DOI: 10.53469/jcmp.2025.07(04).22

# Clinical Observation on the Treatment of Central Serous Chorioretinopathy of Liver Depression and Spleen Deficiency Type by TCM Comprehensive Therapy

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**Abstract:** ***Purpose:*** ***Clinical effect of traditional Chinese medicine (TCM) comprehensive therapy on 40 cases (80 eyes) of Central Serous Chorioretinopathy (CSC) of Liver Depression and Spleen Deficiency Type was reviewed.*** ***Methods:*** ***The patients were treated with Shugan Jianpi Lishui Decoction combined with acupuncture and Compound Anisodine injection at Taiyang. The Best Corrected Visual Acuity (BCVA) and Central Macular Thickness (CMT) were observed before and after treatment.*** ***Results:*** ***The total effective rate was 87.50%. The BCVA after treatment was significantly higher than that before treatment (P<0.05). The CMT after treatment was significantly lower than that before treatment (P <0.05).*** ***Conclusion:*** ***TCM comprehensive therapy has positive effect on improving the BCVA and eliminating CMT in treating CSC of liver depression and spleen deficiency.***

**Keywords:** Comprehensive treatment of TCM, CSC, BCVA, CMT, Retrospective study.

## 1. Introduction

Central Serous Chorioretinopathy (CSC) is a common ocular fundus disease characterized by serous detachment of the retinal neuroepithelial layer or Retinal Pigment Epithelium (RPE). It typically affects young to middle-aged adults aged 25-55, with a higher prevalence in males than females [1]. The condition usually occurs unilaterally, has a tendency to recur, and is self-limiting. However, repeated episodes can lead to progressive photoreceptor degeneration, triggering a series of pathological changes and potentially causing permanent vision loss [2]. Typical symptoms of CSC include central vision loss, relative scotoma in the central visual field, metamorphopsia, and dyschromatopsia. The etiology and pathogenesis of CSC remain incompletely understood. Studies suggest that risk factors include Type A behavior, genetic predisposition, excessive exogenous glucocorticoid use, elevated endogenous cortisol levels, and autonomic nervous system damage [3]. Additionally, increased choroidal vascular permeability and retinal pigment epithelium barrier dysfunction play critical roles in the pathogenesis of CSC, although the precise mechanisms are not fully elucidated [4]. Modern medicine still lacks specific treatments for CSC. Current therapeutic options include Vitamins, Propranolol [5], Aspirin [6], and Aldosterone Receptor Antagonists [7]. Other common interventions involve laser photocoagulation [8] and anti-Vascular Endothelial Growth Factor (VEGF) therapy [9].

Modern therapeutic approaches in traditional Chinese medicine (TCM) cover oral Chinese herbal decoctions, acupuncture, acupoint injection, acupoint application, and so on. Although these methods may not be able to completely cure this disease, they have remarkable effects in enhancing vision, reducing macular edema, and halting the further progression of the condition. As a result, they play a crucial role in enhancing the quality of life for patients. The Ophthalmology Department of Xi'an Hospital of Traditional Chinese Medicine has applied a comprehensive treatment for CSC of the Liver Depression and Spleen Deficiency Type. This treatment combines the Shugan Jianpi Lishui Decoction (SJLD, a formula designed to soothe the liver, strengthen the spleen, and promote diuresis) with acupuncture and acupoint injection. Here is the detailed report.

## 2. Clinical Data

### 2.1 General Information

From January 2017 to August 2024, 40 patients (40 eyes) with liver-depression and spleen-deficiency type of CSC were hospitalized at Xi'an Hospital of Traditional Chinese Medicine. Among them, there were 12 male cases (12 eyes) and 28 female cases (28 eyes).

### 2.2 Diagnostic Criteria

(1) Visual acuity decline, scotoma, metamorphopsia, and dyschromatopsia.

(2) Edema in the macular area of the fundus with disc-shaped shallow retinal detachment, surrounded by a reflex halo, and absence of foveal light reflex.

(3) Amsler grid test revealing central scotoma and grid distortion.

(4) Optical Coherence Tomography (OCT) showing neuroepithelial or/and pigment epithelial detachment in the macular area, loss of foveal light reflex, and punctate exudation or pigment disorder in the macula.

Syndrome Criteria for Liver-Depression and Spleen-

Deficiency Type: Ocular symptoms as above, accompanied by emotional distress, bitter taste and dryness in the mouth, distending pain in the chest and hypochondrium, reduced appetite, loose stools, red tongue with thin coating, and taut, thin, and rapid pulse.

2.2.1 Chinese Herbal Decoction Treatment

The Chinese herbal decoction consisted of: Bupleuri Radix (Chaihu) 15g, Paeoniae Radix Alba (Baishao) 15g, Poria (Fuling) 15g, Atractylodis Macrocephalae Rhizoma (Baizhu) 15g, Alismatis Rhizoma (Zexie) 15g, Angelicae Sinensis Radix (Danggui) 12g, Moutan Cortex (Mudanpi) 12g, Gardeniae Fructus (Zhizi) 12g, Chrysanthemi Flos (Juhua) 12g, Menthae Haplocal Ycis Herba (Bohe) 10g, Polyporus (Zhuling) 10g, Galli Gigerii Endothelium Corneum (Jineijin) 10g, Raphani Semen (Laifuzi) 10g, Lycii Fructus (Gouqizi) 6g, Cassiae Semen (Juemingzi) 6g, Glycyrrhizae Radix Et Rhizoma Praeparata Cum Melle (Zhigancao) 6g. The herbs were decocted in water to prepare 1 dose daily, administered orally in two divided doses (morning and evening). A 10-day course of treatment was administered consecutively for 2 courses.

2.2.2 Acupuncture Therapy

The selected acupoints are Jingming (BL1), Chengqi (ST1), Sizhukong (TE23), Tongziliao (GB1), Sibai (ST2), Baihui (GV20), Guangming (GB37), Hegu (LI4), Taichong (LR3), Zusanli (ST36), Pishu (BL20), Weishu (BL21), and Yinlingquan (SP9). The patient should sit upright. For Jingming, insert the needle perpendicularly to a depth of 0.5 cun. After inserting the needle accurately and quickly, apply a slight twirling motion. Once a distending sensation is felt, withdraw the needle immediately. Press the acupoint for 1 - 3 minutes after needle withdrawal to prevent bleeding. For the other acupoints, use the even - reinforcing and even - reducing method. Leave the needles in place for 30 minutes, and perform needle manipulation once during this period. The treatment is carried out once a day. When performing acupuncture, avoid areas with skin damage. 1 treatment course lasts for 10 days, and 2 consecutive treatment courses are required.

2.2.3 Acupoint Injection

Bilateral Taiyang (EX-HN5) acupoints were selected. Compound Anisodine Injection (2 mL) was used as the medication. After acupuncture sessions, routine local disinfection was performed. A needle was inserted perpendicularly into the skin to a depth of approximately 1 cm. Following aspiration to confirm no blood return, 1 mL of medication was injected into each acupoint. Treatments were administered once daily. A 10-day treatment course was conducted, with 2 consecutive courses applied.

### 2.3 Observation Indicators and Detection Methods

Visual acuity tests and OCT scans were conducted by the same physician before and after treatment. A standard logarithmic visual acuity chart (Guangdong Yuehua Medical Devices) was used to record best corrected visual acuity (BCVA) at both time points. OCT scans were performed using a Carl Zeiss Meditec scanner, with specific focus on measuring central macular thickness (CMT) before and after the treatment.

### 2.4 Clinical Efficacy Criteria

(1) Marked Effectiveness: Subjective symptoms disappear after treatment. Visual acuity improves from light perception to counting fingers, or from hand movement/counting fingers to ≥0.02, or increases by ≥2 lines (for patients with visual acuity <0.1, each 0.02 improvement equates to 1 line increase). Fundus examination indicates significant lesion improvement. (2) Effectiveness: Self-conscious symptoms improved significantly after treatment. Visual acuity improves from light perception to hand movement, or from hand movement to counting fingers, or from counting fingers to 0.02, or increases by 1 line (for patients with visual acuity <0.1, each 0.02 improvement equates to 1 line increase). Fundus examination shows partial lesion improvement. (3) Ineffectiveness: No improvement in subjective symptoms. Visual acuity remains unchanged or decreases. Fundus examination reveals no improvement or disease progression. Total Effective Rate = (Number of Marked Effectiveness Cases + Number of Effectiveness Cases) / Total Cases × 100%.

### 2.5 Statistical Methods

Statistical analysis was performed using SPSS 26.0 software. Qualitative data were described as "Number (Composition Ratio) [n(P%)]", with efficacy comparisons analyzed via chi-square test. Normally distributed quantitative data were presented as "Mean ± Standard Deviation ($\bar{x} \pm s$)", while skewed distribution data were expressed as "median (25th percentile, 75th percentile) [$M(P_{25}, P_{75})$]". Paired sample t-test was used for comparing normally distributed data before and after treatment, whereas paired sample rank sum test was applied for skewed distribution data. Statistical significance was defined as $P < 0.05$.

## 3. Results

### 3.1 Clinical Efficacy

Those showing marked effectiveness numbered 12 (12 eyes, accounting for 30.00%). The number of patients with effectiveness was 23 (23 eyes, 57.50%). There were 5 ineffective cases (5 eyes, 12.50%). The overall effective rate stood at 87.50%. Throughout this period, none of the patients reported any adverse reactions.

### 3.2 Comparison of BCVA Before and After Treatment

Before the treatment, the median BCVA of the 40 patients was 0.60, with an interquartile range of 0.40 to 0.80. After the treatment, the BCVA of the patients went up to a median of 0.80, and the interquartile range was 0.60 to 1.00. The difference between the two sets of data was statistically significant ($Z = -5.285$, $P < 0.001$) (Table 1).

**Table 1:** Comparison of BCVA Before and After Treatment

| | Number of eyes | BCVA | Z | P |
|---|---|---|---|---|
| Before Treatment | 40 | 0.600(0.40, 0.80) | -5.2 | <0. |
| After Treatment | 40 | 0.800(0.60, 1.00) | 85 | 001 |

### 3.3 Comparison of CMT Before and After Treatment

Before the treatment, the median CMT of the 40 patients was 395.50μm, with an interquartile range of 319.25μm to 484.00μm. After the treatment, the CMT of the patients went up to a median of 333.00μm, and the interquartile range was 279.50μm to 401.00μm. The difference between the two sets of data was statistically significant ($Z = -5.512$, $P < 0.001$) (Table 2).

**Table 2:** Comparison of CMT Before and After Treatment

| | Number of eyes | BCVA | Z | P |
|---|---|---|---|---|
| Before Treatment | 40 | 395.50(319.25, 484.00) | -5.5 | <0.0 |
| After Treatment | 40 | 333.00(279.50, 401.00) | 12 | 01 |

## 4. Discussion

Ancient Chinese doctors recognized CSC early and categorized it under terms like “Dimness of Vision” and “Straight Objects Appearing Curved” based on its clinical manifestations of visual decline, metamorphopsia, and dyschromatopsia. According to the modern TCM ophthalmology “Neiwulun” hypothesis, the macular area of the fundus corresponds to the spleen system, while the retinal neuroepithelial layer relates to the liver system. Thus, the pathogenesis of CSC is closely associated with dysfunction of the liver and spleen. Type A behavior, characterized by ambition, rapid action, hurriedness, irritability, and tendencies toward time urgency and hostility, is a known risk factor for CSC progression. Studies have linked this personality type to the TCM concept of “Liver Fire Syndrome” [10-11]. Liver depression transforming into fire damages the spleen. When spleen deficiency occurs, failure of food and water transformation leads to ascending clear yang and descending turbid yin fail. Turbid dampness then assaults ocular collaterals, stagnates in the macula, and obstructs vision—manifested as decreased visual acuity, distorted/discolored vision, and ultimately CSC.

Based on the above inferences, the therapeutic principle of soothing the liver, strengthening the spleen, and promoting diuresis holds significant importance for treating CSC. Therefore, the self-formulated SJLD was used for this condition. This formula is derived from the integration of Danzhi Xiaoyao Powder and Wuling Powder. Bupleuri Radix, Paeoniae Radix Alba and Angelicae Sinensis Radix can soothe the liver, relieve stagnation, nourish blood and invigorate circulation. Poria, Atractylodis Macrocephalae Rhizoma, Alismatis Rhizoma and Polyporus will promote diuresis, resolve dampness, tonify qi and strengthen the spleen. Moutan Cortex, Gardeniae Fructus, and Menthae Haplocal Ycis Herba can clear heat, relieve depression and prevent prolonged stagnation from transforming into heat. Galli Gigerii Endothelium Corneum and Raphani Semen will strengthen the spleen and resolve food stagnation. Chrysanthemi Flos, Lycii Fructus, and Cassiae Semen improve visual acuity. Glycyrrhizae Radix Et Rhizoma Praeparata Cum Melle harmonizes all ingredients. Collectively, the formula balances the liver and spleen, achieving effects of soothing the liver, strengthening the spleen, activating blood, and promoting diuresis. The selection of acupoints reflects TCM’s understanding of CSC. Jingming, Chengqi, Sizhukong, Tongziliao and Sibai are periocular acupoints that directly act on ocular meridians to improve visual acuity. Baihui at the vertex lifts yang qi and assists the spleen in transporting nutritive substances to the eye area. Guangming, the connecting point of the Gallbladder Meridian of Foot-Shaoyang, connects the Liver Meridians and Gallbladder Meridian and is a commonly used acupoint for treating eye disorders. Taichong, the source point of the Liver Meridian of Foot-Jueyin, regulates qi circulation throughout the body. Zusanli, the “He point” of the Stomach Meridian of Foot-Yangming and the “Xiahe point” of the stomach, strengthens the spleen’s qi movement to promote diuresis and resolve dampness. Pishu and Weishu, located on the Bladder Meridian of Foot-Taiyang on the back, are key acupoints for treating spleen-stomach weakness. Yinlingquan, the “He point” of the Spleen Meridian of Foot-Taiyin, strengthens the spleen and promotes diuresis. Acupoint injection combines the effects of acupuncture and medication. Compound Anisodine Injection contains active ingredients such as anisodine hydrobromide, Vitamin B12, and procaine hydrochloride. Studies indicate that superficial temporal artery-adjacent injection of Compound Anisodine Injection, combined with oral medication, effectively regulates retinal and choroidal microcirculation in chronic CSC patients, thereby improving their BCVA [12].

Modern medicine posits that CSC pathogenesis may involve dysfunction of choroidal capillaries [13], with elevated catecholamine and glucocorticoid levels acting as direct triggers for disease progression [14]. Under these hormonal influences, prostacyclin and nitric oxide (NO) release are suppressed, indirectly causing local vasoconstriction and altered hemorheology—manifested as slow blood flow and increased viscosity. This leads to elevated intrachoroidal capillary pressure and increased vascular permeability, ultimately resulting in abnormal choroidal leakage of macromolecules and fluid accumulation in CSC [15]. Additionally, glucocorticoid excess may enhance vascular responsiveness to angiotensin II, further exacerbating CSC development [16]. Based on formula composition and TCM pharmacology, combined with literature review, potential mechanisms by which certain ingredients in the SJLD alleviate CSC-related symptoms may be as presented in Table 3. Additionally, studies indicate Xiaoyao Powder extract effectively reduces plasma cortisol levels in rats with liver-depression/spleen-deficiency syndrome [17]. Meanwhile, the modified prescriptions of Xiaoyao Powder can, to a certain extent, antagonize the hyperactivity of the hypothalamic - pituitary - adrenal axis and achieve the effect of relieving depression [18]. What’s more, Wuling Powder can decrease plasma renin activity and aldosterone concentration in rats, suggesting potential inhibition of the renin-angiotensin-aldosterone system (RAAS) [19]. Collectively, these findings provide evidence supporting the use of SJLD for treating CSC.

**Table 3:** Potential Mechanisms of Herbs in SJLD for Treating CSC

| Herb | Mechanism |
|---|---|
| Bupleuri Radix [20] | Improves fibrinolysis function, increases NO levels, dilates choroidal blood vessels |
| Angelicae Sinensis Radix + Paeoniae Radix Alba [21] | Enhances NO production, promotes choroidal vasodilation |
| Bupleuri Radix + Paeoniae Radix Alba [22] | Reduces serum cortisol concentration |
| Polyporus [23] | Lowers angiotensin II levels, induces choroidal vessel dilation |

## Fund Project

This research is part of the project "[Shaanxi Provincial Administration of Traditional Chinese Medicine ' Blood and Water Treatment ' Key Laboratory of Eye Diseases]" funded by [Xi'an Hospital of Traditional Chinese Medicine].

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