

# Research Overview of Treating Gestational Hypertension Disease with the Methods of Strengthening the Spleen for Eliminating Dampness and Calming the Liver to Stop Wind

Jingheng Guo, Lihong Zhu\*

Shaanxi University of Chinese Medicine, Xianyang 712046, Shaanxi, China

\*Correspondence Author

**Abstract:** *Hypertensive disorders during pregnancy are common complications in the second and third trimesters, characterized by clinical manifestations of hypertension, proteinuria, and edema, and are one of the leading causes of maternal mortality. This article summarizes the clinical research on the treatment of hypertensive disorders during pregnancy with traditional Chinese medicine (TCM) in recent years, focusing on syndrome differentiation and treatment, as well as some external therapies, often in combination with Western medicine. The review primarily covers the research progress from the perspective of TCM on the etiology and pathogenesis, treatment, and medication of hypertensive disorders during pregnancy. It emphasizes that deficiency of the spleen is the fundamental cause of the disease mechanism, yin deficiency of the liver and kidney is the internal basis for the onset, and hyperactivity of liver yang is the key link in the onset. The treatment commonly employs methods that strengthen the spleen, promote diuresis, nourish yin, and calm the liver and extinguish wind. This provides innovative, safe, and effective treatment approaches for clinical practice.*

**Keywords:** Hypertensive disorders during pregnancy, Treatment according to syndrome differentiation, Traditional Chinese medicine, Integration of Chinese and Western medicine.

## 1. Introduction

Hypertensive disorders of pregnancy (HDP) are a common obstetric complication that seriously threaten the health and safety of mothers and fetuses. They include gestational hypertension (GH), preeclampsia-eclampsia (PE-E), pregnancy complicated with chronic hypertension, and chronic hypertension with superimposed preeclampsia [1]. Hypertensive disorders of pregnancy are unique to pregnancy, with a relatively high incidence and complex pathogenesis. They can lead to multiple organ dysfunctions throughout the body. In severe cases, convulsions, coma and other symptoms may even occur, which are the main causes of illness and death for mothers and fetuses. The aim and principle of treatment are to prevent eclampsia and reduce the occurrence of severe complications for mothers and fetuses. According to the results of a meta-analysis that included 1,377,448 research subjects, the prevalence of HDP in China is approximately 7.30% (ranging from 6.60% to 8.00%), and the prevalence is even higher among pregnant women in western and northern regions of China as well as among elderly pregnant women [2]. In recent years, numerous domestic and foreign studies have suggested that GH not only increases the risk of adverse outcomes for pregnant women and fetuses but may also have an impact on the long-term health of pregnant women and their offspring. This article will focus on the syndrome differentiation and treatment in the clinical application of traditional Chinese medicine, aiming to eliminate pathogenic factors, strengthen the healthy qi, and restore the balance of yin and yang in the body. Meanwhile, it emphasizes the ideas of syndrome differentiation and treatment, early prevention, and "preventive treatment of diseases", deeply analyzes the treatment mechanism, ensures the smooth progress of pregnancy, verifies the effectiveness and feasibility of syndrome differentiation and treatment of hypertensive

disorders of pregnancy with traditional Chinese medicine, and has the advantages of lowering blood pressure, improving clinical symptoms, having few side effects and adverse reactions, reducing the toxic and side effects of Western medicines, and protecting the growth and development of the fetus, thus providing new ideas and perspectives for the prevention and treatment of hypertensive disorders of pregnancy.

Hypertensive disorders of pregnancy refer to a group of diseases that occur after 20 weeks of pregnancy, manifested as hypertension, edema, and proteinuria [2]. In severe cases, convulsions, coma, and even impacts on heart and kidney functions can be seen. The causes of this disease are complex and are closely related to high-risk factors such as the age of pregnant women, multiple pregnancies or previous medical histories, as well as immune factors. In patients with hypertensive disorders of pregnancy, due to the spasm of systemic arterioles, the lumen becomes narrowed, the peripheral circulation resistance increases, the blood vessel walls and endothelial cells are damaged, and body fluids and proteins leak out, resulting in elevated blood pressure, proteinuria, edema, and even liver and kidney failure turning into severe cases.

## 2. The Understanding and Treatment of Hypertensive Disorders During Pregnancy in Traditional Chinese Medicine

Traditional Chinese medicine classifies hypertensive disorders of pregnancy into the categories of "zi zhong" (subcutaneous swelling during pregnancy), "zi yun" (dizziness during pregnancy), and "zi xian" (eclampsia during pregnancy). Although "zi zhong", "zi yun", and "zi xian" are different disorders in traditional Chinese medicine, there are

close connections among their etiologies, pathologies, and disease development trends.

## 2.1 Zi Zhong

"Zi zhong" refers to the swelling of the limbs, face, and eyes of pregnant women in the middle and late stages of pregnancy. In "Golden Mirror of Medicine - Key Points of Gynecology Mind Methods", due to the different parts of swelling, it is further divided into "zi qi", "zhou jiao", and "cui jiao".

### 2.1.1 The etiology and pathogenesis of zi zhong

Chinese medicine believes that "zi zhong" is mostly related to spleen deficiency, kidney deficiency, and qi stagnation. ZAN Yin in the Tang Dynasty wrote in "Effective Treatises on Obstetrics - Volume Three" that "The qi of the internal organs is originally weak [3]. Due to childbirth, it becomes severely weakened. Earth fails to control water, and blood disperses into the limbs, resulting in abdominal distension and swelling of the hands, feet, face, and eyes, as well as difficult urination." The root cause of "zi zhong" is closely related to the spleen and kidneys. "Shen's Compilation of Gynecology" holds that pregnancy edema is nothing more than "diseases of tangible water and intangible qi [4]". If the body is constitutionally deficient in the spleen or if eating too much cold and raw food damages the spleen yang, the spleen fails in its transportation and transformation functions, and water-dampness overflows, leading to edema. As stated in "Inner Canon of Medicine", "The kidney is the gate of the stomach. If the gate is not properly closed, water will accumulate accordingly. [5]" Insufficient kidney yang fails to warm the spleen, resulting in weakened spleen yang. Since the fetus is originally related to the kidney, during pregnancy, the kidney qi becomes severely weakened due to pregnancy, and its opening and closing functions are disordered, leading to the formation of edema. The fetus can also block qi movement, causing qi to stagnate inside, accumulate dampness, and generate phlegm.

### 2.1.2 Strengthen the spleen and use dampness for the treatment of zi zhong

Therefore, many doctors believe that the location of the disease is in the spleen and kidneys, and the main pathogenesis is deficiency of the spleen and kidneys accompanied by qi stagnation.

The pathogenesis of spleen deficiency runs through the entire process of HDP. As stated in "Plain Questions", "All dampness, swelling, and fullness are related to the spleen", emphasizing the core position of "excessive dampness due to spleen deficiency" in the pathogenesis. Modern scholars such as WANG Lulu [6] and ZHANG Qianqian [7] also believe that spleen deficiency is one of the main causes of "zi zhong". Also, if patients are constitutionally phlegm-damp or have long-term spleen deficiency and failure in transportation, water-damp accumulates and turns into phlegm. Liver yang, carrying phlegm turbidity, ascends to disturb the clear orifices, which can lead to secondary symptoms and signs such as hypertension and dizziness. YAN Hongzhi in modern times summarized that "the upward surging of phlegm saliva" can lead to secondary pregnancy dizziness. YANG Cuihua

believes that the predisposing factors for hypertensive disorders of pregnancy (HDP) mainly include wind, deficiency, and phlegm. The generation of phlegm turbidity mostly stems from spleen deficiency. Coupled with excessive hyperactivity of liver yang, it transforms into wind and moves. Liver wind, carrying phlegm turbidity, ascends to disturb and cloud the brain collaterals and clear orifices, resulting in symptoms such as fainting and convulsions, which is called "zi xian". "Tian Xian Teng San" in "Chen Su An's Complementary Explanations on Gynecology" is used to treat this disease. Modern doctor TENG Dejing [8] is good at using modified Qi Ju Di Huang Tang to treat hypertensive disorders of pregnancy with remarkable effects. YAN Wen shuang [9] and others believe that the lungs often work together with other organs to cause disorders in water metabolism. The lungs, in coordination with the liver, spleen, and kidneys, are used to treat pregnancy swelling. The main prescriptions include Fu Pian, Gan Jiang, Fu Ling, Bai Zhu, Xing Ren, Bai Shao, Sheng Jiang, and Gan Cao. Wang Chao [10] was always decoction to patients with spleen deficiency and liver depression syndrome to balance Yin and Yang and help spleen and suppress liver, showing considerable clinical effect. Always decocting the original recipe to nourish the liver and kidney, regulating the liver and qi, adding stone bright flat liver latent Yang, fried Atractylodes, poria and other spleen and qi, the whole prescription on the basis of nourishing the liver and Yang, spleen and kidney, to balance Yin and Yang, dispel evil and eliminate causes. It can be seen that spleen and qi is particularly important in the treatment of this disease, and can be added in clinical application To refer to.

## 2.2 Zi Yun

"Zi yun" refers to dizziness and vertigo during pregnancy, sometimes even feeling as if about to faint. "Zi yun" has different degrees of severity. If it occurs in the middle and late stages of pregnancy, it is mostly a severe case, often accompanied by symptoms such as blurred vision, nausea, vomiting, and headache, which are mostly precursors of "zi xian". WANG Ken tang in the Ming Dynasty first listed "zi yun" as an independent disease name in "Standards for Diagnosis and Treatment of Gynecological Diseases - The Fetal Front Door". Since then, "zi yun" has been independently discussed from "zi xian". He called "zi yun" "pregnancy dizziness" and said, "During pregnancy, the toxic heat of the liver attacks the temples, and phlegm congests in the chest and diaphragm, causing dizziness and vertigo." "Summary of Diagnosis and Treatment of Gynecology" states, "The symptom of pregnancy dizziness is called 'zi xuan'." "Treasures of Gynecology" says, "In the middle and late stages of pregnancy, the appearance of dizziness, headache, chest tightness, nausea, and short urine is called pregnancy dizziness[11]."

### 2.2.1 The etiology and pathogenesis of zi yun

The mechanism of "zi yun" is mainly due to insufficient yin blood, hyperactivity of liver yang, or upward disturbance of phlegm turbidity. The basic pathogenesis of "zi yun" is hyperactivity of liver yang and internal movement of liver wind, which causes qi and blood to reverse and ascend to the brain marrow, resulting in dizziness and even fainting. As stated in "Inner Canon of Medicine", "All wind-induced

dizziness is related to the liver [5]." Regarding dizziness, there are sayings such as "there is no dizziness without wind [5]", "there is no dizziness without deficiency [12]", and "there is no dizziness without phlegm [13]". Zhang Shanlei in modern times said in "Annotations and Corrections on Shen's Compilation of Gynecology" that there are three main causes of pregnancy diseases: first, yin deficiency. During pregnancy, yin blood is limited and gathered to nourish the fetus, so the yin aspect must be deficient. Pregnant women already have weaker liver and kidney yin blood than when they were not pregnant. Due to factors such as emotional distress and internal injuries, the consumption is aggravated. The liver is a firm organ, with yin in its substance and yang in its function. When yin is deficient and unable to control yang, yang becomes hyperactive above, resulting in symptoms such as elevated blood pressure and dizziness. With less water to nourish the liver wood, it transforms into liver wind disturbance or combines with phlegm turbidity to attack the meridians and brain orifices, manifested as convulsions.

### 2.2.2 Treatment of Zi yun with the method of nourishing yin and calming the liver to extinguish wind

"All wind-induced dizziness is related to the liver [5]." The location of the disease of "zi yun" is in the liver and kidneys. Yin deficiency is the internal basis of the disease, and hyperactivity of liver yang is the key link. In treatment, nourishing the liver and kidneys and suppressing liver yang are the main principles to balance the disordered yin and yang. "Shen's Compilation of Gynecology - Pregnant Women Resembling Wind" states, "There are three main causes of diseases in pregnant women: first, yin deficiency. The essence and blood in the human body are limited and gathered to nourish the fetus, so the yin aspect must be deficient. Second, qi stagnation. With an additional obstacle in the abdomen, the ascending and descending qi must be stagnant. Third, phlegm and fluid retention. The internal organs in the human body are adjacent to each other. With a sudden increase of an object in the abdomen, the functions of the internal organs become less flexible, and body fluids gather into phlegm and fluid retention." Yin deficiency and internal heat cause blood heat to move recklessly and overflow out of the vessels to form blood stasis. Or long-term steaming by deficient fire causes internal dryness of blood and obstruction of blood stasis. Constitutional depression leads to qi stagnation, water retention, and blood stasis. Blood stasis blocks the uterine vessels, and the blood stasis is aggravated, jointly causing this disease. Usually having liver and kidney yin deficiency, insufficient liver blood, lack of nourishment for the liver, yin failing to submerge yang, liver yang transforming into fire and generating wind; or excessive fatigue after pregnancy that damages yin, leading to hyperactivity of heart and liver fire, which ascends to disturb the mind; or as the fetus grows larger, the qi movement in the body is disordered, qi stagnation damages the spleen, the spleen is deficient in transforming food into qi and blood, resulting in insufficient yin blood, and thus liver yang, carrying phlegm turbidity, ascends to disturb the clear orifices. Yin deficiency with hyperactivity of liver yang and spleen deficiency with hyperactivity of liver yang are severe cases of "zi yun". The early manifestations of hypertensive disorders of pregnancy may include headache, dizziness, blurred vision, and even temporary blindness. These symptoms are attributed to hyperactivity of liver yang

due to kidney deficiency in traditional Chinese medicine theory. As the disease progresses, patients may experience digestive symptoms such as nausea, vomiting, and upper abdominal pain, which are manifestations of upward disturbance of damp-heat in the middle jiao and qi stagnation in the middle jiao in traditional Chinese medicine. In the late stage, patients may experience severe symptoms such as convulsions and coma, which are considered to be caused by internal movement of liver wind and disturbance of wind-heat to the heart in traditional Chinese medicine. SU Zhaohe and WANG Zhe [14] used their self-formulated Pinggan Zishen Fang to treat "zi yun" of the liver-kidney yin deficiency type. This prescription, based on Liuwei Dihuang Wan, adds Fructus Lycii, Flos Chrysanthemi, Concha Haliotidis, Concha Ostreae, Rhizoma Gastrodiae, and Ramulus Uncariae. The whole prescription has the functions of suppressing liver yang, nourishing the kidneys, nourishing yin, and suppressing yang, and has a good treatment effect. YE Xiaoyun [15] used modified Tianma Gouteng Yin to treat "zi yun" of the hyperactivity of liver yang type and achieved good results. After conducting clinical observations on 40 patients, it was concluded that the treatment of "zi yun" of the hyperactivity of liver yang type mainly focuses on suppressing liver yang, supplemented by nourishing the kidneys to prevent miscarriage, strengthening the spleen to remove dampness, nourishing blood to calm the mind, and treating both the symptoms and the root cause. After treating patients with pre-eclampsia (maternal vertigo) of liver-kidney Yin deficiency type with Gouqizi Dihuang Pill, Li Yanfang et al. [16] found that the number of patients who converted from the liver-kidney Yin deficiency type to the normal syndrome type was significantly higher than that of the control group, and the incidence of pre-eclampsia was significantly reduced. Gu Shaohua [17] found that factors such as serum IFN- $\gamma$ , IL-6, IL-4, VCAM-1 in patients with gestational hypertension of liver-kidney Yin deficiency type stimulated vascular endothelial cells, aggravating vascular damage. After treatment with Gouqizi Dihuang Pill, the levels of these factors returned to normal. Gouqizi Dihuang Pill is composed of Liuwei Dihuang Pill with the addition of chrysanthemum and goji berries. In the prescription, the heavy use of prepared Rehmannia root as the sovereign herb nourishes blood and essence, while mountain dogwood serves as the minister herb, warming the kidneys and liver. With the addition of tree peony bark and chrysanthemum to clear the liver and dissipate heat, the entire formula is able to nourish the Yin fluids of the liver and kidneys, reducing the heat in the liver and kidneys. It is currently the most important prescription for treating gestational hypertension diseases of the liver-kidney Yin deficiency and fire excess type.

1.3 Zi xian. "Zi xian" refers to sudden dizziness and falling down, losing consciousness, looking upward with both eyes, clenching the teeth, convulsions of the four limbs, general rigidity, waking up for a short while and then relapsing, or even remaining in a coma during the late stage of pregnancy, during childbirth, or after childbirth. It is called "zi xian" or "zi mao". "Zi xian" was first mentioned in "Treatise on the Etiology and Symptoms of Various Diseases" by CHAO Yuanfang. It says, "When it occurs during pregnancy, the person is dazed and unable to recognize others, wakes up for a short while and then relapses. It is also caused by wind attacking the Taiyang meridian and resulting in convulsions. It is also named 'zi

xian' and also named 'zi mao'."

### 2.3 Zi Xian

#### 2.3.1 The etiology and pathogenesis of zi xian

"Wan's Gynecology" pointed out that "zi xian" is a syndrome of qi deficiency accompanied by phlegm and fire [18]. "Essentials of Gynecology" believes that "zi xian" is caused by internal movement of liver wind and rapid occurrence of fire taking advantage of the wind [19]. "Shen's Compilation of Gynecology" summarized its etiology as "first, yin deficiency; second, qi stagnation; third, phlegm and fluid retention [4]". Therefore, the occurrence of "zi xian" is mainly based on yin deficiency as the root cause, and wind, fire, and phlegm as the manifestations. The pathogenesis of "zi xian" is internal movement of liver wind and upward disturbance of phlegm and fire.

#### 2.3.2 Treating zi xian with the method of calming the liver and extinguishing wind

After pregnancy, yin blood descends to nourish the fetus, resulting in insufficient liver blood and inducing internal movement of liver wind. Having constitutionally insufficient liver and kidney or weak spleen and stomach, due to the heavy deficiency during pregnancy, the liver lacks nourishment, leading to hyperactivity of liver yang. Or after pregnancy, internal injury due to the seven emotions causes liver depression transforming into fire and wind movement, or disharmony between water and fire, hyperactivity of heart and liver fire, or intertwined phlegm and fire clouding the clear orifices. In the late stage of pregnancy, during childbirth, yin blood suddenly becomes deficient, yang fails to be hidden, the five emotions transform into fire, kidney essence is insufficient, water fails to control fire, heart fire becomes hyperactive, the tendons and vessels lack nourishment, qi and blood are in disorder, the spirit fails to be kept inside, and the consciousness is lost in a coma, resulting in convulsions of the four limbs, which is "zi xian". The treatment should focus on suppressing liver wind, calming the mind, and relieving convulsions. "Taiping Shenghui Fang" uses Lingyangjiao San composed of Cornu Antelopis, Radix Angelicae Pubescentis, Semen Coicis, Radix Saposhnikoviae, Semen Ziziphi Spinosa, Cortex Acanthopanax, and Radix Angelicae Sinensis to treat "zi xian". Many modern doctors use prescriptions such as Zi Shen Qing Gan Hua Yu Fang, Jia Wei Qi Ju Di Huang Wan, and Qi Zi Fang with modifications to achieve good treatment results [20]. Zhao Yingying [21] research take nifedipine combined antelope horn oral liquid treatment, the antelope horn oral liquid is a kind of antelope horn by modern processing preparation of Chinese patent medicine, with flat liver wind, loose blood, action, the results show that the two drugs can play a synergistic treatment effect, make patients clinical symptoms significantly reduced, blood pressure and urine protein significantly reduced, effectively improve pregnancy outcomes. Many studies have shown that a series of preeclampsia is caused by liver Yang hyperactivity and hepatic wind hyperactivity, and the soup is often used to smooth liver wind quenching. Pang Guizhen [22] used the soup to calm liver, calm heat, and secure tire, remove licorice, and combined with western medicine as the test group for treatment, while the control group only used western

medicine for treatment. The data from the trial showed that the incidence of pregnancy complications in the test group was significantly lower than that in the control group, which proved that the hook soup plays an important role in the treatment of eclampsia. Ma Shijie et al [23] divided the patients into two groups for control test, with magnesium sulfate spasmodic, antihypertensive, low flow oxygen inhalation and other conventional treatment, treatment group with antelope horn hook vine soup add and decrease, the anxiety, plus Coptis chinensis, summer grass to clear liver and reduce inflammation, sputum plus Tianzhu yellow, tangerine peel, gallbladder star and other used to clear phlegm and mouth, chest and nausea, add Buddha hand, gold and other qi wide diaphragm. The results show that the effect of the treatment of preeclampsia is significant.

### 3. Advantages of TCM Syndrome Differentiation and Characteristic Therapy

The principle of syndrome differentiation and treatment in traditional Chinese medicine, as the core concept of traditional Chinese medicine, lies in deeply understanding the patient's condition, carefully distinguishing different syndrome types, and then adopting personalized and highly targeted treatment measures. In the treatment of gynecological diseases, especially disorders such as "zi zhong", "zi xian", and "zi yun", the application of the principle of syndrome differentiation and treatment in traditional Chinese medicine is particularly crucial. First, it is necessary to obtain the patient's condition information through detailed methods such as inspection, listening, inquiring, and pulse taking, including but not limited to the patient's emotions, living habits, diet structure, and sleep quality. Meanwhile, it emphasizes the close connection between the imbalance of physiological functions such as qi, blood, yin and yang, and body fluids in pregnant women and their pathological changes. Based on this information, the symptoms and signs of the patient are corresponded to the syndrome types in traditional Chinese medicine, and different treatment methods are adopted. According to the changes in the patient's condition during the treatment process, the treatment plan is flexibly adjusted. This dynamically adjusted treatment strategy is a major feature of the principle of syndrome differentiation and treatment in traditional Chinese medicine.

For example, traditional Chinese medicine will carefully observe the patient's symptoms, such as headache, dizziness, and edema, and simultaneously comprehensively consider the state of the patient's tongue coating, changes in the pulse condition, and the overall complexion, so as to accurately distinguish various syndromes. For example, if a pregnant woman has symptoms such as dizziness, flushed complexion, bitter taste in the mouth, and a wiry and rapid pulse, she may be diagnosed with the syndrome of hyperactivity of liver yang. Then, personalized and targeted treatment methods can be adopted. Traditional Chinese medicine emphasizes treating both the symptoms and the root cause. For the situation of hyperactivity of liver yang, not only suppressing liver yang but also nourishing yin to balance the yin-yang relationship in the body is considered. Other characteristic treatment methods in traditional Chinese medicine also include acupuncture and diet therapy. In traditional Chinese medicine,

acupuncture is an important treatment method. By inserting needles into specific acupoints, the circulation of qi and blood in the body can be regulated. For hypertensive disorders of pregnancy, acupoints such as Taichong and Fengchi can be selected. Taichong is a key acupoint for regulating the liver, which can soothe the liver qi, regulate qi, and suppress liver yang. Fengchi can clear the head and eyes and improve symptoms such as headache.

Contemporary people often have irregular diets, excessive worry and overwork, and irregular work schedules. Over time, these factors can damage the liver, spleen, and kidneys. The root cause lies in spleen deficiency, while excessive rising of liver yang, qi stagnation and blood stasis, and deficiency of kidney yin are the secondary manifestations. The spleen governs the transportation and transformation of water and dampness. When the spleen is deficient, its function of transporting and transforming water and dampness is impaired, leading to the overflow of water onto the skin. As a result, swelling of both lower limbs can be observed. If the illness persists for a long time, it will affect the kidneys, causing the failure of the kidneys to store essence properly, and the leakage of nutrients in the urine, which leads to foamy urine. When both the spleen and kidneys are deficient, there is insufficiency of yin and blood. As the liver fails to be nourished, excessive rising of liver yang occurs, resulting in symptoms such as dizziness, flushed face, bitter taste in the mouth, dry throat, and irritability. When the spleen fails in transportation and transformation and the liver fails in qi regulation, qi stagnation and blood stasis will occur, mainly manifested as chest tightness, hypochondriac pain, and a dark purple tongue. Deficiency of kidney yin is mainly manifested as dizziness, tinnitus, weakness in the waist and knees, and dry mouth. Therefore, in traditional Chinese medicine, it is believed that the obstruction in the middle energizer during pregnancy should be treated from the perspective of the spleen. In the early stage of "eclampsia," pathogenic factors are prevalent while healthy qi remains relatively stable. As the condition progresses from mild to severe, spleen deficiency and edema become the main pathogenesis, and further development may lead to deficiency of both the spleen and kidneys. The clinical manifestations of eclampsia are diverse, mainly characterized by spleen deficiency, sometimes accompanied by blood stasis, or dampness transforming into heat. Over time, the spleen deficiency may worsen, and deficiency of the lungs and kidneys may also occur simultaneously. "Vertigo during pregnancy" is a dangerous condition with acute symptoms, often caused by excessive rising of liver yang, the spleen being overacted on by the liver, stagnation of phlegm and qi, and qi and blood stasis. In clinical practice, if a patient is overweight and has a phlegm-damp constitution before pregnancy, due to the severe deficiency during pregnancy, the spleen yang will be damaged internally, and the body will be unable to distribute body fluids, resulting in edema. When dampness and turbidity accumulate in the spleen and prevent the clear qi from ascending, dizziness will occur. If blood stasis persists for a long time, the fetus will lack nourishment, and in severe cases, critical conditions may arise. If a patient is usually thin, with a red tongue, little coating, and hot palms and soles, and the mother has a yin-deficient constitution before pregnancy, after pregnancy, blood gathers to nourish the fetus, leading to

yin deficiency over time. Excessive rising of liver yang will cause headache and dizziness. Or if the life-gate fire is insufficient, it fails to warm the spleen yang above and the bladder below, resulting in the dysfunction of bladder qi transformation and the inability to transform and move water, thus causing edema. Before childbirth, when yin blood deficiency becomes severe, yin deficiency leads to wind generation, and the tendons and vessels become tense, resulting in limb convulsions. When heat disturbs the mind, it may even lead to unconsciousness. Therefore, in clinical treatment, the focus is on regulating the spleen, supplemented by therapies such as "eliminating phlegm and resolving blood stasis, promoting qi and draining water, nourishing the liver and kidneys, and suppressing liver yang."

#### 4. Understanding of Hypertension During Pregnancy in Modern Medicine

Hypertensive disorders of pregnancy are specific diseases during pregnancy and are also one of the main causes of maternal death [24]. Compared with developed countries, developing countries have higher maternal and child mortality rates. Women who survive these diseases have a shorter life expectancy than those who do not develop them, and their risks of stroke, cardiovascular disease (CVD), and diabetes also increase. Moreover, due to preeclampsia, the risks of preterm birth of newborns, perinatal death of mothers and infants, neurodevelopmental disorders in offspring, and CVD and metabolic diseases in mothers in their later years will increase proportionally. Therefore, it is extremely important to effectively and timely prevent and treat hypertensive disorders of pregnancy. The symptoms and signs of hypertensive disorders of pregnancy mainly include headache, blurred vision, upper abdominal pain, and edema. Among them, headache is the most common symptom, often manifested as pulsatile pain, usually occurring on both sides of the head or the entire head, and is often accompanied by blurred vision. Blurred vision is mainly manifested as decreased visual acuity or unclear vision, and even temporary blindness may occur. In addition, pregnant women may also experience upper abdominal pain, which is usually located in the middle or upper right abdomen, progressively worsening, and sometimes radiating to the waist or shoulders. In severe cases, it may be accompanied by nausea and vomiting. Edema is one of the common signs of hypertensive disorders of pregnancy, mainly manifested as swelling of both lower limbs, and facial edema may also occur. In addition, pregnant women may also have symptoms and signs such as hepatomegaly, proteinuria, and thrombocytopenia. Western medicine mainly focuses on improving microcirculation, replenishing blood volume, and relieving symptoms in treatment. For the drug treatment of hypertensive disorders of pregnancy, antihypertensive drugs are mainly used to control blood pressure to reduce the risk of complications for mothers and fetuses. Commonly used antihypertensive drugs include  $\alpha$ -adrenergic receptor blockers, calcium channel blockers, methyl dopamine receptor blockers, progesterone, and 17 $\alpha$ -hydroxyprogesterone, etc [25]. These drugs can reduce blood pressure through different mechanisms, relieve the symptoms of hypertension in mothers, and reduce the risk of developing hypertensive disorders of pregnancy.

## 5. Outlook and Prospects

Traditional Chinese medicine has conducted in-depth discussions on the pathogenesis of hypertensive disorders of pregnancy, emphasizing the relationship between the imbalance of physiological functions such as qi, blood, yin and yang, and body fluids in pregnant women and pathological changes. The essence of traditional Chinese medicine lies in distinguishing different syndrome types through in-depth observation and analysis of patients' conditions, and then adopting personalized and targeted treatment methods, with an emphasis on treating both the symptoms and the root causes. Traditional Chinese medicine uses acupuncture therapy, dietary therapy, and other methods in the syndrome differentiation and treatment of hypertensive disorders of pregnancy, providing a comprehensive treatment plan for this disease. In clinical practice, the use of the method of invigorating the spleen, promoting diuresis, nourishing yin, and calming the liver to extinguish wind has achieved significant therapeutic effects in treating hypertensive disorders during pregnancy, making it worthy of clinical promotion and application.

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