

# *Experience in treating adult female acne based on the theory of liver and spleen*

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**Abstract:** Adult female acne is a relatively unique dermatological condition that has been a challenging problem in modern medicine due to its complex etiology and tendency to recur. Traditional Chinese Medicine has clear advantages in treating adult female acne. My mentor, Yang Jianxin, has extensive clinical experience and believes that the pathogenesis of adult female acne involves liver stagnation and spleen deficiency, with the affected organs being the liver and spleen. The disease nature is a combination of deficiency and excess. Treatment should be based on a holistic approach, employing differential diagnosis and treatment principles, such as nourishing deficiencies and eliminating excesses, regulating liver function, strengthening the spleen, and harmonizing qi and blood. The basic prescription for treating this condition is Danzhi Xiaoyao San, which can be modified and supplemented with other herbs according to the specific pattern differentiation. This approach has proven to be effective in clinical practice.

## 1. Introduction

Acne is a common chronic inflammatory skin disease that often occurs during adolescence. It is characterized by the presence of comedones, papules, pustules, nodules and cysts, primarily on the face, neck, and shoulder or back areas<sup>[1-2]</sup>. Research has shown that the incidence of acne in late-stage adolescent females is higher than in males of the same age group<sup>[3]</sup>. Additionally, studies have indicated that female patients with acne have a higher prevalence of depression and anxiety compared to their male counterparts<sup>[4]</sup>. In traditional Chinese medicine, acne is referred to as "lung wind comedones", "lung wind acne", "comedones" or "alcohol-induced acne"<sup>[5]</sup>. The etiology and pathogenesis of acne in Chinese medicine often involve external pathogens, lung and stomach heat accumulation, phlegm stagnation, blood stasis, and disharmony of the Chong and Ren channels. Western medicine's understanding of the pathogenesis of acne suggests that it may be associated with abnormal levels of androgens, follicular keratinization, bacterial infection, inflammation triggers, genetics, and psychosocial factors<sup>[6]</sup>.

My teacher, Yang Jianxin, is a renowned traditional Chinese medicine practitioner in Gansu Province. He is a master's supervisor and possesses extensive knowledge in the field. He has been dedicated to his profession for many years and has rich clinical experience, excelling in the treatment of various diseases. He believes that adult women often face significant pressures from

their lives, work, and families, which can easily affect their emotions. This can lead to stagnation of liver Qi, impairment of liver function in dispersing and excreting, and the inability of the spleen and stomach to transform and transport properly. As a result, dampness and turbidity may accumulate, leading to heat or stagnation of liver Qi beneath the skin. Over time, this can impede the circulation of fluids and blood, resulting in acne. In response to this, he proposes the treatment principle of "regulating the liver, invigorating the spleen, harmonizing Qi, and promoting blood circulation," which has shown remarkable efficacy.

## 2. Pathogenesis and Mechanism

### 2.1. Relationship between the Liver and Acne

<Huangdi Neijing> states: "Frequent sweating on one side of the body can develop into hemiplegia. When sweating, encountering dampness and stagnation can easily lead to small sores and prickly heat. Regular consumption of fatty meat, refined rice, and heavy-flavored food can easily lead to the occurrence of boils, making it prone to disease, just like an empty container receiving things. When encountering wind-cold evils during labor-induced sweating, they gather in the pores of the skin, forming blackheads, and with accumulated heat, they turn into ulcers and abscesses." <Linzheng Yi'an Zhinan> pointed out: "The female take the liver as congenital"<sup>[7]</sup>. The liver is responsible for promoting the smooth circulation of Qi, blood, and bodily fluids. Professor Ma Lili believes that "liver stagnation" is a consistent factor in the development of acne in adult women<sup>[8]</sup>. Modern women experience significant pressure from various aspects such as work and family life, leading to long-term mental tension and stress. Over time, this can disrupt the liver's function of promoting smooth flow, resulting in stagnation of liver Qi, the generation of internal heat, and the accumulation of phlegm-dampness. This pathological process then affects the facial region through the meridians, leading to the formation of acne. Moreover, according to the pathway of the Foot Jueyin Liver Meridian, the head and face are the susceptible areas for acne.<sup>[9]</sup> Furthermore, the liver is responsible for storing blood and regulating the circulation of blood. The human body's blood is stored in the liver and nourishes the entire body through the liver's function of promoting smooth flow and drainage. For women, the relationship between the liver and blood storage is particularly close. The physician Li Shizhen believed that "women are of the Yin category, with blood as the essence"<sup>[10]</sup>. In other words, women are primarily governed by blood. If the liver blood is sufficient, the blood sea is abundant, and menstruation occurs regularly. Conversely, if there is less menstrual flow and irregular periods, it indicates blood deficiency in women. Similarly, the occurrence of acne is related to the blood consumption and improper regulation of women at different stages. One reason for this is the close association of women's pregnancy and childbirth with blood. Additionally, emotional stress and other issues can ultimately lead to blood deficiency due to insufficient generation of Qi and blood. Secondly, the liver stores blood and is responsible for dredging and draining. The liver governs Yin while utilizing Yang. The liver's function of dredging and draining can be manifested in harmonizing the body's Qi flow, ensuring smooth blood circulation, storing blood, governing Yin, and regulating qi flow with Yang. The physical basis of the liver is the material it uses, where blood can nourish the liver. The liver's function is the external manifestation of the liver's physical basis, where liver Qi depends on the nourishment of liver blood. In pathological conditions, if the liver's function of dredging and draining is insufficient, liver Qi becomes stagnant under the skin, which over time leads to impaired fluid circulation and poor blood circulation, resulting in acne.

In his clinical work, tutor Yang Jianxin noticed that adult women seeking treatment for acne often experience symptoms such as insomnia, vivid dreams, sighing, irritability, and even anxiety in their daily lives. Upon further inquiry, it was found that many of them also faced a lot of stress and

difficulties in various aspects of life. As a result, their acne is prone to recurrent outbreaks and becomes persistent. Tutor Yang believes that the structural changes in modern society make women prone to emotional stagnation. Women have a gentle and introverted nature that tends to suppress their emotions. When faced with excessive stress for a prolonged period, the stagnation of Qi and subsequent formation of heat in the liver may lead to acne. At the same time, emotional problems can trigger acne, and the prolonged presence of acne can affect emotions, resulting in a vicious cycle that hinders the healing of skin lesions. Therefore, when treating adult female acne, Tutor Yang takes a holistic approach, often using herbal remedies that soothe and regulate the liver and Qi to achieve a comprehensive treatment.

## 2.2. The Relationship between the Spleen-Stomach and Acne

Li Gao said in <Piwei Lun>:“Internal damage of the spleen and stomach will result in the occurrence of various diseases<sup>[11]</sup>” The spleen is responsible for the transformation and transportation of nutrients throughout the body, nourishing organs, muscles, and skin tissues. If the spleen is weak, it cannot effectively transform and transport water and dampness, leading to the accumulation of heat and dampness in the skin, resulting in the formation of acne<sup>[12]</sup>. Professor Xue Aiguo also believes that the Hand Yangming Large Intestine Meridian and the Foot Yangming Stomach Meridian are meridians associated with excessive Qi and blood<sup>[13]</sup>. Acne occurs between the skin and muscles, and the Yangming meridian governs the skin and muscles. The pathway of the Yangming meridian passes through the face, and it nourishes the Qi and blood of the face. If dampness and heat accumulate in the Yangming spleen-stomach, acne will develop internally<sup>[14]</sup>.

Yang Jianxin believes that adult female acne is closely related to spleen deficiency. He believes that the main causes of spleen deficiency are irregular diet and emotional imbalances. With economic development and changes in dietary structure, people are becoming increasingly satisfied with their desires for food and have a preference for fatty, sweet, greasy, and spicy foods. Irregular eating habits can damage the spleen and stomach. At the same time, social pressure is increasing, leading to frequent emotional problems. Over time, excessive worries and thoughts can damage the spleen. Spleen damage can lead to impaired water circulation, and prolonged accumulation of water dampness can result in acne. Therefore, he advocates for the replenishment of deficiencies and the elimination of excess, simultaneously regulating the liver and strengthening the spleen.

## 2.3. The Relationship Between Liver and Spleen

The relationship between the liver and spleen was first documented in <Huangdi Neijing>: “Diseases often arise from the liver, and after three days, they affect the spleen<sup>[15]</sup>.”The liver governs the smooth flow of Qi, preferring openness and disliking stagnation and depression, in order to ensure the normal functioning of the spleen and stomach. If the liver's function of promoting smooth flow is impaired and stagnation affects the spleen, it can lead to the spleen's dysfunction in transportation and transformation. Dampness and turbidity accumulate and transform into heat, rise up to the head and face, and manifest as acne. The spleen governs transportation and transformation, digesting food and absorbing the essence of grains and water, to distribute it to the whole body. To maintain the balance between yin and yang in the body. Sufficient Healthy-Qi inside the body will prevent invasion of pathogenic factors. If the function of the spleen in transportation and transformation is impaired, it cannot nourish the five organs. When the liver loses its nourishment, the flow of Qi becomes stagnant. Liver Qi accumulates under the skin, leading to the impairment of fluids and poor blood circulation, resulting in the formation of acne. It can be seen that liver stagnation and spleen deficiency are interrelated causes and mutually influence each other. Ye Tianshi said: “The female take the liver as congenital, Yin stagnation is prone to depression

and frustration”<sup>[16]</sup>.According to Yang Jianxin, women are considered to have a yin nature, making them more prone to liver Qi stagnation. The wood element of the liver can overcome the earth element of the spleen, leading to a weakened spleen function. Additionally, women are more easily influenced by emotions and can experience qi stagnation from excessive worrying, which can lead to spleen deficiency and impaired function. Over time, this can result in the accumulation of dampness and heat, manifesting as acne<sup>[15]</sup>.

### 3. Acne diagnosed as Liver Depression and Spleen Deficiency type

Acne of Liver Depression and Spleen Deficiency type is often caused by liver Qi stagnation, liver failing to disperse, unable to assist the spleen and stomach in digestion, leading to the prolonged accumulation of dampness and turbidity transforming into heat, or liver Qi stagnation in the meridians, resulting in stagnant fluids over time, impaired blood circulation, and the development of acne. According to the consensus of TCM acne (comedo) treatment experts published in 2017<sup>[16]</sup>.The diagnostic criteria for acne of Liver Depression and Spleen Deficiency type are scattered red or dark red papules, nodules, or pustules on the face<sup>[17]</sup>. Increased stress and emotional disturbances can aggravate acne. Poor sleep, irritability, distending pain in the hypochondriac and epigastric regions, poor appetite, worsened skin lesions during the menstrual period in women, which can also lead to menstrual irregularities, decreased menstrual flow, and breast tenderness. Loose stools, sticky and greasy, red tongue with yellow coating, and string-like or slippery pulse.

### 4. Characteristics of the compatibility of Danzhi Xiaoyao Powder

The earliest record of Danzhi Xiaoyao San in the field of internal medicine was found in the <Neike Zhaiyao><sup>[18]</sup>.The formulation of Xiaoyao San in the <Taiping Huimin Heji Ju Fang>" was based on the addition of Peony bark and Gardenia fruit to the original formula.The combination of peony bark and gardenia fruit in the formula aims to clear heat and eliminate fire. The combination of white peony root, Chinese angelica root, and bupleurum root nourishes the liver and assists its function. White atractylodes rhizome, Poria cocos, and licorice root are added to tonify Qi and strengthen the spleen. The complete formulation aims to soothe the liver, resolve depression, invigorate the spleen, nourish the blood, clear heat, and regulate menstruation. Danzhi Xiaoyao San specifically targets the physiological characteristics of women with insufficient yin blood but excessive liver Qi<sup>[19]</sup>. It promotes the harmonization of the liver and spleen while soothing the liver and invigorating the spleen. The aggravated acne symptoms before and after menstruation in adult women are commonly believed to be caused by hormonal fluctuations during the menstrual period. Combined with the emotional changes and increased anxiety during menstruation, it leads to an imbalance in the hypothalamic-pituitary-adrenal axis, resulting in elevated levels of androgens<sup>[20]</sup>.Modern pharmacological research has confirmed that modified formulas based on Xiaoyao San have antidepressant and anxiolytic effects, regulate the activity of neurotransmitter receptors, reduce estrogen levels, possess anti-inflammatory properties, and regulate the immune system. Through multiple targets, ingredients, and pathways, these formulas have shown effectiveness in treating acne<sup>[21]</sup>.

### 5. Examples of Medical Cases

#### 5.1. Medical case one

Patient Li, female, 27 years old, visited the famous traditional Chinese medicine clinic at

Tianshui City Traditional Chinese Medicine Hospital for the first time on December 20, 2022. The patient complains that 3 years ago, when she first entered the workplace, she had red papules on her face, mainly on the forehead and cheeks. Touching them caused discomfort and itching. She had previously sought medical treatment at the local health center and underwent skin microscopy, which showed numerous round and elliptical melanin granules at the junction of the epidermis and dermis in the affected skin area. The diagnosis was common acne. The patient was prescribed topical metronidazole gel, but the specific dosage is unknown. Although the treatment was effective at the time, the skin lesions recurred after stopping the medication. Currently, the facial acne has gradually increased. Presenting symptoms include oily facial skin, scattered red papules on the forehead and cheeks, accompanied by poor sleep, irritability, bitter taste, dry mouth, loose stools (1-3 times per day). The patient's last menstrual period was on December 12, 2022. The menstrual flow was light, with dark red color and blood clots, and no dysmenorrhea. The tongue appears red with thin yellow coating, and the pulse is string-like.

TCM Diagnosis: Acne, Pattern: Liver constraint and Spleen deficiency pattern. Western Medicine Diagnosis: Common acne. Treatment Principle: Soothe the liver, strengthen the spleen, regulate Qi and blood. Prescription: Moutan Cortex (20g), Chinese Angelica Root (10g), Gardenia Fruit (10g), White Atractylodes (fried) (10g), Bupleurum Root (10g), Poria (30g), Red Peony Root (10g), Licorice (10g), Coix Seed (fried) (30g), Chinese Skullcap (fried) (30g), Kudzu Root (30g), and Da Xueting (30g). 6 doses, decocted in water, taken orally once daily, three times a day. Advised to avoid spicy, greasy, cold, and raw food during the medication period and maintain emotional stability. After 7 days, the patient came for a follow-up visit. She reported that the symptoms had improved, with mild acne remaining on the face. Sleep had improved compared to before. She experienced dry mouth and irritability. Menstruation occurred, with increased flow compared to before, dark in color, and still with blood clots. No dysmenorrhea. Tongue and pulse remained the same. The prescription was adjusted by removing Chinese Skullcap and sour date kernel. Continued for 6 doses using the same decoction method. On January 6, 2023, during the third visit, the patient's facial and forehead acne had significantly reduced compared to before, with no new outbreaks. Loose stools persisted. Menstruation occurred as usual, without blood clots. Dry mouth and irritability were alleviated. Continued treatment with the prescription from the second visit, adding Dragon's Blood Tree for dispersing blood stasis. After follow-up, no relapse was reported.

Footnotes: Acne is a chronic inflammatory skin disease that commonly occurs on the face, chest and back<sup>[22]</sup>. It often results in some degree of scarring. In late adolescence, females are more prone to developing acne due to the complex and diverse factors involved, which can be prolonged. Women tend to get easily "depressed" when they have acne, and depression can aggravate acne, leading to a vicious cycle. In this case, the patient is an adult female who initially presented with red papules on the face for 3 years. Further inquiry into the medical history revealed that the patient experienced high work pressure and emotional stagnation upon entering the workforce, leading to stagnation of liver Qi and the formation of depression. The stagnation of liver Qi leads to impaired circulation, which cannot assist the spleen and stomach in digestion and transformation. As a result, dampness and turbidity accumulate internally and transform into heat, leading to the formation of acne in the follicles. The liver is responsible for regulating the smooth flow of Qi. When liver Qi stagnates and is not smooth, it leads to Qi imbalance and disturbs the heart and mind, resulting in poor sleep. Liver Qi stagnation also leads to irritability and anger. Prolonged stagnation of liver Qi transforms into fire, leading to bitter taste and dry mouth. The stagnation of liver Qi impairs the spleen, leading to excessive thoughts, and subsequently affects the spleen and stomach, resulting in spleen deficiency and stagnation, which obstructs the intestines with dampness. As a result, loose stools and increased frequency of bowel movements occur. The liver stores blood and is responsible

for its smooth flow, while the spleen governs blood and is responsible for its transformation. Liver Qi stagnation results in blood stagnation, leading to reduced menstrual flow. Spleen deficiency leads to a lack of blood production and transformation, resulting in a delayed menstrual cycle and decreased menstrual flow after it occurs. Based on the symptoms and tongue pulse, Dr. Yang Jianxin diagnosed this patient with typical spleen deficiency and liver Qi stagnation syndrome. The initial treatment focused on soothing the liver, invigorating the spleen, regulating qi, and nourishing blood. The patient was prescribed Danzhi Xiaoyao San with modifications. Moutan bark and charred gardenia fruit were included to clear liver heat. White atractylodes, when stir-fried, enhances its ability to dry dampness and invigorate the spleen. Bupleurum, with its bitter and slightly cold properties, is effective in soothing the liver, resolving depression, and regulating the circulation of Qi. White peony root replaces red peony root to clear and drain liver fire, cool the blood, and disperse without supplementing. Combined with angelica, it nourishes and regulates blood. These three herbs together tonify the liver and assist in its functions, soothe the liver, regulate qi, and invigorate blood. Licorice invigorates the spleen and eliminates dampness. Poria cocos and sour jujube seed calm the mind and tranquilize the heart. Coix seed, with its slightly cold nature and actions in the spleen meridian, promotes water circulation and eliminates dampness, clears heat, and drains pus. Andrographis and Chinese trumpet creeper, when used together, clear heat, eliminate toxins, drain pus, and promote blood circulation while regulating menstruation. The combination of these herbs regulates liver qi, invigorates spleen Qi, and harmonizes the liver and spleen. The entire formula works together to clear heat, eliminate toxins, soothe the liver, invigorate the spleen, regulate Qi, and nourish blood. During the second consultation, the patient's facial acne improved slightly, and her sleep returned to normal. Therefore, sour jujube seed and poria cocos were reduced, and the treatment was continued for another 6 doses. During the third consultation, the patient's facial acne on the face and forehead had basically disappeared, with no new outbreaks. Her tongue became pale red, with a slight thin yellow coating, and the bitter taste and dry mouth had mostly disappeared. She had a normal menstrual flow without blood clots. Therefore, Chinese trumpet creeper was discontinued, and the previous formula was continued for another 6 doses to consolidate the treatment effect.

## 6. Conclusions

In conclusion, for adult females with acne, the etiology, pathogenesis, and mechanisms of disease are complex. According to Dr. Yang Jianxin, the essence of acne in adult females lies in liver dysfunction, where the liver fails to regulate its functions properly over time, leading to impaired assistance to the spleen and stomach in digestion and transformation. This internal imbalance results in the accumulation of dampness and turbidity, which manifests as acne in the follicles. The treatment approach of "soothing the liver, invigorating the spleen, regulating Qi, and nourishing blood" is adopted. The basic formula of Danzhi Xiaoyao San is modified according to the individual's condition, aiming to promote smooth liver movement, strengthen the spleen, transform phlegm dampness, and eliminate acne. By adopting a holistic concept, differential diagnosis, and targeted treatment, the liver is regulated, the spleen is strengthened, and Qi and blood circulation are balanced, reflecting the treatment principle of addressing the root cause of the disease. Additionally, combining stress-reduction techniques, regulating emotions, and releasing pressure can contribute to the improvement of acne.

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