

Progress in Traditional Chinese Medicine Treatment of Chronic Heart Failure

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Abstract: Chronic heart failure (CHF) is the terminal stage of the development of various heart diseases, is a clinical syndrome. The study found that the incidence and mortality remain high, the rehospitalization rate is high, and the quality of life is low. Recent studies have found that traditional Chinese medicine (TCM) has the advantages of long history, exact curative effect and small side effects in improving heart failure. Therefore, this paper discusses the progress of traditional Chinese medicine in the treatment of chronic heart failure from the understanding of CHF in traditional Chinese medicine, syndrome type prescriptions and traditional Chinese medicine preparations.

Keywords: Chronic Heart Failure, Traditional Chinese Medicine Treatment, Research Progress

1. Introduction

Chronic heart failure (CHF) is the change of heart structure and function caused by various cardiovascular diseases, which affects the ejection and filling function of the heart and is the final outcome of various heart diseases. The main clinical manifestations were fluid retention, dyspnea and fatigue. Chronic heart failure affects 22.5 million people worldwide. At present, the prevalence of heart failure in China is 1.3 %, which has become one of the largest heart failure patients in the world [1]. The incidence of heart failure in Chinese population is 0.7 -0.9 per thousand people, with 500,000 new heart failure patients each year. With the aggravation of population aging, it is predicted that the prevalence of heart failure in China will still increase in the next 10 years or more [2]. With the continuous development of cardiology, the treatment of chronic heart failure by Western medicine has changed from the earliest golden triangle (diuretic + cardiotonic + vasodilator) to a new golden triangle (β -receptor blocker + ACEI/ ARB + aldosterone receptor antagonist). The treatment concept has also changed from improving symptoms to extending the life span of patients and improving the quality of life. In recent years, the understanding of Western medicine on chronic heart failure has been continuously improved, and new therapeutic drugs and methods have been increased. At present, the goal of western medicine treatment of chronic heart failure is to improve the clinical symptoms and quality of life of patients, prevent ventricular remodeling, reduce hospitalization rate and mortality. As early as in the ancient books of traditional Chinese medicine, there is no chronic heart failure disease name records, but 'spiritual axis·expansion theory' found that 'heart distension, annoyed short breath, restless.' 'Jinkui Yaolue·Phlegm Drink Cough Disease Vessel Syndrome and Treatment': 'Water stops under the heart, even palpitations, slight shortness of breath.' These are consistent with heart failure syndrome. Therefore, traditional Chinese medicine often classified chronic heart failure as 'chest obstruction', 'asthma', 'phlegm' and 'edema'. Traditional Chinese medicine has achieved outstanding results in the treatment of chronic heart failure, which plays a certain role in improving cardiac function, alleviating clinical symptoms and improving the quality of life. Especially with the emergence of new dosage forms of traditional Chinese medicine, the administration of traditional Chinese medicine has been reformed, which greatly enriches the treatment methods of heart failure and improves the curative effect. Traditional Chinese medicine (TCM) has the advantages of long history, exact curative effect and less toxic side effects in improving heart failure. JACC, the top journal of cardiovascular medicine, published a multicenter randomized clinical study in 2013. It was found that some TCM can significantly improve the level of NT-proBNP in patients with heart failure, and have a significant effect on six-minute walking test and NYHA classification. At the same time, as a highlight, the application prospect of TCM in the treatment of heart failure was reviewed. Therefore, Chinese medicine has become the most potential treasure house for the development of new drugs for heart failure.

2. Understanding of TCM on etiology and pathogenesis of CHF

There is no name of 'chronic heart failure' in ancient books of traditional Chinese medicine, which is mostly attributed to 'heart water', 'asthma syndrome', 'edema', 'heart paralysis' and other categories, and is now uniformly named 'heart failure' [3]. 'Suwen-Bilun' said: 'If the heart is blocked, the pulse is not clear, the heart drum is irritated, the gasp is violent, the occlusion is dry and good, and the convulsion is fear', which is a typical clinical manifestation of chronic heart failure; 'Synopsis of the Golden Chamber' said: 'Clouds: Heart water, whose weight is less than qi, cannot lie down'. Water is in the heart, and the heart is strong, short of qi, and nausea does not want to drink'. It not only describes the symptoms of chronic heart failure, but also indicates that the disease is located in the heart' [4]. The cause of heart failure is related to emotion, diet, tiredness and external feeling. The disease is located in the heart, the disease development process is complex, involving five viscera. At present, most scholars of traditional Chinese medicine believe that heart failure belongs to the disease of deficiency in origin and excess in superficiality. Deficiency is the foundation, and deficiency includes qi deficiency, blood deficiency, yin deficiency and yang deficiency. Qi deficiency is the foundation, and qi deficiency cannot flow blood, resulting in the inability of five viscera and six fu organs to nourish and supply, and the adverse qi movement, leading to the disorder of qi movement in viscera, the dysfunction of various organs, and the influence of yin, yang, qi and blood harmony, and the occurrence of blood stasis, water retention, dampness accumulation and other superficiality, especially the blood stasis throughout the disease, which can be transformed and coexisted, and can be emphasized [5]. Phlegm and blood stasis and other tangible evil, blocking the channel, blocking the heart, but also hinder the normal operation of qi, due to deficiency to excess, due to excess to deficiency, deficiency and excess mixed, repeated aggravating.

3. TCM syndrome differentiation and treatment of CHF

In the consensus of TCM diagnosis and treatment of chronic heart failure TCM syndrome types of heart failure can be summarized as qi deficiency and blood stasis, qi and yin deficiency and blood stasis, yang deficiency and blood stasis three basic syndromes, can be seen phlegm[6].

3.1. *Qi deficiency and Blood stasis*

The guidelines recommend Baoyuan Decoction combined with Xuefu Zhuyu Decoction for treatment of this syndrome. Linjie Deng etc. [7] treated 87 patients with CHF due to qi deficiency and blood stasis with the modified Baoyuan Xuefu Zhuyu decoction, and the results showed that the decoction could protect the myocardium, promote the improvement of cardiac blood supply and the recovery of cardiac function, thereby improving the overall efficacy. Ren Xiaoxia etc. [8] observed Yiqi Xiefei Decoction in the treatment of heart failure with Qi deficiency and blood stasis syndrome, the conclusion is that the prescription can effectively alleviate the clinical symptoms of patients, extend 6 min walking distance, improve cardiac systolic and diastolic function, inhibit ventricular remodeling, may be related to the inhibition of inflammatory response.

3.2. *Qi and Yin deficiency and Blood stasis*

Guide recommends the use of Shengmai Powder and Xuefu Zhuyu Decoction. Yuanfei Wang etc.[9] To observe the effect of Shengmai Zhuyu Decoction on exercise tolerance, NT-proBNP level and cardiac function in patients with chronic heart failure with Qi and Yin deficiency and blood stasis syndrome. The results showed that Shengmai Zhuyu Decoction in the treatment of chronic heart failure with Qi and Yin deficiency and blood stasis syndrome has remarkable clinical curative effect, which can significantly improve the exercise tolerance and cardiac function level of patients with high safety.

3.3. *Yang deficiency and Blood stasis*

For patients with heart failure due to heart-yang deficiency and blood stasis, Zhenwu Decoction combined with Xuefu Zhuyu Decoction is often used, and most physicians also use self-made decoction for treatment, with good results. Janjun Wang etc. [10] performed Zhenwu Decoction combined with Xuefu Zhuyu Decoction in the treatment of 96 patients with coronary heart disease and chronic heart failure, with more obvious clinical efficacy. Compared with conventional western medicine treatment, it can improve the clinical symptoms of cardiac function, which can be promoted in clinic.

4. Treatment of CHF self-made prescription

Most TCM doctors have formed their own characteristics in the treatment of chronic heart failure, most of which are based on classical prescriptions and many years of clinical experience. It has achieved good results in the treatment of chronic heart failure. Xiaoyan Sun etc. [11] used self-made Shengui Baoxin Decoction (Poria cocos peel, Alisma orientalis, Semen Plantaginis, Semen Tinglizi, Panax quinquefolium, Atractylodes macrocephalae, Ejiao 10g each, Pseudostellaria heterophylla, Ophiopogon japonicus, Polyporus umbellatus, Ramulus Cinnamomi, Flos Carthami, Chuanxiong, and Jujube) to treat CHF, which could effectively reduce the levels of BNP and MMP-2, improve the cardiac function of patients, and had good safety and curative effect. Lei Zhongyi, a master of traditional Chinese medicine, follows the ancient law and makes good use of classical prescriptions, but he is not rigidly adhere to the ancient law. In line with the method of 'treating different diseases with the same method' of traditional Chinese medicine, Lei's Yangxin Huoxue Decoction is prepared on the basis of traditional Shengmai Decoction and Danshen Decoction.

5. Application of Chinese patent medicine in the treatment of CHF

5.1. Oral preparations and related studies

Through CNKI search literature found that the commonly used oral Chinese patent medicines are as follows: Shexiang Baoxin pills, Huangqi Shengmai Yin, Qishen Yiqi dripping pills, Qili Qiangxin capsules, Yixinshu capsules, Zhenyuan capsules, Shengmai capsules, Shenfu Qiangxin pills, Buyi Qiangxin tablets, Xinbao pills have the effect of treating chronic heart failure. Liang Chen etc. [12] To observe the clinical efficacy of Shexiang Baoxin Pills combined with conventional western medicine in the treatment of 96 patients with coronary heart disease and heart failure and its effect on cardiac function. The results showed that the clinical efficacy of Shexiang Baoxin Pills combined with conventional western medicine in the treatment of coronary heart disease and heart failure was better, which was helpful to improve cardiac function and ventricular remodeling, and was worthy of clinical application. Zhao Ge etc. [13] conducted a meta-analysis of 26 RCT studies that met the requirements on the effect of Qiliqiangxin capsule on the quality of life of patients with heart failure with ejection fraction retention. The results showed that the addition of Qiliqiangxin capsule on the basis of conventional Western medicine treatment did have a curative effect on improving the quality of life of patients with HFpEF, and no adverse reaction was found to increase.

The above studies show that Chinese patent medicine has a considerable effect of traditional Chinese medicine decoction. Chinese patent medicine is derived by fixing the change of traditional Chinese medicine decoction. Compared with traditional Chinese medicine decoction, it is more convenient for patients to take and has a high degree of acceptance. However, because it is a fixed dosage form and prescription, dialectical treatment is fixed, and it is difficult to add and subtract in clinical use, so there is no flexibility of traditional decoction. Therefore, clinical combination with patients with chronic heart failure can improve the symptoms and quality of life of patients with CHF.

5.2. Intravenous preparations and related studies

The intravenous preparations for the treatment of chronic heart failure in the literature included Shenfu Injection, Shenmai Injection, Huangqi Injection, Shengmai Injection, Yiqifumai Injection, Shuxuening Injection, Danshen Chuanxiongqin Injection, Danshen Polyphenol Injection, Xinmailong Injection and so on. Huijun Ni etc. [14] compared the efficacy of Shenfu injection in the treatment of 60 patients with chronic heart failure (heart-kidney yang deficiency syndrome) and its effect on serum N-terminal pro-brain natriuretic peptide (NT-proBNP) level and explored its mechanism. The results showed that the serum NT-pro BNP level of the observation group was lower than that of the control group after treatment, and the total effective rate of the observation group was 91.67%. On the basis of conventional medical treatment, Shenfu injection had obvious therapeutic effect on chronic heart failure (heart-kidney yang deficiency syndrome).

6. Chinese medicine cardiac rehabilitation (CR) treatment

CR refers to the exercise rehabilitation training for CHF patients who need cardiac rehabilitation after medical assessment on the basis of professional standard treatment, and comprehensive guidance and

education on their lifestyle, spirit and psychology, so as to correct the cardiovascular risk factors of CHF patients, improve their cardiovascular function, control the symptoms of CVDs, reduce the physiological and psychological impact of CVDs on the body, improve the psychological and occupational status of patients and improve the quality of life of patients, so that CHF patients can better return to their families and integrate into society. Heart failure can easily reduce the physical activity of patients, increase the demand for rehabilitation treatment, and gradually increase the therapeutic effect [15]. Xiaoyan Zhang etc.[16]observed the effect of cardiac rehabilitation exercise on cardiac function in 60 patients with chronic heart failure. The results showed that the use of cardiac rehabilitation exercise in patients with chronic heart failure can effectively improve the clinical cardiac function of patients, shorten the average hospitalization time of patients, which is worthy of clinical promotion. Traditional exercises such as Baduanjin and Tai Chi are commonly used in cardiac rehabilitation. Cardiac rehabilitation exercise has also been proved to improve the exercise tolerance of CHF patients, improve their cardiopulmonary function, and then improve the quality of life of CHF patients.

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