

Zhang Xiaoke's Experience in the Treatment of Gout Combined with Type 2 Diabetes

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Abstract: Gout is an independent risk factor for the occurrence of type 2 diabetes mellitus, and patients with type 2 diabetes mellitus are easily complicated with gout. The two affect each other and often occur in combination. According to the etiology and pathogenesis of deficiency of the spleen and kidney are often deficient and moisture and blood stasis hinder the normal operation of the meridians, professor Zhang Xiaoke put forward the method of "clearing dampness and removing turbidities, promoting blood circulation and clearing collaterals", which has a significant effect on clinical treatment of gout combined with type 2 diabetes.

Keywords: Type 2 diabetes mellitus; Gout; Hyperuricemia; Uric acid

1. Introduction

Gout is an inflammatory response caused by abnormal purine metabolism and impaired uric acid excretion leading to the deposition of urate crystals in the joint, and the first typical manifestation is redness, swelling, severe pain and elevated skin temperature in the affected joint. Type 2 diabetes mellitus is a metabolic disease caused by relative or absolute insufficiency of insulin secretion, often characterized by elevated blood sugar and insulin resistance. With the improvement of living standards and the increase in the intake of high-protein foods, the incidence of gout combined with type 2 diabetes is increasing year by year, seriously endangering human health, and the prevalence of diabetes in gout patients is 26%^[1]. Studies have confirmed that for every 1 mg/dl increase in serum uric acid, the risk of type 2 diabetes increases significantly by 6%, and elevated blood glucose can also lead to the occurrence of hyperuricemia. It can be seen that the combination of the two diseases is becoming more and more common.

Zhang Xiaoke tutor has long been engaged in the diagnosis and treatment of gout and common diseases of the elderly, multiple diseases, in the treatment of gout, senile hypertension and other internal diseases have quite insights, the tutor in the long-term clinical work summarized the gout combined with type 2 diabetes patients spleen and kidney deficiency, wet stasis obstruction of the pathogenesis characteristics, put forward the "damp and turbidity, invigorating blood circulation" method, the effect of treating gout combined with type 2 diabetes is remarkable, this article through the introduction of gout and type 2 diabetes correlation, Western medicine pathogenesis, Traditional Chinese medicine etiology mechanism, Summarizing the experience of supervisor Professor Zhang Xiaoke in the treatment of gout combined with type 2 diabetes, we will expand the clinical treatment ideas.

2. Study of the pathogenesis and influencing factors of gout combined with type 2 diabetes in Western medicine

The pathogenesis of gout combined with type 2 diabetes is complex and has not yet been fully understood, and it is believed that it may be the result of a combination of factors and is closely related to individual differences. In recent years, a large number of studies have been done on the pathogenesis of gout combined with type 2 diabetes, and it is believed that it is mostly related to insulin resistance. Hyperuricemia mediates increased insulin resistance and decreased insulin release through different underlying causative factors, ultimately leading to type 2 diabetes. In addition, UA increases the production of reactive oxygen species, resulting in deletion of transcription factors required for insulin gene expression, leading to decreased insulin production and secretion, leading to the occurrence of type 2 diabetes^[3].

The influencing factors of gout combined with type 2 diabetes have become research hotspots in recent years, mainly summarized as follows: 1. Diet structure: Gout and type 2 diabetes are metabolic diseases, and their incidence is closely related to diet, with changes in lifestyle and diet structure, high fat, high purine, high sugar diet and alcohol consumption increase, and the incidence of gout combined with type 2 diabetes is increasing year by year^[4,5]. 2. Genetic factors: both have typical familial genetic phenomena, and most of them are polygenic, and both are based on genetic susceptibility and are affected by dietary or environmental factors^[6]. 3. Obesity, hyperlipidemia: obesity, lipid metabolism disorders have an impact on uric acid levels and glucose metabolism. Du Yiping^[7] found that the serum total cholesterol, triglycerides, low-density lipoprotein, and body mass index of the hyperuricemia and type 2 diabetes group were significantly higher than those in the normal uric acid group. Li Ranhao et al.^[8] studies have found that overweight or (obesity), lipid metabolism disorders increase the risk of hyperuricemia in patients with type 2 diabetes. 4. Sex, age: Studies have found that^[9] the probability of gout combined with type 2 diabetes in men is 2.1 times higher than that of women, and the increase in age is also a risk factor for gout and diabetes.

3. Traditional Chinese Medicine etiology

The name of "gout" was first seen in Tao Hongjing's *Famous Doctors*: "Qiang huo, sweet taste, mild temperature, non-toxic." Cure the thief wind, the white knot gout has no long new...". According to its clinical characteristics, Chinese medicine classifies it into the categories of "paralysis", "calendar festival" and "white tiger calendar festival". Type 2 diabetes falls under the category of "thirst quenching" in Traditional Chinese medicine, and the name of the "thirst quenching" disease first appears in the *Theory of Suwenqi* ▪ *Disease*, Yun: "Spleen fever ... This man will count the number of luscious and fatty eaters, and the fat will make people heat up, and the sweet ones will make people full, so that his qi will overflow and turn to quench his thirst." Successive generations of physicians have studied thirst quenching and paralysis, but fewer studies have been studied on thirst quenching and paralysis. Zhang Xiaoke tutor believes that the root cause of the disease is mostly related to spleen and kidney deficiency, dietary irregularities, spleen and kidney deficiency, affecting the operation of qi and blood, abnormal lifting and lowering of the qi machine, causing the water valley to be incapable of transport, coupled with poor diet, resulting in phlegm, damp heat, congestion accumulation in the body, blocking the meridians, joints, and the disease, which is summarized as follows.

3.1. Diet is not moderate, like to eat fat and sweet

The *Treatise on Strange Diseases* records: "Where this fatness is born, this person will eat luscious and fatty" "The fat person makes people hot inside, and the sweet one makes people full, so his qi overflows and turns to quench his thirst." It can be seen that poor diet is the trigger for thirst-quenching. The body is obese, and likes to eat fat and sweet taste, fat and thick and greasy is easy to hinder the spleen, resulting in spleen loss of good luck, shengqing and turbidity dysfunction, transport water wet dysfunction^[10]. This leads to the accumulation of water in the body, resulting in pathological products such as water wet sputum drinking^[11]. Wet turbidity is easy to stop in the body, depressed and heat, over time to cause damp heat accumulation, blocked in muscles and joints, as gout.

3.2. Spleen and kidney deficiency, sputum oozy endogenous

Traditional Chinese medicine believes that "the kidney is the innate foundation, the main gasification, the spleen is the acquired nature, the main transport". The infusion and excretion of fluids in the human body all depend on the function of the spleen and kidneys. If the spleen and stomach are weak, the spleen and stomach are weak, the rise and fall is abnormal, the water drink cannot be dispersed, the concentration is concentrated in the middle coke into wetness, the heat is long-lasting, the damp heat is concentrated, and the flow is injected into the joints and joints, resulting in poor operation of joint qi and blood^[12]. The spleen, in turn, is the source of phlegm, causing the phlegm to coagulate and stagnate in the blood veins, which is stored for a long time without being able to drain^[13], and eventually develops gout.

3.3. Damp heat is condensed, and stasis is condensed

The *Taiping Shenghui* recipe says: "The white tiger wind disease is the poison of wind and cold and heat and humidity, and because of the weakness, it will be irrational, subject to this wind and evil, the meridians are stagnant, the blood and qi are not good, the animals are between the bone joints, or the

limbs." Hence the name White Tiger Rheumatism. For the first time, the importance of the pathogenesis of damp heat stasis was proposed. Damp heat and yongsheng are inhibited, flowing into the joints and skin holes, hindering the operation of qi and blood, or blocking the qi machine, the gas machine is not smooth, resulting in blood stasis^[14], and stasis is blocked by the joint tendons and the disease occurs.

4. Traditional Chinese Medicine differentiation

At present, Chinese medicine lacks a unified evidence type for gout combined with type 2 diabetes, and various doctors express their own opinions. Wu Yongyan^[15] et al. conducted a statistical analysis of the traditional Chinese medicinal syndrome types of 80 patients with gout combined with type 2 diabetes, and found that the phlegm stasis resistance type was more common (36.3%), followed by spleen deficiency and damp resistance, damp heat and humidity, and cold and wet paralysis. Luo Zhen^[16] et al. found that patients with hyperuricemia and type 2 diabetes had higher sputum, stasis and turbidity than diabetic patients with normal uric acid. By Lu sha^[17] et al., hyperuricemia combined with type 2 diabetes is divided into four types according to TCM differentiation: wind cold, dampness and fever, phlegm stasis obstruction, qi and yin two deficiency, yin and yang two falsehood. According to the clinical characteristics of the patients, Zhang Xiaoke's supervisor found that the disease was mostly confirmed by damp heat and sputum stasis, so the clinical effect of the self-quasi-gout prescription was significant in the treatment of gout combined with type 2 diabetes.

5. Diagnosis and treatment features

According to his etiology and his own clinical experience, Zhang Xiaoke proposed the method of "moisturizing and discharging turbidity and activating blood circulation", focusing on the basis of liaising wet turbidity and activating blood circulation, while taking into account the tonic spleen and kidney. The teacher pointed out that the evil of damp heat is the key to the occurrence of this disease, and made good use of yellow cedar, cangshu, poria, coix kernel and other medicines to clear heat and dampness, because of the situation, the dampness and turbidity, to give the evil a way out. Wet evil causes disease, its disease is difficult to heal, and long-term illness causes stasis, so in the treatment of good use of blood stasis method. Zhang Xiaoke's mentor often uses insect drugs such as whole scorpions to activate blood circulation, and the whole scorpion is good at scattering the meridians, which has the effect of attacking poison and scattering knots and relieving pain, especially for the treatment of rheumatic paralysis, and even the stubborn paralysis effect on rheumatic paralysis for a long time, tendon and vein cramps, and joint deformation is quite good. It is accompanied by rattan drugs such as chicken blood vine and stretching grass, and plays a joint effect of activating blood stasis and relieving pain. Teacher Zhang Xiaoke also pointed out that while attacking evil spirits, it is necessary to supplement the spleen and kidneys, and one should cultivate the heavens one after another, so as to consolidate the righteous qi and drive away evil spirits. The second is that the spleen can be dry and wet, the spleen and kidneys can be healthy, and the wet and turbid can be dissolved

6. Case examination

Zhou Mou, male, 40 years old, date of treatment On November 4, 2020, due to "bipedal first metatarsophalangeal joint intermittent pain for more than 4 years, aggravated for 3 days" in the Department of Endocrinology, the First Affiliated Hospital of Shaanxi University of Traditional Chinese Medicine, traced the patient's medical history, self-reported gout history for more than 4 years, bipedal first metatarsal joint pain intercross, blood uric acid up to 548 $\mu\text{mol/L}$, intermittent oral nonbutstatatha 40mg once a day, poor control of blood uric acid level. 3 days ago, the patient had aggravated pain in the first metatarsophalangeal joint of the right foot due to dietary fat, joint swelling and pain in the affected area with increased skin temperature, difficulty in movement, and the present symptoms were: clear, mental, no obvious dry mouth, thirst, polyuria, no stomach discomfort, good diet, sleep well, the size is normal, pale reddish moss yellow grease tongue, deep pulse string. Past history: more than half a year of type 2 diabetes mellitus, oral GWAVD 0.5g three times a day, acarbose 50mg three times a day (chewed during meals), fasting blood glucose control at 7-8mmol/L. Auxiliary examination: body temperature 36.5°C, blood pressure 124/86mmHg, urine pH 5.5, blood uric acid 425.5 $\mu\text{mol/L}$, liver function, blood routine no abnormalities. Foot CT flat scan: bilateral first metatarsal sulcus parathyroidite deposition. Right foot joint positive oblique position: local low-density shadow of the 5th toe, root bone bone hyperplasia. Western medical diagnosis: 1. Tophi 2. Acute onset of gouty arthritis type 3.2 diabetes.

Diagnosis of traditional Chinese medicine: 1. Paralysis 2. Quench thirst. Evidence type: Damp heat contains evidence. Treatment: clear heat and dampness, through the network to relieve pain. Add and subtract from the self-imitating gout formula, the drug composition is as follows: yellow cedar 30g, cangshu 30g, soil poria 30g, acacia 30g, wellingxian 30 g, mountain mushroom 30 g, tangerine peel 20 g, qing banxia 20 g, coix kernel 30 g, stretcher grass 10 g, chicken blood vine 30 g, whole scorpion 3 g, 14 doses, decoction, one dose a day, divided into two warm doses in the morning and evening. Patients are advised to avoid wind and cold, eat a low-sugar, low-purine diet, drink 2000ml of water daily to promote uric acid excretion, and avoid drinking fructose-containing beverages.

Second diagnosis: On November 18, 2020, joint pain was relieved, no fatigue, thirst, dry mouth, no stomach discomfort, good diet, sleep well, two stool adjustment, blood uric acid 272umol/L, self-measured fasting blood glucose 6.4mol/L, the original prescription was taken 7 doses, consolidating the therapeutic effect.

By word:

This disease belongs to the category of traditional Chinese medicine "paralysis combined with thirst quenching", the patient's middle-aged male, gout history for more than 4 years with blood glucose rise for more than half a year, gouty arthritis acute attack, ask the patient's medical history, because the patient eats fat gan lead to acute attack of gout arthritis, diet fat gan, mellow wine thick taste, damage to the spleen and stomach, spleen and stomach transport loss, damp heat connotation, wet turbid stasis in the blood veins, muscles, flowing into the joints, then see metatarsophalangeal joint swelling and pain, the disease. Instructor Zhang Xiaoke emphasized that in the treatment, "dampness and turbidity, invigorating blood circulation" is the main method, and the party uses self-imitating gout to add and subtract. Fang Zhongcang, Huang Cedar takes the meaning of "Two Miaosan" to clear heat and dry wetness, while adding Poria, Coix Kernel, Amaranth dispels dampness and turbidity, removes paralysis and relieves pain, Tangerine peel, Half Summer take "Er Chen" meaning to dry and humidify phlegm, Rational Qi and Zhong, Mountain Ci Mushroom, Welling Immortal to reduce swelling and loosen knots, dispel dampness and pain, the whole party does not forget to activate blood circulation while clearing heat and dampness, so add chicken blood vine, stretch tendon grass, whole scorpion to activate blood stasis, through the network to relieve pain. The combination of various drugs has the effect of moisturizing turbidity and relieving pain, and the clinical effect is remarkable.

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