

Exploration of the Treatment of Hypothyroid Heart Disease by Dredging – Tonifying Method

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Abstract Hypothyroid heart disease is a syndrome that has a deficiency origin and an excess superficiality. Deficiency in origin is typified by a deficiency of kidney yang primarily, and the fundamental objective of treatment should be "regulating and tonifying". An excess of superficiality is closely related to phlegm, dampness, blood stasis, *etc.* The most appropriate treatment is a combined method of dredging and tonifying, which should be the primary approach. It is crucial to adhere to the theoretical principles of both dredging and tonifying in the treatment plan. This approach allows for the treatment of both the underlying cause and the presenting symptoms, which can facilitate the harmonization of qi and blood.

Key words Hypothyroidism, Heart disease, Dredging-tonifying method, Yang deficiency and blood stasis

1 Introduction

Hypothyroid heart disease is an endocrine disorder that is characterized by a low metabolic rate, which is accompanied by cardiac damage. This damage is the result of deficiencies in thyroid hormone secretion, synthesis, or bioefficacy. Hypothyroidism can result in a reduction in cardiac output and an elevation in systemic vascular resistance, which can impact cardiac contractility, vascular resistance, blood pressure, and heart rhythm. In contrast, the occurrence of impaired myocardial relaxation, decreased heart rate, and decreased output per beat can result in the development of heart failure in patients with hypothyroidism^[1]. According to the pathophysiological characteristics of deficiency at the origin and excess at the superficial level, the author conducts an analysis of hypothyroid heart disease utilizing the dredging-tonifying method.

2 Etiology and pathogenesis

In accordance with the symptomatic manifestations, hypothyroid heart disease can be classified into the categories of edema, palpitation, and consumption within the framework of traditional Chinese medicine. As stated by Wen Jianhua^[2], hypothyroid heart disease is predicated on kidney yang deficiency, with the disease manifesting in the kidney, heart, and spleen, with the kidney serving as the primary locus of pathology. The development of hypothyroid heart disease is linked to hypothyroidism, with the underlying cause of hypothyroidism also attributed to kidney yang deficiency. The kidney is responsible for regulating water balance within the body. When there is a deficiency or disorder of kidney yang, or of the body's fluids, edema may result. The kidneys represent the foundation of the innate system, while the spleen and stomach constitute the foundation of the acquired system. A defi-

ciency in kidney yang can impede the nourishment of the acquired, while a deficiency in spleen function can hinder the transport and transformation of water-dampness. This can result in the retention of fluid within the body, leading to swelling and loose stools. When the spleen and kidney are deficient in yang and lack the capacity to transport and transform, the accumulation of phlegm and retained fluid within the body can occur. The accumulation of pathological products, including phlegm, retained fluid, water, and dampness, impedes the flow of qi. When the qi is in a state of stagnation, it is unable to effectively transport the blood, leading to the formation of qi stagnation and blood stasis. A deficiency of yang and an excess of cold will result in cold stagnation, which in turn causes heart pulse agitation to be weak, leading to poor blood circulation and stasis in the heart. A deficiency in kidney yang can result in impaired thermoregulatory and circulatory functions, leading to venous and collateral congestion. This can manifest as chest paralysis and cardiac discomfort in patients. Consequently, in instances where cardiac injury arises subsequent to a prolonged course of hypothyroidism, that is to say, when the condition ascribed to the heart in traditional Chinese medicine is applicable, the patient will present with symptoms of generalized metabolic decompensation resulting from a deficiency of spleen and kidney yang, such as fatigue and edema, in addition to symptoms of cardiac yang insufficiency and internal stagnation of blood stasis, including chest tightness, shortness of breath, and alterations in the electrocardiogram.

In conclusion, although patients with hypothyroid heart disease are predominantly characterized by a deficiency of yang in the heart, spleen and kidneys, there is a frequent combination of water-rheum internal collection and tangible evidence of blood stasis.

3 Treatment based on syndrome differentiation and implementation of both dredging and tonifying

3.1 Dredging and regulating therapy Hypothyroid heart disease manifests in the heart, spleen, and kidney. In cases where the treatment is based on the heart, the initial step is to identify

the underlying deficiency. In his book *A Treatise on Blood Troubles*, Tang Rongchuan provides a detailed account of the relationship between phlegm and blood stasis, confirming that these two phenomena often reinforce each other. Blood stasis is a pervasive phenomenon throughout the course of the disease, and the optimal therapeutic approach entails the activation of blood circulation, the removal of blood stasis, and the regulation of blood vessel. In instances where the typical symptoms of qi stagnation and blood stasis, such as chest tightness and chest pain, are observed in a clinical setting, the administration of pharmacological agents, including Radix Salviae Miltiorrhizae, Rhizoma Chuanxiong, Notoginseng Radix, Caulis Spatholobi, and Carthami Flos, can be employed to invigorate blood and regulate menstruation, thereby eliminating blood stasis and providing pain relief.

The disease progresses at a gradual pace, with gradual and insidious onset, and the clinical symptoms that manifest vary considerably. In addition to the aforementioned manifestations of heart-blood stagnation throughout the disease, there are also solid manifestations such as edema due to spleen-kidney yang deficiency, constipation due to spleen-stomach weakness, and boredom and insomnia due to liver-qi disharmony. These should also be treated with the method of dredging and regulating. In the event that the patient presents with symptoms indicative of water-rheum internal collection of spleen and kidney yang deficiency, accompanied by edema of the face and lower extremities, a course of treatment involving Polyporus, Indigo Naturalis, Rhizoma Alismatis, Semen Coicis, and other selected medications may be considered. This approach, known as dredging and regulating, is designed to facilitate the removal of excess dampness and promote diuresis. In cases where the spleen is deficient and the abdomen is distended, and the patient is unable to indigest food in the stomach and intestines, the administration of Crataegi Fructus, Fructus Hordei Germinatus, fried Semen Raphani, and other similar preparations may facilitate the passage of food stagnation. In the event of symptoms indicative of chest paralysis and cold pain due to cold condensation of heart veins, the addition of Cinnamomi Ramulus and Bulbus Allii Macrostemonis may prove beneficial in terms of warming the yang and facilitating the resolution of paralysis. In instances where the symptoms of chest tightness and dystocia are accompanied by qi depression, the use of Radix Bupleuri, Radix Curcumae, Pericarpium Citri Reticulatae Viride, Fructus Toosendan, and Rhizoma Corydalis can facilitate the alleviation of pain through the stimulation of liver function and the enhancement of qi circulation.

3.2 Therapy for invigoration The clinical manifestations of hypothyroid heart disease include fatigue, coldness, bradycardia, weak heart muscle contraction, anorexia, abdominal distension, and constipation. The primary symptoms can be identified as kidney yang insufficiency, spleen yang deficiency, and heart yang inactivity. The kidney is the fundamental yang organ for the internal organs. Insufficient kidney yang without warmth is characterized by cold limbs and mental instability. The treatment of this condition involves warming the kidney yang, which can be achieved through the use of Herba Epimedii, Radix Rehmanniae Preparata, Corni Fructus and other medicines. The spleen is the primary or-

gan responsible for transportation within the body. When spleen yang is insufficient, there is a lack of transportation, which can result in a decreased intake of food, the formation of cold symptoms, weakness, and lethargy. The treatment approach involves warming the middle and strengthening the spleen. This can be achieved through the administration of Dioscoreae Rhizoma, Poria, Rhizoma Atractylodis Macrocephalae, Semen Nelumbus, Lablab Semen Album, and other drugs. A deficiency of heart yang can result in impaired blood circulation, stagnation, mental restlessness, and trance-like states. The recommended course of treatment is to tonify the heart yang, which can be achieved through the addition of Cinnamomi Ramulus, Radix Aconiti Lateralis Preparata, and other drugs. In the event of a lack of harmony between heart yin and heart yang, accompanied by the emergence of symptoms such as palpitations, heartburn, insomnia, and others, it is recommended to employ a symptomatic treatment plan aimed at nourishing heart yin or benefiting qi and warming yang. This may entail the incorporation of Semen Ziziphi Spinosa, Semen Platycladi, Longan Arillus, and other similar agents, with the objective of nourishing the heart's blood and promoting mental tranquility.

4 Case study and analysis

The patient, a 67-year-old female, was initially observed on December 28, 2023. She had been experiencing fatigue and weakness for approximately one year, accompanied by occasional chest tightness and cardiac pain. Additionally, there had been a 5 kg weight gain over the past three months. The symptoms included edema, fatigue, weakness, occasional chest tightness and heart pain, accompanied by discomfort in front of the neck, fear of cold and cold limbs, long and clear urine, frequent nocturia, abdominal distension after eating, loose stools, and the ability to sleep at night. The tongue was pale, chubby, and white in color, and the pulse was dull and weak in intensity. The patient denied a history of chronic diseases, including hypertension and coronary artery disease. The following data pertains to thyroid function: FT3: 5.17 pmol/L, FT4: 10.67 pmol/L, TSH: 9.30 μ IU/mL. The electrocardiogram (ECG) revealed a sinus rhythm, a left deviation of the electrical axis, and nonspecific T-wave abnormalities. Cardiac ultrasound revealed the presence of aortic atherosclerosis, with an ejection fraction of 47%. A diagnosis of hypothyroid heart disease was rendered by Western medical practitioners. A diagnosis of deficiency labor was rendered according to the tenets of traditional Chinese medicine. This diagnosis was based on the presence of spleen and kidney yang deficiency, blood stasis, and obstruction of collaterals. The treatment should be designed to warm the spleen and kidney, remove blood stasis, and clear the channels. The formula was augmented with the following medicinal ingredients: 15 g each of Radix Morindae Officinalis, Semen Cuscutae Chinensis, Rhizoma Curculiginis, Fructus Psoraleae, Epimedii Folium, Lycii Fructus, Poria, and Fructus Ligustri Lucidi, as well as 30 g each of Herba Leonuri, Astragali Radix, and Herba Cistanches. A total of seven doses of the decoction were administered, with each dose taken once per day, in the morning and eve-

ning, after a meal. Additionally, herbal cake separated moxibustion at Shenque acupoint should be administered three times per week to warm the spleen and strengthen the kidney.

A second diagnosis was rendered on January 4, 2024. While the patient's symptoms of fatigue, chest tightness, and heart pain, as well as coldness and cold limbs, had been improved from the previous assessment, there was still evidence of peripheral swelling, discomfort in the front of the neck, frequent nocturnal urination, stools that were soft and sticky, and abdominal distension after eating. The tongue was pale and chubby with white moss-like coating, and the pulse was dull and thin. The recommended course of treatment was to tonify the spleen and kidney, warm the yang, and promote diuresis. The initial diagnosis prescription was augmented with 15 g of *Dioscoreae Rhizoma* and *Rhizoma Atractylodis Macrocephalae*, with seven doses.

On January 11, a third diagnosis was rendered, which revealed that the previously observed symptoms, including a swollen body, frequent urination at night, soft and sticky stools, abdominal distension after eating, and discomfort in front of the neck, had significantly improved. Additionally, the patient exhibited good sleepiness and normal defecation. Furthermore, the presence of a thin white tongue coating and a slightly strong pulse was noted. It is recommended that the patient should continue to take the medication prescribed in the second diagnosis, at a dosage of 14 doses.

Note: The patient was elderly and debilitated, exhibiting deficiencies in kidney yang and yin, as well as an absence of spleen yang. This resulted in impaired water and grain transportation, and a disruption in the functioning of qi, which in turn hindered the ability to warm and transform water-dampness. The symptoms, including puffiness, fatigue, coldness, abdominal distension after eating, long and clear urine, frequent urination at night, and loose stools, may indicate a deficiency of yang in the spleen and kidneys. On occasion, patients may experience chest tightness and heart pain, which can be attributed to the impassability of the heart veins and blood stasis, as well as obstruction of the collaterals. In such instances, the addition and subtraction of the hypothyroid heart disease formula was employed to warm up the spleen

and kidney, and to dissolve blood stasis and clear the collaterals. In second diagnosis, the patient was characterized by the persistence of symptoms such as abdominal distension and diarrhea, indicative of continued spleen and kidney yang deficiency. Additionally, there was an inability to effectively transport and transform water-dampness. To address these concerns, *Dioscoreae Rhizoma* was incorporated to fortify kidney qi, bolster the spleen and stomach, and *Rhizoma Atractylodis Macrocephalae* was included to alleviate edema and distension. At the third diagnosis, the patient exhibited a notable improvement in her symptoms. Therefore, she was instructed to continue with the original treatment plan in order to consolidate the therapeutic effect.

5 Conclusions

Hypothyroid heart disease is the condition that is rarely accompanied by a single, isolated symptom. The utilization of pharmaceuticals as a solitary intervention to address this condition (tonifying deficiency or reducing excess) is not advised. According to the patient's specific pulse manifestations, emphasis may be placed on tonifying heart yang, kidney yang, or spleen yang. The application of obstruction-removing therapy will facilitate the removal of obstructions, resolve phlegm, promote the resolution of qi stagnation, or address the removal of blood stasis. The combined method of dredging and tonifying, which considers both the negative and positive aspects, emphasizes the harmony between the body and spirit. It treats the five zang viscera collectively to ensure the harmonious flow of qi and blood throughout the body and maintain a balanced yin and yang.

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