

# The Origin and Clinical Application of Zhenwu Decoction

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**Abstract:** Zhenwu Decoction (Zhen Wu Tang) is recorded in Zhang Zhongjing's Treatise on Cold Damage and Miscellaneous Diseases (Shanghan Zabing Lun). Its formulation was guided by the ancient Chinese medicine's principle of "harmonizing the five zang-organs with the five flavors." It was also influenced by Xuanwu's warming and percolating method from Decoction Classic (Tangye Jingfa). A typical formula for warm-yi and tonify yang, changing qi and promoting urine. This article discusses the origin of Zhenwu decoction as well as the difference between Zhenwu and Xuanwu, then its therapeutic effects on insomnia, heart failure, diabetic nephropathy, cancerous ascites, lupus nephritis of spleen-kidney yang deficiency and chronic obstructive pulmonary disease are discussed and reflections from them are included.

**Keywords:** Zhenwu Decoction (Zhen Wu Tang); Tangye Jingfa (Decoction Classic); Clinical Application; Review

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## 1. The Origin of Zhenwu Decoction

In the preface of the book Zhenjiu Jiayi Jing written by Huangfu Mi, he mentions that "Zhongjing extended Yi Yin's Decoction Tangye into dozens of volumes which was proved effective as well". It can be seen that Zhang Zhongjing's thoughts were influenced by the Decoction Classic Tangye Jingfa. But we do have the Tangye Jingfa today, but according to contemporary scholars, the Fuxing Jue (Auxiliary Formula) has preserved it very well and can still show the originality of the Tangye Jingfa, so we can feel the delicate and subtle nature of the Tangye Jingfa within the Fuxing Jue.

Fuxing Jue, with the Erdan Sishen (Two Dawns, Four Spirits) system as its main body, created the Xiao Xuan Wu Fang from the point of view of supplementing and draining the five zang-organs. The sayings, "Yangdan is a formula for ascending yang" and "Xuanwu is a formula for warming and percolating" shows that both Xuanwu and Zhenwu formulas are used for warming yang and promoting urination. But according to its ingredient preparation, Small Xuanwu Decoction is made with three liang of Poria (Fuling), three liang of Peony (Shaoyao), two liang of Atractylodes (Baizhu), three liang of Dried Ginger (Ganjiang), and a piece of Prepared Aconite root (Pao Fuzi). Zhenwu Decoction (Zhen Wu Tang): 3 liang each of Poria (Fu Ling), Bai Shao, Shengjiang, and two liang of Cang Zhu, and one piece of Prepared Aconite (Fuzi). Difference between the two is that Zhenwu Decoction uses fresh ginger instead of dried ginger.

We can think of the difference between these two formulas from this one medicine ingredient, but the earliest record is by

the Shennong BencaoJing (Shennong's Classic of Materia Medica), written in the early Han Dynasty and does not make distinction between Dried Ginger and Fresh Ginger and described only the general effect of ginger as “the fresh form is superior” What are the different points specifically? In terms of the Mingyi Bielu (Miscellaneous Records of Famous Physicians) it is written that, “Dried Ginger mainly treats the cold abdominal pain and sudden pestilence (zhōng è) and also cholera, swelling and fullness and other kinds of wind-evil toxins. It moves the qi stagnation on the skin surface and stops the blood to flow up to the lungs and stop hemoptysis. Fresh Ginger mainly treats headache from cold damage, nasal congestion, cough from qi reversal, and stops vomiting. The passage mainly points out the difference between Dried Ginger and Fresh Ginger: Dried Ginger is good at warming the middle and dispelling cold, dispelling wind, and stopping bleeding; Fresh Ginger is good at dispelling wind and cold, relieving cough and stopping vomiting.

Based on the difference of medicinal property (Yanwu) in the formula of Xuanwu-Zhenwu, it is easy to understand the pathogenesis of both: Xuanwu Decoction uses Dried Ginger to warm up the middle and release cold, thus there is not much problem related to it. Its pathogenesis belongs to insufficient kidney qi, leading to internal generation of deficiency-cold. Zhenwu decoction uses Geng to clear uprising and stop vomiting, it is yang deficiency with overflowing water, water-qi rises. So, we may claim that the FuxingJue, or rather the Tangye Jingfa used the ancient Chinese Medicine's formulation principle (five flaves) regulating the qi transformations of the 5zangorgans. Zhang Zhongjing followed up on this line of thought, combined it with the six meridians (liujing) differentiation approach, and creatively developed it into the famous Zhenwu Decoction we have today.

## 2. Clinical Application

### 2.1. Insomnia

Yang entering yin leads to sleep in The Yellow Emperor's Inner Classic (Huangdi Neijing). Thus, the pathogenesis of insomnia lies in “yin that fails to take the yang.” Also, passages such as “the Heart stores the Spirit (Shen),” and “discomfort in the Stomach leads to restless sleep” suggest that insomnia is also caused by the dysfunction of the Heart and Spleen. And the “below the sovereign fire, yin essence support it,” indicates that Insomnia is also related to the relationship between the Kidney and the Heart. If kidney-yang is deficient internal-water-qi congests and harasses Heart-above and will disarrange the heart kidney Yin/yang relationship, this condition leads to sleeplessness. Spleen and Kidney mutually support each other. If the kidney-yang is weak, the earth-spleen will be exhausted, this can also lead to insomnia. Therefore, I decided to use Zhenwu Decoction to warm yang and transform water, strengthen the spleen to promote diuresis and calm the heart and spirit, so that yang can revert to yin, and treat insomnia.

At present, in clinical practice, Zhenwu Decoction is mainly combined with acupuncture to treat insomnia. Zhang Songxing<sup>[1]</sup> employed a modified Zhenwu Decoction with acupuncture to treat insomnia induced by hallucinations due to yang deficiency and water overabundance. A total of 5 times return visits, no difficulty in falling asleep, no recurrence of hallucinations, reported by patient to be well on three follow up visits at three months. The insomnia treated by Zhang Huisheng<sup>[2]</sup> with Zhenwu Decoction and acupuncture: a total of 58 cases, divided into a combined group and a conventional acupuncture treatment group, each case was 29 cases. Insomnia is assessed by the insomnia score ( $p < 0.5$  of symptom scores of the 2 groups, statistical significance) The combined group got Zhenwu Decoction coupled with acupuncture, whereas the conventional group was given Western medicine Estazolam. The results showed: The reduction degree of insomnia symptoms score in the combined group is much higher than that in the conventional group. Zhenwu Decoction has obvious therapeutic effect on insomnia.

### 2.2. Heart Failure

Traditional Chinese Medicines, TCM places “heart failure” under “palpitations,” Xinji, and “severe palpitations,” Zhengchong. It is mainly distributed in the Heart and is closely associated with the other five zang-organs. In Neijing, there's a record stating “Heart corresponds to vessels, its flourishing is in complexion, and its governance belongs to

Kidney" which shows the Heart's function is regulated by the Kidney. Zhang Jingyue said that the yang-qi of the five zang-organs cannot be initiated without kidney yin and Heart is rooted in the Kidney, which indicates that heart yang is rooted in kidney yin. so that, heart-kidney yang deficiency is a very important reason to cause heart failure. Patients with heart failure are often accompanied by lower limb edema, so Zhenwu Decoction can be chosen to achieve the effect of treating both the root cause and the symptoms.

Guo hui<sup>[3]</sup>et al divided 100 cases of patients with heart failure of yang deficiency with water overflow type into two groups. The control group was treated with conventional Western medicine, while the observation group was given Zhenwu Decoction plus Tingli Dazao Xiefei Decoction (Decoction for Purging the Lung with Fennel Seed and Jujube) plus the control treatment. After 28 days of treatment, the therapeutic effects were compared by the improvement of cardiac function indexes and TCM syndrome scores. And it turned out that the total treatment effect of the observation group was higher. The conclusion was: Zhenwu Decoction can treat heart failure. From the modern medical research perspective, it is found that Zhenwu Decoction has a therapeutic effect on heart failure through the inhibition of the p38 MAPK pathway and promoting ventricular remodeling<sup>[3]</sup>.

### 2.3. Diabetic Nephropathy

TCM calls it Xiaoke (dispersion-thirst) and divides it into "Upper dispersion, middle dispersion, lower dispersion," the Jingui Yaolue (Essential Prescriptions from the Golden Cabinet) says, "A man with dispersion-thirst urinates excessively, for everyone he drinks, he urinates a dou," it indicates that the major clinical manifestations of Xiaoke are polydipsia (excessive thirst) and polyuria (excessively urination), and on the contrary, warming yang and promoting diuresis can be applied to treat Xiaoke. Medical science, in modern ages, carried the method of warming yang and diuresis of zhongjing and applied it on DKD Early stage DKD is (shenxiao) kidney dispersion in TCM. It is generally believed that Shenxiao comes from the inability to resolve Xiaoke, mostly caused by kidney deficiency or long-term Xiaoke damaging the Kidney, resulting in kidney damage. Since kidney yang has already decreased, thus can never send fluids upward on the tong, hence thirst and desire to consume. And the descending yang also cannot warm and change the water and body fluids, so the internal retention of water and dampness and the edema of the limbs. From the clinic observation, Shenxiao presents as soreness and weakness of the lower back and knees, frequent nocturnal micturition, turbid urine, unenthusiastic libido, edema (p18)<sup>[4]</sup>: Therefore, treatment can be attempted from the perspective of warming the kidney and promoting urination.

Liu Aijiao<sup>[5]</sup> evenly distributed 120 instances of diabetes with kidney yin insufficiency into two groups The Control group received conventional Western medical. The treatment group received Zhenwu decoction plus Aconite-Regulating-the-Middle pill (Fuzi lizhong pill). Blood sugar level, renal function index, TCM syndrome score was detected and compared. the experimental results: the levels of reduction of blood glucose, promotion of renal function, and reduction of TCM syndrome score in the treatment group were all higher than the levels in the control group ( $p<0.05$ , statistically significant). In recent animal studies, it has also been observed that "the general conditions of the model mice and the pathological changes in the kidney tissue are improved by Zhenwu Decoction. Its working method maybe to lower the expression of NLRP3 inflammasome, preventing the body's inflammatory reaction, activation of NLRP3/ASC/Caspase-1 signal path "10", giving a molecular biology explanation for clinical treatment of Zhenwu decoction.

### 2.4. Lupus Nephritis (Spleen-Kidney Yang Deficiency Type)

TCM mainly classify lupus into Bi (impediment) syndrome, a disease resulting from internal injury and deficiency, compounded with the contraction of external cold-dampness. The Neijing said: "in kidney Bi one is often full, with the buttocks replacing the heels, and the spine replacing the head," that is to say, the joints are often edematous and immobile. This also corresponds to the clinical manifestation of modern SLE nephropathy. Therefore, we can categorize lupus nephritis as kidney Bi. Generally, most modern doctors understand lupus nephritis from the perspective of root deficiency and branches being excessive. They think it has been caused by congenital inadequacy and liver and kidney deficiency.

Combined with poor food habits, overwork, sadness, anger, and improper treatment and nursing, it often causes internal generation of heat-toxin and external invasion of wind-damp-heat toxin, scorching the kidney collateral, consuming the body fluid, disturbing the qi and blood, and blocking the meridians and pulse. It is caused by a series of reasons such as the formation of this illness. As the disease progresses, heat toxicity evil at first can burn Liver & Kidney ying, harm Spleen & Kidney yang into an illness slowly that leads to both yang and yin deficiency. According to this understanding, Zhenwu Decoction may be tried for lupus nephritis in the spleen-kidney yang deficiency syndrome.

Right now, treatment for lupus nephritis mainly combines it with immunosuppressants. Su Baolin<sup>[6]</sup> et al., randomly divide the 72 LN patients who meet the criteria into two groups. The control group received immunosuppressive therapy, while the treatment group was given Zhenwu decoction on top of the control treatment. After eight weeks, compare different clinical parameters of the two groups. The improvement in the treatment group is higher than that of the control group ( $P<0.05$ ) The conclusion was: Zhenwu Decoction improves the renal function of LN patients and improves treatment.

## 2.5. Cancerous Ascites

In traditional Chinese medicine, cancerous ascites is referred to as “drum distention” (Guzhang) or “tan-yin” (phlegm fluid). Based on the classic descriptions such as “all dampness, swelling, and fullness belong to the Spleen” and “in kidney water disease, the abdomen is large, and the navel swollen, there is lumbar pain and urinary obstruction”, we can see that drum distention results from spleen-kidney dysfunction with qi stagnation, blood stasis, and phlegm-dampness binding in the abdomen. New TCM believes that it is caused by the combination of external and internal factors. Interaction between the Yang energy of the Spleen and Kidney: spleen is the root of transportation and transformation for deficiency; Kidney is the root of opening and closing for deficiency Yang unable to transform water fluids, resulting in Yang deficiency and wateroverflow, Yang deficiency cannot transform fluid, thus turning into cancer-toxins with water, they entwine together and become stubborn cancerous ascites, hard to cure<sup>[7]</sup>. Therefore using the method of warming yang and promoting urination can be used:

Li Yang<sup>[8]</sup> et al. used Zhenwu decoction plus Fangji Huangqi decoction (stephania and astragalus decoction) powder as a pommade externally for 65 cases of cancer ascites treated After 7 days, it was compared and analyzed based on the pre- and post-treatment umbilical abdominal circumference and TCM symptoms score, as well as clinical evaluation and evaluation of adverse reactions. The symptoms scores for abdominal fullness, oliguria (scanty urination) were less than before treatment ( $P<0.05$ ); The umbilical abdominal circumference was less than before treatment ( $P<0.05$ ). The conclusion was: Zhenwu decoction added to Fangji huangqi decoction transdermal administration has some improvement effects on cancerous ascites patients, without obvious side effects.

## 2.6. Chronic Obstructive Pulmonary Disease

TCM usually categorizes chronic obstructive pulmonary disease COPD into “lung distention” (Feizhang). The Neijing says, “The lung governing qi and controlling respiration”.and “The kidney governing the reception of qi.” Lung-qi deficiency causes abnormal breathing inhaling and exhaling, kidney- qi deficiency is manifested as shortness of breath, inhaling not sufficient. So as a result lung kidney deficiency becomes one of the important causes of COPD. Modern TCM classified COPD into 3 types: “lung-kidney yang deficiency”, “lung-kidney yin deficiency”, and “lung-kidney qi deficiency”. In clinic, it is also able to use the Zhenwu decoction to treat COPD of Lung-Kidney yang deficient.

Cui Zhijuan<sup>[9]</sup> took 43 cases of patients admitted from October 2018 to September 2019 as the control group, receiving routine Western treatment. 43 cases of patients admitted in October 2019 to September 2020 were taken as the observation group, and treated according to the routine Western medical treatment combined with modified Zhenwu Decoction and Wuling San (Five-Ingredient Powder with Poria) treatment. Compares pre-treatment and 10d of the treatment respiratory mechanics indicators. It was found that the total effective rate of the observation group was more than that of the control group. A statistical difference is seen ( $P < 0.05$ ). In order to exclude other confounding effects, the experimental data of Liu

Jialiang<sup>[10]</sup> can be referred to. The doctor randomly split 68 COPD people who came to the hospital from June 2021 to June 2023 into two groups. TCM group got modified Zhenwu decoction plus Wuling san, while the western medicine group had traditional western medicine medicine treatment. After ten days we compare the indicators of lung function and respiratory mechanics. The effective rate in the TCM group was more than that of the Western medicine group ( $P<0.05$ ). This shows that Zhenwu Decoction has a certain effect on COPD.

## 2.7. Irritable Bowel Syndrome

Irritable Bowel Syndrome (IBS) is primarily characterized by abdominal pain and distension, alternating with diarrhea and constipation, and increased bowel movement<sup>[11]</sup>. According to its clinical situation, it can be diagnosed as “diarrhea” (xiexie) in TCM. With regards to the pathogenesis, in the Jingyue Quanshu (Jingyue’s Complete Works), “The Kidney is the gatekeeper for the stomach, opening into the two lower orifices, so both urination and defecation are controlled by the kidney,” indicating the onset is related to the kidney<sup>[12]</sup>. “Decline of the Mingmen fire” in the kidney failing to warm the earth-spleen, spleen dysfunction in metabolism results in alternated diarrhea and constipation; spleen deficiency in moving up results in qi stagnation in the abdomen, leading to bloating and pain in the abdomen. so it means that we can use the formula of enhancing yang and transforming qi as well as tonifying spleen and promoting urination to cure the symptoms of IBS.

Wang Xiaodong<sup>[13]</sup> found in his clinical experience that IBS also has yang deficiency and cold-fluid type, so he advocated using Zhenwu Decoction plus Xiao Qinglong Decoction (Little Green Dragon Decoction). He prescribed this treatment to 48 patients. In the end, 14 out of the 48 patients met the requirements for clinical cure, the clinical symptoms were significantly reduced in the other patients, which proved the possibility of using Zhenwu Decoction to treat gastrointestinal disease.

## 3. Reflection and Discussion

Zhenwu Decoction was impacted to some extent by Tangye Jingfa (Decoction Classic), following the fundamental principle of ancient Chinese medicine: “harmonize the five zang-organs with the five tastes.” It can be regarded as having been derived from the Xuanwu (Black Warrior) method and serves as a fundamental formula for helping yang qi, moving qi transformation, and promoting urination. It is distinguished from Xuanwu Decoction by the use of fresh ginger versus dry ginger. This one herb different in their respective properties and effects, in other words the delicate aspect of Chinese medicine. In the medical practice we may have many illnesses caused by the kidney-yang deficiency; we can use classics like the Huangdi Neijing and Jingui Yaolue as bases to treat them. In clinical practice, modern TCM adopts modified Zhenwu Decoction as the base formula and integrates other classic famous formulas along with acupuncture method and modern drug therapy, it can achieve favorable treatment outcomes for some nervous, cardiovascular, urinary tract, respiratory, and gastrointestinal diseases, as well as some tumor and lupus complication treatments. And now, modern studies have proved to some extent that Zhenwu decoction works in heart failure and kidney disease. But as for the diseases of other kinds of systems, the working principle of Zhenwu decoction needs to be investigated more.

## Disclosure statement

The author declares no conflict of interest.

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