

Exploration on the Pathogenesis and Clinical Progress of Angina Pectoris in Coronary Heart Disease based on the Theory of Phlegm and Blood Stasis

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Abstract: *Coronary heart disease (CHD) is called “chest obstruction and pain” in traditional Chinese medicine. The etiology and pathogenesis of CHD vary widely, including internal invasion of cold pathogens, improper diet, work and rest disorder, emotional disorder, and heart and pulse obstruction caused by old age and body deficiency. Its pathological nature is deficiency and excess, which can be caused by deficiency or deficiency. By consulting a large number of literature and research, the effect of treating angina pectoris of coronary heart disease from the mutual combination of phlegm and blood stasis is good. Therefore, this paper reviews the theoretical basis, modern medical research and clinical treatment practice of phlegm and blood stasis type angina pectoris of coronary heart disease, so as to provide reliable theoretical basis and reference for clinical prevention and treatment of this disease.*

Keywords: Coronary atherosclerotic heart disease, Angina pectoris, Phlegm and blood stasis, Chest stuffiness and heartache, Research progress.

1. Introduction

Coronary heart disease (CHD) is short for coronary atherosclerotic heart disease, its pathological mechanism is that plaques formed by the accumulation of lipids and complex sugars, fibrous tissue hyperplasia and Plaques formed by calcium deposition in the coronary artery intima form obstruction or even occlusion in the coronary artery, resulting in insufficient blood supply to myocardial cells and a series of heart diseases [1]. In traditional Chinese medicine, angina pectoris of coronary heart disease is classified into the categories of “chest stuffiness”, “heartache” and “sincere pain”. It has the pathological factors of atherosclerosis and insufficient blood supply to the myocardium. TCM believes that “phlegm turbidity” is the manifestation of atherosclerosis and increased blood lipids, and “blood stasis” is the manifestation of myocardial ischemia and hemorheological changes. Therefore, phlegm stasis is the main factor and an important pathogenesis of angina pectoris [2]. Therefore, the principle of “treating phlegm and blood stasis” should be followed to prevent and treat this syndrome type in clinical practice. Studies have shown that cardiovascular disease has become the leading cause of death, among which coronary atherosclerotic heart disease (coronary heart disease) is the main cause of death, accounting for about 30% of the total deaths [1]. At the same time, some studies have shown that the ratio of healthy life years lost due to disability to healthy life years lost due to illness and death in the population with coronary heart disease in China is 14. The ratio was 2: 1, and the absolute burden of CHD was 122. 0% growth ranked second [3-4]. In recent years, people's lifestyles have been constantly changing, and the incidence trend and mortality rate have been significantly increased, and they are getting younger and younger, which threatens the life and health of patients [5]. In recent years, TCM has made great progress in the treatment of coronary heart disease. Most doctors prevent

and treat angina pectoris of coronary heart disease from the aspect of phlegm and blood stasis, and the clinical effect is remarkable. From the perspective of phlegm and blood stasis, this article reviews the pathogenesis, modern research and clinical efficacy of this disease, so as to provide more ideas and references for clinical prevention and treatment of this disease.

2. The Theory of Phlegm and Blood Stasis is the Basis for the Treatment of Chest Stuffiness

2.1 The Theory of qi, Blood and Body Fluid is Its Theoretical Basis

The normalization and operation of qi, blood and body fluid depends on the normal function of zangfu organs. The heart is the main blood vessel, “the vein is the house of blood”. The normal operation of the heart and blood depends on the promotion of the heart and qi to run the whole body and play a role in ruyang and nourishment. The normal operation of blood is closely related to the distribution of the heart and blood vessels and the liver and the storage of blood. The spleen is the source of qi and blood biochemistry. The normal operation of water and liquid, the surplus and deficit of qi and blood are closely related to the spleen and stomach. “In Plain Questions”, “When eating qi enters the stomach, the turbidified qi returns to the heart, and the essence is excreted in the veins” and “Spleen and Stomach Theory”, “When eating into the stomach, Yang qi rises, body fluid and qi enter the heart, and flow through the lungs”, the normal operation of water and fluid depends on the movement of the spleen, the descending of the lung, and the gassation of the kidney. The dependence on physiology must be reflected in the mutual influence on pathology [6]. Qi deficiency, qi stagnation and cold blood can all lead to blood stagnation caused by blood

stasis. The spleen loses its health, the water is wet and stops, and the damp is phlegm. The so-called “spleen is the source of phlegm”, the phlegm is blocked, and “the strange hundred ends become”. Qing · Shen Qianlv said that “people have phlegm from birth to death, all born in the spleen, gather in the stomach.....”, inside and outside the body, viscera and six bowels all have “.

2.2 The Understanding and Experience of Medicine in the Past Dynasties are the Hotbed for the Theory of Phlegm and Blood Stasis

In the Jin-Guiyao (Synopsis of the Golden Chamber), for the treatment of chest obstruction and heart pain, it is proposed that “Yang and Yin string”, that is, “chest obstruction and pain”, and created Huixibai decoction and other effective prescriptions for eliminating phlegm, relieving obstruction and promoting Yang, which is the first of the theory of phlegm. Qianhu decoction in Qianjin Fang (Prescriptions for a Thousand Gold) of the Tang Dynasty treats “the inverse qi in the chest, the pain in the heart, the pain in the back, the lack of qi, and the inability to eat”. In Taiping Shenghuifang (Taiping Shenghuifang) of the Song Dynasty, “chest obstruction and painful phlegm are adverse to the chest, heart and diaphragm”, which is the development of phlegm theory. The theory of blood stasis can be traced back to the method of activating blood circulation and removing blood stasis, which was founded in the Neijing (Internal Canon of Medicine), “those with blood stagnation should be solved”, “those with heart obstruction, and their veins were blocked”. In the Jin Dynasty, Zhuhou Bei ji Fang (Ready-emergency Prescription for Liuhou), drugs for activating blood circulation and removing blood stasis were used to treat the stroke and heartache. This method was widely used in the Tang and Song Dynasties. Until the Qing Dynasty, Wang Qingren's Yi Lin Qian Cuo, “Sudden chest pain should not be treated in front, use Xuefu Zhuyu decoction to pay for pain and stop it” and Tang Rongchuan's Xue zheng Lun, “the blood of heart disease should be urgent, and the blood stasis should be removed” applied Guixiong Juxiao powder, etc., so that the theory of blood stasis took a major position, especially the contemporary deep research on the method of promoting blood circulation and removing blood stasis, “qi stagnation and blood stasis” and “qi deficiency and blood stasis” came into being. It has become the main treatment for chest stuffiness and heartache. As early as in the Qing Dynasty, Ji Zi Tang Yi An (Medical Cases of Ji Zi Tang) believed that this disease was not only caused by cloudy phlegm, but also by blood stasis between the diaphragm. The prescriptions used whole *Trichosanthis fructus*, Xiebai, Xuanhua, peach kernel, safflower, *Wollemia*, Xuanhu and Heerchen decoction, which was actually the initial form of the theory of phlegm and blood stasis.

2.3 The Understanding of Phlegm and Blood Stasis Theory in Modern Medicine

Modern medicine believes that atherosclerosis is the main pathological change of coronary heart disease, and the basic pathological morphology of atherosclerosis is similar to phlegm and blood stasis in traditional Chinese medicine. The formation of atherosclerosis is related to the disorder of lipid metabolism. The formation of atherosclerosis is related to the

disorder of lipid metabolism. It is believed that the accumulation of phlegm (hyperlipidemia) is the direct cause of the stagnation of meridians and the obstruction of qi and blood (atherosclerosis and increased blood viscosity). Obstruction of phlegm and stagnation of meridians are the preconditions for the occurrence of chest stuffiness. Clinical studies have found that most patients with chest stuffiness and pain complain of paroxysms of chest tightness and chest pain, that is, the combination of stuffiness and pain. The patients are often accompanied by the syndrome of interaction of phlegm and blood stasis, such as breath holding, wan pipi and numbness, heavy limbs, body weight, thick and thick moss, dark texture and blood stasis, smooth pulse or astringency.

3. Clinical Practice of Phlegm and Blood Stasis Mutual Accumulation in the Treatment of Angina Pectoris of Coronary Heart Disease

The mutual accumulation of phlegm and blood stasis is an important factor that causes angina pectoris of coronary heart disease (chest stuffiness and pain). In view of the pathogenesis of chest stuffiness and pain, Zhongjing made a series of formulae represented by Gualou Xiebai Banxia decoction with the method of warming Yang, promoting blood circulation and promoting water. Modern doctors also often follow Zhongjing's method to use Gualou Xiebai Banxia decoction as the base prescription, or combined with Xuefu Zhuyu decoction, etc., and the clinical effect is remarkable [7]. Professor Deng Tietao [8] put forward the theory of “phlegm and blood stasis correlation”, and believed that phlegm and blood stasis influence each other and promote each other, resulting in the progression of coronary heart disease. Professor Lei Zhongyi [9] put forward the theory of “mutual accumulation of phlegm and blood stasis” in the 1970s with a large amount of clinical experience. Later, based on the theory of “deficiency of qi and Yin, mutual accumulation of phlegm and blood stasis”, Professor Lei Zhongyi [9] pointed out that the treatment of “simultaneous treatment of phlegm and blood stasis” is an important method for the prevention and treatment of CHD. Professor Hu Jingqing [10] believes that the basic pathogenesis of coronary heart disease is the combination of phlegm and blood stasis, which goes through the onset of coronary heart disease. Phlegm and blood stasis can be either pathological products or pathogenic factors, and the two “intermingled” and “transformed” each other, resulting in lingering illness [11]. Fan Yongjie et al. [12], based on the pathogenesis of coronary heart disease with “Yang, Wei and Yin chord”, formulated Yixin-Tongmai ointment to conduct clinical trials on patients with coronary heart disease with syndrome of mutual accumulation of phlegm and blood stasis, and concluded that the combined application of Yixin-Tongmai ointment could improve the symptoms and quality of life of patients. Wang Haolin et al. [13] conducted a controlled trial on 74 patients with coronary heart disease (stable angina pectoris), and found that the use of blood-activating and phum-resolving drugs improved many indicators of patients, and the treatment also achieved great results. Zhu Zhiyao et al. [14-15] conducted a clinical study on 60 patients with coronary heart disease and angina pectoris with phlegm and blood stasis, and found that the modified Gualou Xiebai Banxia decoction, which has the effect of promoting Yang and dispersive knot, resolving phlegm and removing blood stasis, relieved and

eliminated many symptoms of chest stuffiness and pain. Ma Zhehe et al. [16] found that treating patients with Zhishi Xiebai Guizhi decoction and Xuefu Zhuyu Decoction together with phlegm and blood stasis not only improved the clinical symptoms of patients, but also reduced the number of unstable atheroma plaques in the neck, and even eliminated them or turned them into stable plaques.

4. Conclusion

Based on the theory of mutual accumulation of phlegm and blood stasis in the treatment of coronary heart disease, the blockage of heart vessels by phlegm and blood stasis is the key pathological point of chest obstruction: Viscera dysfunction, blood and body fluid metabolism disorders, especially the weakness of heart, spleen and kidney qi, and the weakness of operation, and the loss of the liver, qi and blood disorder, the appearance of phlegm turbidity and damp pathogens obstructing blood circulation and causing stasis or causing stasis and damp pathogens to produce phlegm, blood stasis and phlegm turbidity bond, forming a complex pathological product of phlegm and blood stasis, blocking the heart vessels and causing chest stuffiness and pain. Phlegm and blood stasis mutual accumulation type, more serious condition, longer course of disease, lingering difficult to heal. With the deepening of research, phlegm and blood stasis in the formation of coronary heart disease has been paid more and more attention. Not only the ancient doctors have fully discussed that phlegm and blood stasis are closely related to the pathogenesis of CHD, but also modern clinical observation and laboratory research have confirmed that the interaction of phlegm and blood stasis is an important link in the pathological basis of CHD, providing a scientific basis for the simultaneous treatment of CHD with phlegm and blood stasis. The proposal and clinical application of the theory of treating phlegm and blood stasis together have greatly improved the symptoms of patients and improved the quality of life of patients. On the other hand, it provides a new way to understand angina pectoris of coronary heart disease. In conclusion, the treatment of coronary heart disease angina pectoris from phlegm and blood stasis has a bright development prospect, and through the continuous exploration of phlegm and blood stasis type of coronary heart disease, the level of TCM treatment of coronary heart disease will be further improved.

References

- [1] Chinese Cardiovascular Health and Disease Reporting Group. Summary of Chinese cardiovascular health and disease report 2019 [J]. Chinese Circulation Journal, 2020, 35(9): 833-854.
- [2] Fan Hong, Lei Zhongyi, Liu Chaofeng, et al. An analysis on the origin and academic characteristics of "Chang'an Lei's school of heart disease and phlegm stasis" [J]. Shaanxi Journal of Traditional Chinese Medicine, 2024, 45(12): 1678-1682.
- [3] Liu Meina, Sun Hongpeng, Xu Wei, et al. Study on the healthy life years lost in patients with coronary heart disease in China [J]. China Public Health, 2008, 24(12): 1449-1450.
- [4] Gao Runlin. Disease burden of coronary heart disease: China's way out [J]. Chinese Circulation Journal, 2017, 32(01): 1-4.
- [5] Liu Mingbo, He Xinye, Yang Xiaohong, et al. Interpretation of report on cardiovascular health and diseases in China 2023 [J]. Chinese Journal of Interventional Cardiology, 2021, 32(10): 541-550.
- [6] Chen Min, Fan Hong, Shi Yan, et al. Experience of master Lei Zhongyi in treating coronary heart disease by stages based on the theory of "phlegm and blood stasis, toxin and wind deficiency" [J]. Chinese medicine review, 2024, 21(32): 149-154.
- [7] Yuan Rong, Wang Jie, Guo Lili. Modern research on phlegm and blood stasis syndrome of coronary heart disease and progress of traditional Chinese medicine treatment [J]. Chin J Materia Medica, 2016, 41(01): 35-37.
- [8] ZHAO Yiye, Lin Xiaozhong, Zhang Minzhou, et al. Professor tie-tao deng to coronary heart disease (CHD) experience of diagnosis and treatment of glove related theories introduced [J]. Journal of new traditional Chinese medicine, 2007, (4): 5-6.
- [9] Zheng Xurui, Li Cuijuan, Wen Yingjuan, et al. Analysis of the Application of the Theory of "Phlegm Stasis" by Mr. LEI Zhongyi, Master of Traditional Chinese Medicine, in the Treatment of Chest Painful Impediment [J]. World Chinese Medicine, 2021, 16(05):815-818.
- [10] Hu Jingqing. Pathogenesis and theory under the framework of coronary heart disease pathogenesis analytical [J]. China's basic medical journal of traditional Chinese medicine, 2017, 23 (01): 4-7+11.
- [11] Wang Song, Liu Jiafen, He Xiaolian, et al. Professor tie-tao deng yiqi divide phlegmy invigorate the treatment experience of coronary heart disease [J]. Journal of Chinese medicine, 2019, 5 (3): 699-702.
- [12] Fan Yongjie, Yin Bangqiao, Wei Xiawei, et al. Fan-Yin-Tongmai ointment in the treatment of stable angina pectoris of coronary heart disease with phlegm and blood stasis syndrome [J]. Journal of Cardio - Cerebrovascular Disease of Integrated Traditional Chinese and Western Medicine, 2021, 19(13): 2129-2133.
- [13] Xiao Tong. Clinical retrospective analysis of Gualou Xiebai Banxia decoction combined with coronary heart disease II decoction in the treatment of angina pectoris (phlegm and blood stasis) after PCI in patients with acute coronary syndrome [D]. Hubei university of Chinese medicine, 2024.
- [14] Wu Xueping, Fan Hong, Liu Chaofeng, et al. Flavored fructus scallions white pinellia decoction treatment of coronary heart disease (CHD) of phlegm and blood stasis poison each other by clinical observation [J]. World magazine which combines traditional Chinese medicine with western medicine, 2012, 7(9): 800-801.
- [15] Liu Jingli, Wu Yi, Liu Jingli. Effects of Qingre-Jiedu Huoxue method on vulnerable plaque of carotid artery in patients with unstable angina pectoris [J]. Clinical Research of Traditional Chinese Medicine, 2016, 8(08): 19-20.
- [16] Yin Ni, Yuan Dongchao, Zhang Zhe, et al. Coronary heart disease stable angina correlation analysis between the physical and chemical index [J]. Chinese journal of traditional Chinese medicine, 2014, 32(4): 754-757.