side effects, economical and practical characteristics. However, there is no systematic and integrated study on the treatment of posterior circulation ischemic vertigo by acupuncture and moxibustion based on the theory of phlegm and blood stasis. The purpose of this paper is to systematically explore the effect of acupuncture treatment based on the theory of phlegm and blood stasis on posterior circulation ischemic vertigo, including the effect of different acupuncture types on patients with posterior circulation ischemic vertigo of phlegm and blood stasis. In addition, through the combing of relevant literature, the mechanism of acupuncture and moxibustion in the treatment of posterior circulation ischemic vertigo of phlegm and blood stasis type was summarized, which provided reference for future clinical treatment and research.

**Keywords:** Posterior ircuitation ischemic vertigo; Phlegm and blood stasis theory; Acupuncture treatment; Mechanism; Research progress

## Introduction

Posterior circulation ischemic vertigo(PCIV) refers to a variety of causes of posterior circulation arterial system blockage or stenosis, resulting in insufficient blood supply to brain stem, cerebellum and other tissues, thereby affecting vestibular function. Vertigo disease, also known as vertebrobasilar insufficiency vertigo, is more common in the elderly<sup>[1-2]</sup>. The clinical manifestations are sudden dizziness and vertigo, which may be accompanied by tinnitus, nausea and vomiting, limb numbness, dyskinesia, ataxia, disturbance of consciousness and other complications, with the characteristics of recurrent attacks<sup>[3]</sup>. At present, the understanding of the pathogenesis of posterior circulation ischemia in Western medicine is not completely clear. Most of them believe that large artery atherosclerosis is the main cause of this disease<sup>[4]</sup>. The treatment of this disease in modern medicine is limited<sup>[5]</sup>.

Through literature review, the author found that in recent years, traditional medicine has a more comprehensive treatment plan and more prominent curative effect in the treatment of diseases, especially acupuncture treatment, which is widely used in the treatment of cerebrovascular diseases. A large number of clinical studies have shown that<sup>[6-8]</sup>, the theory of phlegm and blood stasis has increasingly become the focus and hotspot of theoretical research and clinical attention of traditional Chinese medicine. In recent years, Chinese medicine has made great progress in the treatment of this disease from the perspective of phlegm and blood stasis. In the past three years, the mechanism and research progress of acupuncture and moxibustion in the treatment of posterior circulation ischemic vertigo have been briefly summarized from the perspective of phlegm and blood stasis.

### 1. The theoretical basis of treating PCIV by phlegm and blood stasis

Chinese medicine classifies PCIV into the category of 'vertigo' in traditional Chinese medicine according to symptoms. It is first seen in 'Huangdi Neijing', and has a variety of appellations such as 'dazzle', 'dazzle' and 'dizzy'. Later, Beiji Qianjin Yaofang first proposed the word 'vertigo'. Subsequently, most doctors began to use 'vertigo' as the name of the disease, and it has been used up to now. Zhang Zhongjing believes that phlegm is the main factor in the pathogenesis of vertigo, opening the theoretical precedent of 'dizziness caused by phlegm'<sup>[9]</sup>.

Modern research shows that phlegm syndrome and blood stasis syndrome involved in traditional Chinese medicine are similar to hyperlipidemia and atherosclerosis in western medicine. Atherosclerosis is the most important cause of PCIV, and phlegm and blood stasis are the main pathogenic factors of atherosclerosis<sup>[10]</sup>. Zhu Liangchun, a master of traditional Chinese medicine, believes that phlegm and blood stasis form a tangible real evil similar to unstable atherosclerotic plaque in vertigo<sup>[11]</sup>. Studies have found that phlegm and blood stasis syndrome is closely related to objective indicators such as dyslipidemia, hemodynamic changes, increased oxygen free radicals, uric acid abnormalities, insulin resistance, abnormal glucose metabolism, and differences in gene expression<sup>[12]</sup>. In addition, there are also studies on the treatment of phlegm and blood stasis from the perspective of inflammatory lesions. Jin Hongguang<sup>[13]</sup> observed the effect of simultaneous treatment of phlegm and blood stasis on aortic vulnerable plaques in atherosclerotic (AS) rats. The study found that the treatment method can effectively reduce blood lipid levels, inhibit the production of inflammatory factors, and protect the integrity of the intima of the blood vessels. The simultaneous treatment of phlegm and blood stasis may fight AS and stabilize vulnerable plaques through these mechanisms. Li Zhaoyuan and others believe that phlegm turbidity and blood stasis are the main pathological factors leading to AS inflammatory lesions. Phlegm turbidity and blood stasis accumulate for a long time, viscera deficiency, heat toxin metaplasia, aggravating inflammatory lesions, thus promoting plaque growth<sup>[14]</sup>. These objective indicators provide a theoretical basis for the treatment of PCIV with phlegm and blood stasis.

## 2. Discussion on the mechanism of acupuncture treatment of PCIV

The Yellow Emperor's Inner Classic, *Ling Shu*, is the theoretical origin of traditional Chinese acupuncture and moxibustion. It comprehensively elaborates on the causes and mechanisms of dizziness treated with acupuncture and moxibustion, mainly including the invasion of pathogenic factors into the internal organs, deficiency in the sea of marrow, and other conditions caused by excessive pathogenic factors or deficiency of righteous qi<sup>[15]</sup>. However, it places more emphasis on the abnormal circulation of qi and blood in dizziness. Research has confirmed that the blood circulation foundation of phlegm syndrome is related to abnormalities in blood rheology, characterized by increased blood viscosity, stickiness, aggregation, and coagulation. Therefore, abnormal blood rheology can serve as an objective indicator for evaluating "phlegm-stasis obstruction."<sup>[16]</sup>

## 3. Clinical application of acupuncture in the treatment of PCIV caused by phlegm and blood stasis

### 3.1 Techniques of filiform needle acupuncture

As a type of the nine needles, the fine and sharp filiform needle can achieve good therapeutic effects with minimal damage to the body when used, hence it is widely used in modern clinical practice. Bin Xia Lang used the phlegm-resolving and wind-extinguishing dizziness needling method (Shui Gou, Taiyang, Baihui, Touwei, Fengchi, Neck Ji Re (C4-6), Tanzhong, Zusanli, Sanyinjiao, Fenglong, Hegu, Taichong) for the treatment group, while the control group used conventional needling. The results indicated that the phlegm-resolving and wind-extinguishing dizziness needling method significantly improved symptoms, signs, vertebral artery blood flow velocity, and pulsatility index in patients with phlegm-dampness obstructive type vertebral artery insufficiency<sup>[17]</sup>.

### 3.2 Cauterized needle

Fire needling, also known as "burning needle" or "white needle," is a treatment method that involves quickly inserting a heated needle into specific acupuncture points to achieve therapeutic effects. According to experts like Huang Changjin, fire needling therapy harnesses the power of fire, combining the effects of fine needle meridian activation, moxibustion to warm the yang and dispel cold, and mechanisms such as promoting yang with fire, opening the door to expel evil, using heat to attract heat, and transforming phlegm and dispersing masses<sup>[18]</sup>. Therefore, they use fire needling to stimulate the Baihui acupoint to treat vertigo caused by phlegm obscuring the upper orifices. The results indicate that treating this type of vertigo with fire needling at the Baihui acupoint can effectively warm and promote circulation, raise yang with fire, warm yang to transform phlegm, and achieve good therapeutic results.

### 3.3 Cut-off Squirt

Acupuncture injection, also known as "acupoint injection" or "shuixue injection," is a treatment method that combines acupuncture therapy with modern medical closed therapy. Studies have shown that the therapeutic effect of combining acetylcholine injection with danshen injection is better for patients with cerebral ischemic vertigo than using acetylcholine injection alone<sup>[19]</sup>. Danshen injection, containing effective components such as danshensu B and safflower yellow pigment, may upregulate the expression of the anti-apoptotic gene Bcl-2 protein in myocardial cells, reduce myocardial cell apoptosis induced by ischemia-reperfusion, and intracellular calcium overload. Additionally, danshen injection can promote the secretion of vascular endothelial growth factor, stimulate vascular endothelial cells to release prostacyclin I2, maintain the dynamic balance of thromboxane A2/prostacyclin I2 in the peripheral circulation, and stabilize the balance between vasoconstrictors

and vasodilators, thereby improving blood flow in the posterior circulation of the brain<sup>[20]</sup>.

### 3.4 Electroacupuncture

Electroacupuncture is a common acupuncture treatment method that combines the use of electrical pulses with traditional needle stimulation on specific acupuncture points. Xu Huan et al. combined electric acupuncture (Baihui, Fengchi, Neck-Shoulder Well, Fenglong, Yilingquan, Zusanli) with Banxia Baizhu Tianma Decoction to treat phlegm-dampness obstructive type posterior circulation ischemic vertigo<sup>[21]</sup>. Research has shown that the combination of electric acupuncture with Banxia Baizhu Tianma Decoction is significantly more effective in treating phlegm-dampness obstructive type PCI-induced vertigo than using Chinese herbal medicine alone. This may be attributed to the ability of electric acupuncture to regulate the sympathetic nerves near the vertebrae, thereby alleviating symptoms related to PCI-induced vertigo.

### 3.5 Ear acupuncture

Ear acupuncture is a common intervention in traditional Chinese medicine. By using medicinal seeds like Wang Buliuxing on ear acupoints to provide continuous stimulation, it can promote the flow of Qi and blood, unblock meridians, improve microcirculation, enhance blood circulation, and ultimately alleviate clinical symptoms of PCIV patients, as indicated by relevant studies<sup>[22]</sup>. Therefore, applying pressure on ear acupoints can have a positive therapeutic effect on alleviating dizziness. The earlobe has a rich distribution of nerves, mainly concentrated in the earlobe, ear canal, and triangular fossa areas. When stimulating the earlobe area, the stimulation signals can be transmitted through branches of the vagus nerve to the solitary nucleus and medulla oblongata in the brainstem. Hence, the mechanism of ear acupuncture in reducing blood pressure and improving dizziness may be closely related to the vagus nerve<sup>[23]</sup>.

### 3.6 Moxibustion

Moxibustion therapy is one of the traditional external treatments in Chinese medicine, holding a significant position in acupuncture and widely used in the clinical treatment of various diseases. Research has shown that the main mechanism of moxibustion in promoting blood circulation and removing blood stasis lies in its ability to improve blood circulation, regulate hemorheology, and other indicators<sup>[24]</sup>. According to the latest clinical efficacy evaluation methods and score observations, the efficacy and feasibility of promoting blood circulation and removing blood stasis moxibustion therapy for posterior circulation ischemic vertigo have been confirmed. This therapy is significant in improving patients' quality of life, preventing and reducing the occurrence of cerebral infarction, especially reducing the incidence of cerebellar and brainstem infarctions<sup>[25]</sup>.

## 4. Nodule

In summary, the ancient physicians have a long-standing understanding of 'dizziness caused by phlegm and blood stasis', mainly 'dizziness caused by phlegm' or 'dizziness caused by blood stasis'. On the basis of summarizing the previous theories, modern physicians clearly put forward the pathological mechanism of 'phlegm and blood stasis are reciprocal causation and common pathogenesis'. Based on this theory, acupuncture has achieved good clinical results in the treatment of vertigo. However, at present, most of the clinical diseases are caused by the interaction of several pathogenesis, and the pathogenesis is relatively complex. A large number of clinical studies still remain on a single pathogenesis for experience summary and retrospective study. In addition, PCIV caused by phlegm and blood stasis is more common in clinical practice. Acupuncture and moxibustion treatment of PCIV is based on the basic principles of dredging meridians, soothing tendons and activating blood circulation, removing blood stasis and removing arthralgia, but in clinical research, the research methods of such PCIV are relatively simple. Therefore, in addition to simple acupuncture treatment and combination of acupuncture and medicine, we should keep the innovation, combine modern medical technology on the basis of traditional Chinese medicine technology, and provide more reference for future clinical treatment and research.

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