

Progress Research into the Treatment of Newly Diagnosed Type 2 Diabetes with Traditional Chinese Medicine

Chaoyang Chen

*Department of Chinese Medicine, Zhuji People's Hospital of Zhejiang Province, Zhuji, China
2659253277@qq.com*

Abstract: For newly diagnosed type 2 diabetic patients, the treatment of the illness is very important, which is related to the patient's condition control. Scientific and effective treatment can delay the progression of the patient's illness, reduce the incidence of complications, and improve the quality of life of the patients. Traditional Chinese medicine is a hot research topic in recent years. It is effective in treating type 2 diabetes. Traditional Chinese medicine believes that diabetes is highly similar to the symptoms of diabetes, such as thirst elimination and spleen bleeding in the classics of traditional Chinese medicine. In terms of treatment, it pays attention to the mechanism of drying dampness, invigorating spleen, replenishing qi and nourishing yin and replenishing spleen and kidney. This paper is about the research progress of using traditional Chinese medicine in the treatment of newly diagnosed type 2 diabetes.

Keywords: Traditional Chinese Medicine; Newly diagnosed type 2 diabetes; Research progress

1. Introduction

Newly diagnosed type 2 diabetes mellitus has a significant impact on human health. It is a common primary metabolic disease in China. Patients' blood glucose level is higher than normal level, and gradually damage the small blood vessels and tissues of patients. [1] Newly diagnosed type 2 diabetes mellitus cannot be completely cured at present. After the onset of the disease, we should insist on controlling blood sugar by taking drugs, keep the blood sugar within normal limits, and inhibit the aggravation of the patients' condition. Especially in patients with newly diagnosed type 2 diabetes, the treatment and control of the disease should be very cautious. The theory of traditional Chinese medicine treats the newly diagnosed type 2 diabetes as the range of diabetes and spleen deficiency, and considers that treatment should be started from many aspects, and effective individualized treatment should be adopted according to the patient's syndrome type. The purpose is to deeply control the factors causing the increase of blood glucose level, promote the effective correction of the patient's condition and fully improve the patient's organ function. [2-4]

2. Etiology and Pathogenesis

2.1 Visceral Disorder

The occurrence of newly diagnosed type 2 diabetes is related to the dysfunction of the viscera in the body. It is mainly due to the dysfunction of the spleen and stomach caused by the function of patients, resulting in abnormal functions of other organs, and the body cannot circulate smoothly to raise the level of blood sugar. [5, 6] China's medical classics "Su Wen" categorized type 2 diabetes into thirst for diabetes, and concluded that the onset of the disease was due to the fact that the patients were happy to eat fat and the number of food was sweet and the internal heat was full, which gradually caused the overflow of the Qi and continued to develop into diabetes. This shows that the first cause of type 2 diabetes is spleen and stomach dysfunction and injury. [7] According to clinical research, diabetes patients have the Qi of stagnation and heat in the early stage of onset, and the continuous development shows the condition of deficiency and loss. The condition is mainly caused by the pathogenesis of internal heat, medium fullness, medium coke qi depression, spleen deficiency and stomach heat. For a long time, the patient has symptoms such as poor Qi mechanism, inability of body fluid transportation and distribution, and fine substances accumulate in the patient's spleen and generate heat. [8, 9] Medical

scientists believe that some patients with type 2 diabetes suffer from six internal organs, which gradually lead to gastrointestinal heat accumulation and liver and gallbladder drainage. The patient's Triple Energizer axis cannot operate smoothly, the bladder gasification is abnormal, the body fluid is normal and the distribution is disordered, resulting in a significant increase in the number of urination.

2.2 Insufficient Qi and Blood

Traditional Chinese medicine argues that patients with newly diagnosed type 2 diabetes are characterized by dryness heat, stagnation and stasis. The onset of the disease is due to the condition of yin deficiency in the patient's body. For a long time, it causes the disease of dryness and heat, which is closely related to the condition of improper diet, emotional disorder and physical weakness. According to relevant studies, the body of patients with diabetes does not rise, resulting in the loss of spleen Qi and cannot play the role of dispersing essence. This will cause lung qi disorder, yin deficiency, dryness and heat and spleen qi deficiency, which will gradually lead to the problem of non-rising of Qi in patients and the loss of power of solid intake. ^[10] Modern medical experts believe that diabetic patients have Yin deficiency and heat, Qi and yin deficiency, yin and yang two deficiency. According to the research, patients with type 2 diabetes have obvious symptoms of qi deficiency and yin deficiency and blood stasis, especially in patients with newly diagnosed type 2 diabetes. ^[11, 12] Qi deficiency, yin deficiency and blood stasis cause the patient's Qi not to change the taste, the body gradually produces the gas of evil, blocks the internal organs, veins and Qi machines, blocks the transportation of body fluid and blood gas, and gradually stagnates to generate heat and torment body fluid. In addition, the body's biochemical passivity or lack of source leads to the symptoms of thirst elimination.

2.3 Phlegm Dampness and Congestion

Patients with phlegm dampness and blood stasis have obvious symptoms of spleen deficiency and phlegm dampness. The movement of the body stops, generates Qi of phlegm dampness and blocks the operation of Qi machine in the body. For a long time, it will cause stagnation and heat, gradually resulting in blood stasis, aggravating the body fluid transport in patients, which is the key to the continuous progress of patients with diabetes. ^[13] According to clinical research, there is blood stasis in thirsty patients. They are thirsty because blood stasis blocks the vein and Qi mechanism, and the blood and gas in the human body promote each other. Blood stasis can lead to the lack of ventilation in the patient's body, resulting in the lack of water and body fluid and blood thirst, suggesting that the onset of newly diagnosed type 2 diabetes may be due to blood stasis. ^[14] Phlegm dampness can cause blockage in the body and gradually lead to stasis and phlegm heat. Especially in type 2 diabetes mellitus, the symptoms of spleen deficiency and dampness are obvious. For a long time, it will obviously consume the patient's Yin fluid, phlegm stagnation turns into fire and aggravate the patient's Yin fluid damage, resulting in the closure of meridians, the normal transmission of Yin fluid, and the patient's body cannot be effectively nourished, so it forms the disease of thirst elimination. ^[15, 16]

3. Syndrome Differentiation and Treatment

3.1 Drying Dampness and Strengthening Spleen

The treatment of dryness and dampness and invigorating the spleen mainly focuses on invigorating the spleen, clearing away heat and dampness, strengthening spleen temper and clearing the Qi of dryness and dampness in the depression. It is often treated with drugs of Supplementing Qi and invigorating the spleen and bitter, warm and dry dampness, which can treat the condition of spleen deficiency and dampness. The effect of drying dampness and invigorating spleen on treating newly diagnosed type 2 diabetes is remarkable. According to relevant research, the patients with early diabetes are characterized by damp heat, marked weakness, weakness of glucose tolerance, treatment of dampness and spleen, clearing away heat and dampness. ^[17, 18] According to relevant studies ^[19], the effect of Simiao particles on early type 2 diabetic patients is significant, which can effectively reduce the levels of FBG and PBG, FINS and HbA1c. HOMA-IR, IAI, BMI and other indicators of the patient were significantly improved, without adverse reactions. There were no abnormalities in blood routine, urine routine and stool routine, and there were no significant changes in liver and kidney function. This shows that Simiao particles can effectively correct type 2 diabetes patients with insulin resistance, reduce the blood sugar level and weight, and improve the patient's condition. Fangyong Simiao granule is mainly composed of Cortex Phellodendri, coix seed, Atractylodes macrocephala and Coptis chinensis.

Atractylodes macrocephala is a good medicine for clearing heat, dryness and dampness. *Coptis chinensis* can effectively remove the dampness and heat in the middle Jiao, and the effect of clearing heat and dryness is remarkable. Coix seed has the effect of strengthening the spleen, clearing heat and dampness. Berberine in *Coptis chinensis* can improve insulin sensitivity, and the drug components in *Atractylodes macrocephala* can reduce blood glucose level. Coix seed polysaccharides can significantly regulate the activity of carbohydrate metabolism enzymes, and can effectively reduce the degree of insulin resistance in diabetics.

3.2 Supplementing Qi and Nourishing Yin

The treatment of supplementing Qi and nourishing yin is mainly to replenish qi, clearing away heat and detoxification, nourishing yin and supplementing qi for patients. The prescription is mainly used to generate fluid and replenish qi, replenish qi and yin, clear away heat and detoxification, and nourish spleen and lung. The method of replenishing qi and nourishing Yin is effective in the treatment of newly diagnosed type 2 diabetes. This method can effectively regulate the viscera, yin and Yang of diabetic patients, promote the balance of viscera function and reduce the metabolic disorder of patients. It can significantly reduce the insulin resistance of patients, prevent the long-term high blood glucose level from damaging the organ function of patients, and improve the defect of insulin secretion. This has a significant effect on the decrease of glucose uptake rate of peripheral tissue, and can enhance the utilization rate of glucose and promote the stability of blood glucose level in patients [20, 21] According to relevant research, the method of Supplementing Qi, nourishing yin and activating blood circulation can effectively correct the glucose and lipid metabolism of patients and improve the islets of patients β For cell function, *Atractylodes rhizome*, *radix puerariae*, *Radix Scrophulariae*, *Rehmannia glutinosa*, *trichosanthin*, yam, *Astragalus membranaceus*, *Salvia miltiorrhiza*, red peony root, *Ligusticum chuanxiong*, *Angelica sinensis* and other drugs are used. Various drugs focus on nourishing Yin and generating fluid, invigorating spleen and dampness, clearing away heat and detoxification, eliminating annoyance and thirst, etc. [22, 23] *Radix Scrophulariae* has a significant effect of nourishing yin and generating fluid, which has the effect of clearing heat and cooling blood. *Rehmannia glutinosa* has a significant effect of nourishing yin and generating fluid. Yam can clear heat and generate fluid, and has an obvious effect of nourishing yin and Qi. *Trichosanthin* is a good medicine for generating saliva and quenching thirst. It also has the effect of clearing heat and purging fire. *Pueraria* is used to eliminate annoyance and quench thirst. Pharmacological studies of *Astragalus membranaceus* have shown that it has significant effects on anti-inflammatory, anti-tumor and lowering blood pressure. Saponins and polyphenol oxidase in yam have significant regulatory effects on blood lipid and can reduce the degree of atherosclerosis in patients. *Astragalus membranaceus* can significantly inhibit oxidative stress, enhance the free radical scavenging ability of the body, and have the effect of kidney protection. *Salvia miltiorrhiza* has a significant correction effect on insulin resistance. It can promote the rapid secretion of liver glycogen in patients, so as to reduce the blood viscosity of patients. At the same time, it has the effect of improving the deformation of red blood cells, and has the effect of resisting the aggregation of red blood cells in patients. According to relevant studies, the effect of adding flavor and quenching thirst formula on patients with intensive insulin treatment is significant, and the blood glucose level of patients is significantly reduced. It can shorten the time for patients to reach the blood glucose standard, and effectively improve the symptoms of polyuria, polydipsia and polydipsia. It can nourish yin, moisten dryness, clear heat and generate saliva with *Trichosanthin* and *pueraria*, gypsum and *Ophiopogon japonicus*, Yuzhu and *Coptis chinensis*, Shengdi, *Salvia miltiorrhiza* and ghost arrow feather. The effect of nourishing yin and blood is remarkable, and the effect of reducing blood sugar and antipyretic is obvious. Gypsum can clear away heat and detoxify. The combination of *Ophiopogon japonicus*, Yuzhu and Shengdi can nourish the lung and stomach. The combination of *Salvia miltiorrhiza* and ghost arrow feather can achieve the effect of promoting blood circulation and removing blood stasis. [24, 25]

3.3 Tonifying Spleen and Kidney

Tonifying the spleen and kidney is mainly used to tonify the Qi of the spleen and kidney. It is used for patients to tonify the spleen and kidney, activate blood circulation and dredge collaterals, dispel dampness and diuresis, and use drugs such as activating blood circulation and removing blood stasis, dredging collaterals and fixing astringency, tonifying the spleen and kidney. The method of tonifying spleen and kidney for the treatment of newly diagnosed type 2 diabetes is of high value. This method can effectively improve the patient's condition. The *Codonopsis pilosula* and *radix rehmanniae*, *Radix Astragali*, Chinese yam, *angelica*, *Fructus Corni*, *chuanxiong* and *Salvia miltiorrhiza*, earthworm,

Alisma orientale, motherwort herb and Gorgon fruit are effective in treating thirst, turbidity and other diseases. [26, 27] As the occurrence of thirst quenching disease is related to the spleen, stomach, lung, kidney and other organs of patients, drugs should promote blood circulation and discharge turbidity for patients. According to the prescriptions of the Medical Prescriptions, two to pills can nourish the liver and kidney and nourish yin. The prescription is composed of *Ligustrum lucidum* and *Herba prostrata*. Modern pharmacology points out that two to pill can extract ursolic acid and oleanolic acid, which can reduce blood sugar and improve the blood viscosity of diabetic patients. It can prevent or delay kidney damage in diabetic patients. [28] According to relevant research, *Erzhi Pill Combined with Astragalus membranaceus* can have the effect of diuresis and detumescence, strengthen the effect of tonifying spleen and kidney qi, promote the patient's body to generate blood while activating blood, and play the effect of tonifying both qi and Yin. It can fully balance the imbalance of yin and Yang of patients, and has the function of tonifying and not drying. [29] According to relevant clinical practice [23], When newly diagnosed type 2 diabetes mellitus invigorating spleen and kidney, we should pay attention to invigorating spleen and promoting dampness, clearing away heat and detoxicating, eliminating dampness and discharging turbidity. It can effectively eliminate the evil and toxin of turbid Qi in the patient's body, achieve the effect of dredging and regulating qi mechanism, improve the lifting function of the patient's spleen and stomach, give consideration to tonic and diarrhea for the patient, and promote the patient's organ function to return to normal circulation.

4. Conclusions

There is no diabetes in China's medical classics. Chinese medicine believes that the condition of type 2 diabetes is similar to those of diabetes, edema, turbid urine, and so on, and there is a certain limitation for the diagnosis of newly diagnosed type 2 diabetes. Traditional Chinese medicine contains great energy. Modern medical experts should pay attention to the in-depth understanding of TCM theory, take into account the condition of newly diagnosed type 2 diabetic patients, explore a unique theory, take the theory of TCM as the guiding ideology, combine modern science and technology to carry out comprehensive research, and give full play to the advantages of Chinese medicine. In addition, it is necessary to seek scientific and effective treatment methods for diabetes, and guide the diagnosis and treatment of type 2 diabetes.

References

- [1] Jiemin P, Yuejie X, Si C, et al. *The Effectiveness of Traditional Chinese Medicine Jinlida Granules on Glycemic Variability in Newly Diagnosed Type 2 Diabetes: A Double-Blinded, Randomized Trial [J]. J Diabetes Res*, 2021, 2021.
- [2] Wang Qi, Lei Tao, Xu Yuanying, et al. *Pathogenesis of type 2 diabetes combined with sarcopenia and advances in treatment with traditional Chinese medicine [J]. Journal of Shandong University of Traditional Chinese Medicine*, 2022, 46(01):129-136.
- [3] Wang Bo, Qiu Shixia. *Exploration of clinical study on treatment of type 2 diabetes by traditional Chinese medicine [J]. Chinese Community Physicians*, 2021, 37(23):94-95.
- [4] Zhao Bo, Zhang Yi, Wang Miao, et al. *Research progress of insulin resistance in type 2 diabetes treated with traditional Chinese medicine [J]. Modern journal of integrated traditional Chinese and western medicine*, 2021, 30(19):2162-2166.
- [5] Xie Haojie. *Evidence-based optimization and system evaluation of stage III diagnosis and treatment plan of type 2 diabetic nephropathy. See: Luo Ren, editor. (04), 2012.*
- [6] Mei Yan, Fan Yuqiang, Han Jing, et al. *Clinical study on 236 cases of type 2 diabetes related to psychological factors in tcm syndrome [J]. Shandong Medicine*, 2012, 52(32):46-47.
- [7] Fan Linlin, Zhang Fengli, Li Han, et al. *Research progress on the treatment of type 2 diabetes using TCM constitutional theory [J]. Journal of traditional Chinese medicine, Hunan*, 2019, 35(02):155-157.
- [8] Mu Qianqian. *Effects of liver, spleen and kidney combined therapy on glucolipid metabolism and PI-3K pathway in skeletal muscle of type 2 diabetic rats. See: Gao Sihua, editor. (10), 2013.*
- [9] Lin Litong. *Analysis of emotions and observation of psychological intervention in patients with type 2 diabetes. See: Zhu Zhangzhi, editor. (S1), 2013.*
- [10] Meng Xianyue. *Systemic evaluation of the effect of traditional Chinese medicine on pancreatic islet function in patients with type 2 diabetes and analysis of medication rules. See: Shi Yan, Yang Yufeng, ed. (02), 2021.*
- [11] Zhao Nengjiang, Dai Chunmei, Sun Wenjie, et al. *Interpretation of part of TCM treatment of*

- diabetes in China's Guidelines for the Prevention and Treatment of Type 2 Diabetes (2020 Edition) [J]. Chinese Journal of Diabetes, 2021, 13(04):309-311.*
- [12] Liang Ying, Dong Huijie. Exploration of the treatment of type 2 diabetes by traditional Chinese medicine based on the theory of intestinal flora [J]. *Chinese Folk Therapy*, 2021, 29(06):19-20+48.
- [13] Liu Guoling. Diabetes combined with hypertension related factors and TCM syndrome type distribution survey. See: Zhang Xiaoke, editor: (09), 2013.
- [14] Fang Song. Observation on therapeutic effect of tongyujian huafang in the treatment of type 2 diabetes mellitus with blood stasis obstructing collaterals [J]. *The world's latest medical information digest*, 2019, 19(A2):9-10.
- [15] Wang Juan, Chang Bo. Theoretical analysis of treatment of type 2 diabetes based on blood stasis [J]. *Tianjin University of Traditional Chinese Medicine*, 2017, 34(08):537-540.
- [16] Gao Gaiyun, Xu Na, Fan Hongwei. Effect of Tongyu Decoction on Type 2 Diabetes of Blood Stasis and Collateral Stasis Syndrome [J]. *Exploration of rational drug use in China*, 2018, 15(08):44-47.
- [17] Zhang Huang, Wu Xiaoqiu, Zhou Qinyun, et al. Effect of Spleen-Strengthening and Blood-Reducing Decoction on Type 2 Diabetes Complicated with Coronary Heart Disease and Its Influence on Insulin Resistance Index and Inflammatory Factor Levels [J]. *Clinical Medical Research and Practice*, 2021, 6(32):133-136.
- [18] Li Xiuming, Fan Ying. Spleen-Strengthening and Humidity-Clearing Decoction on the pancreatic β -cell function in patients with type 2 diabetes mellitus at dawn phenomenon [J]. *chinese medicine guides*, 2021,18(30):88-91+100.
- [19] Gao Zhao, Ran Yingzhuo. Effect of Simiao Granules on blood glucose and blood lipid in patients with type 2 diabetes mellitus of damp-heat retention in spleen [J]. *Jiangsu Traditional Chinese Medicine*, 2009,41(12):20-21.
- [20] Wen Zhiming. Exploration on the related factors of blood stasis syndrome in diabetes mellitus patients [J]. *Chinese Journal of Traditional Chinese Medicine*, 2007, (01):136-137.
- [21] Ding Li, Zhu Xiangying, Peng Jianyun, et al. Analysis of the effect of Spleen-Strengthening and Kidney-Benefiting Decoction on the nutritional status and immune function of diabetes [J]. *Chinese Journal of Traditional Chinese Medicine*, 2022, 40 (02):72-74.
- [22] Ma Ningning, He Juan, Xian Qiuhua, et al. Effect observation of supplementing qi and nourishing yin method combined with western medicine in treatment of type 2 diabetes [J]. *Medical theory and practice*, 2021, 34(07):1139-1141.
- [23] Zhou Weihui, Tang Aihua, Wang Minghui, et al. Effect of Supplementing Qi and Nourishing Yin Pill on Risk Factors of Major Conscientious Vascular Events in Patients with Type 2 Diabetes Mellitus Due to Deficiency of both supplementing qi and nourishing yin [J]. *hebei journal of traditional chinese medicine*, 2021,43(04):604-607+647. [24]
- [24] Chen Yuanjin. Effect of Supplementing Qi and Nourishing Yin Heat-Clearing Decoction on Iron Load in Patients with Type 2 Diabetes. See: Li Shuanglei, editor in chief. (02), 2021.
- [25] Sun Xiaojuan, Yan Liang. Clinical study of supplementing qi and nourishing yin huoxue decoction combined with metformin in the treatment of type 2 diabetes [J]. *New traditional Chinese medicine*, 2021, 53 (09):62-64.
- [26] Zou Chunfang, Jiang Xiaohong. Analysis of the efficacy of Spleen-Strengthening Kidney-Benefiting Turbidity-Clearing Decoction in the treatment of elderly type 2 diabetes combined with hyperuricemia [J]. *Basic Medical Forum*, 2021,25(16):2343-2345.
- [27] Guo Shan, Wan Xuanxuan, Xu Xiaowei. Meta-analysis and enlightenment of Chinese medicine of invigorating spleen and eliminating turbidity in the treatment of type 2 diabetes combined with hyperuricemia [J]. *Journal of traditional Chinese medicine, Hubei*, 2021, 43(06):58-62.
- [28] Huang Xiaomei, Liang Shuang, Zhou. Analysis of the wonderful use of Astragalus membranaceus from the Collection of Medical Prescriptions [J]. *Inner Mongolia Traditional Chinese Medicine*, 2020, 39(08):141-143.
- [29] Yi Fangliang. Study on the efficacy of modified Astragalus membranaceus Erzhi Pill in the treatment of chronic glomerulonephritis due to deficiency of both qi and yin [J]. *Guide of china medicine*, 2022,20(01):137-140.