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A Study on the Clinical Application and Dosage of Mulberry Leaf for the Treatment of Dryness Syndromes

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Abstract: This study summarizes the clinical experience recorded in classical formulas, the practice of renowned senior traditional Chinese medicine (TCM) physicians, the views of experts from the Committee for Research on the Dose–Effect Relationship of Chinese Materia Medica, and the experience of contemporary clinicians. Mulberry leaf is administered at 3–60 g in decoctions and 4–9 g per dose in pills or powders. The optimal dosage varies according to the disease, syndrome pattern, and presenting symptoms. For clearing lung heat, moistening dryness, and dispersing wind-heat in exogenous warm-dryness, dry cough due to lung heat, or wind-heat invading the lung, the usual decoction dose is 3–15 g; it may be increased to 30 g when dryness-heat has severely depleted body fluids, whereas the usual dose in pills or powders is 4–9 g. For cooling the blood, nourishing yin, clearing heat, and arresting sweating in night sweats or abnormal uterine bleeding, 20–30 g is commonly used in decoctions, or 9 g as a single-herb powder. For clearing heat and reducing blood glucose in wasting-thirst associated with dryness-heat, the usual decoction dose is 15–60 g. For nourishing yin and moistening dryness in acne, seborrheic alopecia, or constipation due to fluid depletion, 10–15 g is commonly used in decoctions and approximately 4 g per dose in pills or powders. Compatible herbs should likewise be selected according to the disease, syndrome pattern, and symptoms. Mulberry leaf may be combined with apricot kernel, Glehnia root, Ophiopogon root, gypsum, and loquat leaf to clear the lung and moisten dryness; with Astragalus root, Chinese angelica, Cornus fruit, or Danggui Liuhuang Tang to cool the blood, nourish yin, clear heat, and arrest sweating; with Coptis rhizome, Anemarrhena rhizome, mulberry twig, and white mulberry root-bark to clear heat and reduce blood glucose; and with black sesame seed, capillary wormwood herb, Adenophora root, and Chinese angelica to nourish yin and moisten dryness.

Keywords: Mulberry leaf; Dose–effect relationship; Compatibility; Clinical application

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1. Introduction

Mulberry leaf is the dried leaf of Morus alba L. (Moraceae). It contains numerous bioactive constituents, including flavonoids, alkaloids, polysaccharides, sterols, volatile oils, amino acids, and vitamins [1]. In TCM, mulberry leaf is sweet and bitter in flavor, cold in nature, and enters the lung and liver meridians. It disperses wind-heat, clears the lung and moistens dryness, and clears the liver to improve vision. It is an important medicinal for dryness syndromes and serves as the chief herb in renowned formulas such as Qingzao Jiufei Tang and Sangxing Tang, which are used for warm-dryness injuring the lung and dry cough due to lung heat. The Chinese Pharmacopoeia recommends an oral decoction dose of 5–9 g. In clinical practice, doses generally range from 5 to 60 g and should be individualized according to the disease and its stage [2]. This article reviews classical TCM texts and contemporary clinical experience to characterize the dosage and compatibility patterns of mulberry leaf in treating dryness syndromes and thereby inform its rational clinical use.

2. Dosage and compatibility in classical formulas

Ancient physicians frequently used mulberry leaf as a key medicinal for dryness. In combination with other Chinese medicinal herbs, it was prescribed for external dryness syndromes, including exogenous warm-dryness and warm-dryness injuring the lung, as well as internal dryness due to liver–kidney yin deficiency, manifested by dizziness, blurred vision, and constipation from fluid depletion. Mulberry leaf was also used for cough caused by wind-heat invading the lung because it both disperses wind-heat and moistens the lung. Textual research indicates that during the Song and Yuan dynasties, 1 liang was approximately 39–40 g and 1 qian approximately 3.9–4 g; during the Ming and Qing dynasties, the corresponding weights were approximately 36 g and 3.6 g, respectively [3].

For example, Qing · "Differentiation of Febrile Diseases" Qingzao Jiufei Decoction, Sangye Sanqian (about 11.2 g) Qingxuan Lung Dryness, combined with gypsum, ophiopogon japonicus, donkey-hide gelatin, etc., is used to treat the syndrome of warm dryness hurting the lung, and both qi and yin. The symptoms are headache, body heat, dry cough without phlegm, and asthma due to adverse breath. Tongshu Mulberry Apricot Soup, one qian of mulberry leaf (about 3.7 g), gently promotes warming and dryness, combined with apricot kernels, Adenophora root, etc. It is mainly used for treating external heat and dryness, with symptoms such as mild body heat, dry cough without phlegm, and dry throat and nose. Mulberry Chrysanthemum Drink is also from the book. Two and a half cents (about 9.3 g) of mulberry leaf are used to dispel wind and heat, and combined with chrysanthemum, apricot kernels, etc., it is a refreshing and mild medicine. It is mainly used for treating the initial onset of wind and temperature, cough, and mild body heat. Ming Dynasty's "Shou Shi Bao Yuan" Sang Ma Wan is a pill made of one pound of mulberry leaf (about 800 g, with a dosage of about 4 g per dose of mulberry leaf) to nourish the liver and kidneys. It is combined with black sesame seeds and white honey to form a pill. It is mainly used for treating symptoms such as dizziness, blurred vision, and constipation caused by liver meridian deficiency and heat. In the Qing Dynasty's "Collection of Medical Prescriptions", Fusang Zhibao Dan contains 500 g mulberry leaf to nourish the liver and kidneys, combined with 120 g Jushengzi and 500 g white honey to form a pill. Its function is similar to that of Sangma pills. Qing Dynasty's "Strange Stories of Syndrome Differentiation": Yizhu Fangsang Tang, with two liang of mulberry leaf (about 74.6 g) to dispel wind and dampness, is used in combination with Fangfeng, Atractylodes macrocephala, Coix seed, etc. It is mainly used to treat crane-knee wind caused by rheumatism entering the bones and causing swelling and pain. Song Dynasty's "Shengji Zonglu" mulberry leaf drink, one

large handful of mulberry leaf (about 10–15 g) to clear heat and relieve nausea, single ingredient decoction, mainly used for treating cholera, vomiting, and restlessness. Chuye comes from the same book, and one or two mulberry leaf (about 41.4 g, powder) are used to dispel wind and improve vision. They are combined with Chuye, Ganchrysanthemum, Fangfeng, Atractylodes macrocephala, etc., and are mainly used for treating visual diseases. Song Dynasty's "Prescription for Peace and Harmony" Donghua Powder, 300 g mulberry leaf to clear the lung and dissipate phlegm, is compatible with Donghua, Anemarrhena, Ephedra, donkey-hide gelatin, etc., which is mainly used to treat cold due to lung deficiency, cough and asthma. The "Clinical Guidelines and Medical Cases" by Ye Tianshi in the Qing Dynasty make good use of mulberry leaf combined with Danpi to clear heat, calm the liver, cool blood, and eliminate wind. The two drugs are used together in more than 50 places, and are scattered in more than 20 articles such as stroke, cough, vomiting blood, and visual diseases. Wei Longxiang mixed 9 g of mulberry leaf powder with rice to drink, single ingredient to stop sweating, and healed in half a month. Yan Dexin, a master of traditional Chinese medicine, once cured an elderly woman who had been sweating for two years by grinding mulberry leaf into powder and mixing 9 g of rice drink. She took it once in the morning and once in the evening, and recovered after half a month.

3. Dosage and compatibility experience of renowned senior TCM physicians

3.1. Pu Fuzhou

Pu Fuzhou identified externally contracted wind-warmth and constraint of lung qi as the key pathogenesis and advocated acrid-cool, dispersing treatment, consistent with the principle that "disorders of the upper jiao should be treated as lightly as a feather." He commonly combined mulberry leaf with chrysanthemum flower for early-stage wind-warmth disorders, including adenoviral pneumonia. Mulberry leaf lightly clears and diffuses the lung and disperses wind-heat, while chrysanthemum flower, forsythia fruit, and peppermint provide an acrid-cool action that releases the exterior. The dose of mulberry leaf was 3–6 g [4].

3.2. Yan Dexin

Yan Dexin held that the sweet and cold properties of mulberry leaf nourish yin, whereas its bitter and cold properties do not damage yang; it may therefore be combined with other medicinals for excess fire or deficiency heat of the lung and liver. For night sweats, he added mulberry leaf to Danggui Liuhuang Tang or administered 9 g of frost-exposed mulberry leaf powder with rice water twice daily [5]. For alternating chills and fever due to yin deficiency with internal heat, he combined mulberry leaf with moutan bark in place of Bupleurum root to clear deficiency heat. For facial hyperpigmentation, he added mulberry leaf (or mulberry root-bark) to Xuefu Zhuyu Tang to guide the formula to the lung. In acute or chronic nephritis, mulberry leaf or mulberry root-bark was used as a guiding medicinal to regulate the water passages through the lung. The usual oral dose was 4.5–9 g, including administration in pills or powders [6].

3.3 Zhang Lei

Zhang Lei, a master of traditional Chinese medicine, treats dryness syndrome by making good use of mulberry leaf. He emphasizes the importance of "using light and effective medicine with minimal dosage" and advocates for "treating the condition like a feather, not lifting it lightly" [7]. For the syndrome of warm dryness or cool dryness, the "Shufeng Runfei Method" was established, and mulberry leaf were used as the key medicinal in the self-formulated formula [8]. Zhang Lei believes that mulberry leaf have a light and clear

texture, and are good at removing excessive heat. They can not only dispel external pathogens, but also clear and moisten the lungs, which is highly consistent with his advocated “light, clear, promote, clear, and moisten” medicinal characteristics. For the treatment of cough caused by dryness, the dosage of mulberry leaf is usually 3–6 grams. For the treatment of cough in a 6-year-old child, 3 grams of mulberry leaf can be combined with perilla leaves, apricot kernels, and Platycodon root; to treat dry cough in adults, 6 grams of mulberry leaf are mixed with mulberry bark, Lycium root-bark, Sichuan Fritillaria, apricot kernels, etc., and pear bark and glutinous rice are used as reference [7]. Although Zhang Lei’s dosage is light, the combination is precise and often achieves the effect of “light can remove solid”.

3.4. Xu Runsan

Professor Xu Runsan, a master of traditional Chinese medicine, believes that the prolonged occurrence of abnormal uterine bleeding can lead to deficiency of yin and blood, deficiency of heat, and internal heat, which belong to the category of internal dryness [9–10]. The basic pathogenesis is kidney deficiency and dysfunction of liver and kidney regulation, resulting in the inability of the Chong and Ren meridians to regulate menstrual blood [10]. For the bleeding period of abnormal uterine bleeding, regardless of whether there is heat or blood stasis, the main pathogenesis is always the lack of solid qi and blood absorption. It is advocated to treat the symptoms in case of urgency, focusing on replenishing qi, blood absorption, and solid qi to stop bleeding [9]. Xu Lao has self-formulated a modified Danggui Buxue Tang to treat Qi deficiency type of abnormal uterine bleeding. The formula includes 50 g of Huangqi, 25 g of Danggui, 3 g of Sanqi powder, 30 g of mulberry leaf, 15 g of Cornus officinalis, 30 g of Atractylodes macrocephala, and 15 g of Fructus Aurantii immaturus [10]. Xu Lao believes that mulberry leaf are sweet and cold in combination, sweet can benefit the blood, cold can cool the blood, and can directly treat the essence of the disease of Yin blood deficiency and internal heat deficiency, achieving the effect of “stopping bleeding, clearing heat and clarifying sources, nourishing yin and restoring old”. Based on this, mulberry leaf are not only hemostatic drugs, but also the core medicine for treating internal dryness caused by abnormal uterine bleeding. The commonly used dosage is 20–30 g, which expands the clinical application scope of mulberry leaf as a traditional Chinese medicine for treating dryness.

3.5. Xuan Guowei

Professor Xuan Guowei, a master of traditional Chinese medicine, diagnosed and treated acne in the Lingnan region. He believed that although it manifested as blood heat and dampness in the lungs and stomach, the fundamental pathogenesis was insufficient kidney yin and excessive heat, resulting in abnormal sebum secretion and dry and flaky skin, which belongs to the category of internal dryness. In clinical treatment of acne, 10–15 g of mulberry leaf are often added to the formula for strengthening the kidney and spleen, combined with Mianyin Chen to clear heat, remove dampness, and eliminate fat and turbidity. To treat seborrheic hair loss, mulberry leaf are combined with pine needles, thin covered Ganoderma lucidum, and other ingredients to make soup, which can dispel wind, clear heat, reduce fat, and promote hair growth. For the treatment of female acne with facial dryness, scanty, pale menstruation, and other symptoms of fluid and blood deficiency, mulberry leaf combined with Angelica sinensis and Adenophora root can be used to nourish yin and moisten dryness, regulate menstruation, and promote fluid production. The commonly used dosage of mulberry leaf soup is 10–15 g [12].

4. Dosage and compatibility experience of experts in dose–effect research on Chinese materia medica

4.1. Tong Xiaolin

Academician Tong Xiaolin summarized the onset process of type 2 diabetes into four stages of "depression, heat, deficiency, and damage". The early "middle full internal heat" is a syndrome of dry heat with internal excess and burning body fluid. Mulberry leaf, mulberry branches, and mulberry bark are commonly used in clinical practice to form a small formula for clearing heat and lowering blood sugar: mulberry leaf powder is used for the upper burner and suppressing fire, usually at a dosage of 15–60 g; mulberry bark is used for clearing lung and stomach heat (15–30 g); Mulberry branches disperse meridians, skin folds, and stagnation of fire (15–30 g) [13]. In addition, Academician Tong proposed that "dryness of various scales and skin, dryness of orifices and limbs, all belong to dryness", and classified dryness syndrome into three categories: warm dryness, deficiency of body fluids and cool dryness, and excess of body fluids and cool dryness. Mulberry leaf have a cold and mild nature, and are good at clearing dryness-heat from the upper jiao. They require medicine to treat warm dryness. When treating pulmonary dryness syndrome (dry cough, dry throat), mulberry leaf are commonly used at 9–15 g, combined with Forsythia suspensa, peppermint, etc; for those with severe heat and fluid damage, it can be used up to 30 g [15]. Academician Tong's mulberry leaf, in small doses, clear and diffuse the lung and moisten dryness, while in large doses (15–60 g), they also clear dryness and lower blood sugar, reflecting the idea of co-regulation of the disease state and therapeutic targets.

4.2. Zhang Binghou

In the diagnosis and treatment of chronic cough, Zhang Binghou believes that the core pathogenesis is the failure of the lung to diffuse and descend, and the main syndrome types include phlegm dampness accumulation in the lungs, phlegm heat stagnation in the lungs, lung dryness and yin injury, and lung and kidney yin deficiency. Among them, the dry cough caused by "lung dryness and yin injury" is particularly suitable for the medicinal characteristics of mulberry leaf. Mulberry leaf are light in nature and cold in nature. They are good at clearing dryness-heat from the upper jiao, and are essential for treating chronic cough caused by lung dryness and yin injury. Mulberry leaf are often combined with products such as Ophiopogon japonicus, loquat leaves, and coltsfoot flower to nourish yin and moisten the lungs in clinical practice, usually weighing 9–15 grams [16]. In addition, Professor Zhang classified trigeminal neuralgia as "facial wind pain" and believed that its pathogenesis is Yin blood deficiency, wind phlegm entering the collaterals with blood stasis. Treatment should be aimed at harmonizing qi and blood, and clearing wind and collaterals [17]. Clinically, frost-exposed mulberry leaf are combined with Uncaria stem with hooks, chrysanthemum, and powdered kudzu root to dispel wind and clear heat, dispel wind and unblock the collaterals. The dosage of mulberry leaf is 10 g [17]. Professor Zhang Binghou uses mulberry leaf in clinical practice, with doses ranging from 9 to 15 grams, to treat chronic cough caused by lung dryness and yin injury, as well as head and face pain caused by dryness and heat entering the meridians, with a clear and moisturizing nature. This reflects the medicinal characteristics of mulberry leaf, which have a light and transparent texture and clear and smooth meridians.

4.3. Zhao Linhua

Zhao Linhua believes that the commonly used clinical dosage of mulberry leaf is 3–60 g, showing a dose–effect pattern of low-dose wind dispersing and high-dose blood sugar lowering [15]. Warm and dry cough

that invades the lungs and dry throat, with the pathogenesis of dryness, heat, and fluid damage. Mulberry leaf have a mild cold nature and are good at clearing dryness-heat from the upper jiao. To treat warm and dry cough, it is necessary to take small doses (3–15 g) in combination with spicy and cool products such as Forsythia suspensa and peppermint. Excessive use of mulberry leaf can enhance the function of clearing heat and generating body fluids, which can alleviate thirst caused by dryness and heat. In clinical practice, 15–60 g of mulberry leaf should be combined with bitter and cold products such as Huanglian and Zhimu. In addition, in metabolic syndrome with phlegm heat syndrome, "San Sang" (mulberry leaf, mulberry branches, and mulberry bark) is often used in combination to lower blood sugar, lipid, and uric acid levels [18]. Zhao Linhua's clinical use of mulberry leaf, low-dose clearing and promoting lung dryness to treat warm and dry cough, and high-dose clearing heat and lowering blood sugar to treat wasting-thirst due to dryness-heat, reflects the medication pattern of dose–effect relationship.

5. Modern medical dosage and compatibility

5.1. Combination with Gypsum and Loquat Leaf

Qingzao Jiufei Tang comes from the "Medical Law" and is a famous prescription for treating dryness. In the formula, mulberry leaf gently diffuse the lung and moisten dryness as the chief herb, gypsum clears lung and stomach dryness and heat, loquat leaves clear and lower lung qi. The two are minister herbs. Gypsum clears and relieves lung heat to treat its source, loquat leaves clear and lower lung qi to restore its function. The combination of three medicines, one clear and one lower, plays a role in clearing dryness, moistening the lungs, relieving cough and asthma. Liu Donghan is good at using the addition and subtraction of Qingzaojiufei Decoction to treat autumn dryness cough. He often uses 30 g mulberry leaf, 30 g gypsum, 12–15 g loquat leaves, together with Adenophora root, donkey-hide gelatin, ophiopogon japonicus, flaxseed, etc. [19]. Modern clinical research has confirmed that the modified Qingzao Jiufei Tang has a definite therapeutic effect on acute bronchitis, chronic pharyngitis and other lung dryness and fluid injuries [20].

5.2. Compatibility of Lily, Baibu, Schisandra chinensis

Cao Dongyi [21] treated chronic cough and lung cancer cough caused by Yin deficiency and lung dryness, as well as lung loss of lubrication, with self-formulated Sangpa 250 decoction. In the formula, mulberry leaf gently diffuse the lung and moisten dryness, combined with loquat leaves to clear and lower lung qi, lily to nourish and moisten the lungs, Stemona root to moisten the lungs and relieve cough, schisandra to nourish the lungs and produce fluids, Adenophora root and Ophiopogon root to nourish the yin of the lungs and stomach, Sichuan Achyranthes bidentata to induce medicinal descent, stir-fried malt to invigorate the spleen and stimulate appetite. The combination of these herbs has the effects of nourishing, lowering, moistening the lungs, resolving phlegm and relieving cough. Commonly used mulberry leaf are 12 g, loquat leaves are 12 g, lilies are 15 g, Stemona root are 15 g, and schisandra is 15 g [21].

Sun Guangrong believes that children's cough and wheezing are often caused by lung dryness and fluid damage, as well as the loss of control. The appropriate treatment method is to cool and moisten the lungs. Mulberry leaf can gently relieve lung dryness, loquat leaves can reduce lung qi, lily and Stemona root can moisten the lungs and relieve cough, and schisandra can nourish the lungs and produce fluid. The whole formula works together to nourish and moisten the lungs, resolve phlegm and relieve cough. Commonly used mulberry leaf are 12 g, loquat leaves are 12 g, lilies are 15 g, Stemona root are 15 g, and schisandra is 15 g [22].

5.3. Compatibility with Gualou skin, Yuzhu, etc.

Wang Jiaren et al. [23] self-formulated Runzao Liyan Tang to treat chronic pharyngitis. In the formula, honey roasted mulberry leaf are used to clear the lungs and moisten the throat. It is combined with Trichosanthes peel to clear the lungs and resolve phlegm, Polygonatum rhizome to nourish yin and moisten the throat, Platycodon root to promote lung and kidney function, Ophiopogon japonicus and Scrophularia to nourish the lungs and kidneys, generate fluids and invigorate the throat. Licorice harmonizes the actions of the other medicinals. The whole formula works together to clear the lungs, moisten the throat, nourish yin and invigorate the throat. Commonly used honey roasted mulberry leaf are 10 g, Trichosanthes peel is 8 g, Polygonatum rhizome is 10 g, Platycodon root is 10 g, Ophiopogon root is 15 g, Scrophularia root is 10 g, and licorice is 3 g [23].

5.4. Compatibility with Chrysanthemums

The combination of mulberry leaf and chrysanthemums is a classic traditional Chinese medicine formula for relieving symptoms, first seen in the book "Wen Bing Tiao Bian" about mulberry and chrysanthemum drinks. In the formula, mulberry leaf and chrysanthemums are used to cool and clear the body, dispersing heat from the upper burner. Mulberry leaf can clear the lung meridian, clear heat from the lungs, and stop coughing. They are commonly used as medicinal herbs for patients with initial onset of fever but mild cough.

Liu Bichen [24] treated dry cough in children in Northwest China with modifications of Sang Xing Tang and Sang Ju Yin. Liu Lao believes that the climate in the northwest region is dry, and children are prone to dry cough. Symptoms include dry cough, dry mouth and nose, dry throat and thirst. The treatment should focus on clearing lung dryness, dispelling wind and stopping cough. Mulberry leaf in the formula are used to gently promote dryness and heat, combined with chrysanthemums to dispel wind and clear heat, and combined with apricot kernels, Adenophora root and other products to moisten the lungs and relieve cough. Commonly used mulberry leaf weigh 10–15 g and chrysanthemums weigh 10 g.

Xu Jingshi [25] treats acne by combining 12 g of Adenophora root with 10 g of winter mulberry leaf and 15 g of Hangzhou chrysanthemum. Winter mulberry leaf disperse wind heat, moisten dryness and cool blood, Hangzhou chrysanthemum clears liver and eliminates fire, Adenophora root nourishes yin to control fire, and the three drugs work together to clear liver heat, moisten dryness and cool blood. Commonly used are 12 g Adenophora root, 10 g winter mulberry leaf, and 15 g Hangzhou chrysanthemum.

Li Zhenhua, a master of traditional Chinese medicine, proposed the treatment of Yin deficiency and external infection syndrome by combining nourishing yin and clearing heat with the treatment of Xin Liang penetrating the surface. Li Lao believes that for those who suffer from external wind heat and also have yin deficiency, the treatment should be a combination of nourishing yin and clearing heat, as well as Xin Liang Jie Biao. The formula mainly consists of Bei Sha Shen and Mai Dong, which nourish yin and clear heat, combined with Xin Liang Jie Biao drugs such as mulberry leaf and mint, and adjusted according to symptoms such as cough and lack of sweat. Commonly used in clinical practice are 10 g mulberry leaf and 10 g chrysanthemums, which work together to nourish yin and penetrate the surface.

Modern research has confirmed that the combination of mulberry leaf and chrysanthemums has a certain synergistic effect on antipyretic, anti-inflammatory, and protection against free-radical damage effects, which can confirm the compatibility theory of traditional Chinese medicine's "mutual reinforcement" [26].

5.5. Compatibility with Almonds

Lujialong [27] treats dry and hot cough in Kunming area, using a self-formulated formula of Sangxing decoction to reduce heat and moisten dryness. Lu Lao believes that Kunming is located on a low latitude plateau, with dry and less rainy seasons. In addition, local residents prefer to eat spicy and fragrant foods, which can easily turn heat into dryness. Therefore, the treatment of cough emphasizes both moistening dryness and clearing heat and phlegm. In the formula, mulberry leaf are used to gently promote lung heat and apricot kernels are used to reduce lung qi. Adenophora root and Ophiopogon japonicus are used to moisten the lungs and produce fluids, reed roots are used to clear heat and produce fluids, Zhejiang scallop mother is used to resolve phlegm and cough, and Erchen decoction is used to invigorate the spleen and resolve phlegm, while Qianjin reed stem decoction is used to clear the lungs and resolve phlegm. The whole formula uses mulberry leaf to gently diffuse the lung and moisten dryness, moisten the lungs, and relieve cough, combined with apricot kernels to promote lung qi, reduce qi, and relieve cough. One promotion and one reduction are used to achieve the function of promoting lung qi, moistening dryness, and relieving cough. Commonly used mulberry leaf are 10–15 g and apricot kernels are 6–10 g.

5.6. Compatibility with sand ginseng

Shi Suofang [28] treats post infection cough and effectively uses Sha Shen Mai Dong Tang to treat late stage cough. Professor Shi believes that post infection cough is located in the lungs, involving the liver and spleen, and pathological factors are mainly responsible for wind, phlegm, and fire. Clinical treatment can be divided into stages according to the course of the disease: in the early stage, emphasis should be placed on promoting transparency, in the middle stage, clearing and relieving stagnation heat should be the main focus, and in the late stage, clearing heat and nourishing yin, moistening the lungs and nourishing qi. The prescription can be modified with Sha Shen Mai Dong Tang and Qing Zao Jiu Fei Tang. Modern clinical research has shown that the modern clinical application of Sha Shen Mai Dong Tang mainly focuses on the respiratory and digestive systems, with specific diseases such as lung cancer, chronic bronchitis, cough, and Sjogren's syndrome [29].

6. Summary and Analysis

By summarizing classic formulas, renowned TCM physicians, experts from the "Formula, Dose, and Effect Research Committee", and contemporary clinicians' clinical experience in using mulberry leaf and their dosage, it is concluded that the commonly used dosage for oral decoction is 3–60 grams, and for powders or pills, it is about 4–9 grams per dose. Mulberry leaf have a sweet and bitter taste, a cold nature, and belong to the lung and liver meridians. They have the effects of dispersing wind and heat, clearing the lungs and moistening dryness, and clearing the liver and improving vision, making them an important medicine for clinical dryness treatment. Therefore, their clinical application mostly revolves around this effect. Firstly, treat the pulmonary dryness syndrome caused by external heat and dryness, heat and dryness injury to the lungs, and wind heat invading the lungs, such as dry cough without phlegm, dry throat and nose, headache and body heat. Mulberry leaf are light and clear, good at clearing the upper burner and drying the heat. They are combined with apricot kernels, ginseng, Ophiopogon japonicus, gypsum, loquat leaves, etc., with a dosage of 3–15 g (decoction), such as Sangxing Tang (3.7 g), Sangju Yin (9.3 g), Qingzao Jiufei Tang (11.2 g); For patients with severe dryness, heat, and fluid damage, it can be used up to 30 g. Secondly, it can be used to treat internal dryness syndrome, such as night sweats, diarrhea, acne, wasting-thirst, fluid

deficiency, constipation, etc. Mulberry leaf are sweet and cold, nourishing blood and cooling blood. They can be combined with Danggui Liuhuang Tang or single ingredient ground powder (9 g) to treat night sweats; Combination of Astragalus membranaceus, Angelica sinensis, and Cornus officinalis (20–30 g) to treat abnormal uterine bleeding; Combination of Mianyinchen, Angelica sinensis, and Adenophora root (10–15 g) for the treatment of acne and seborrheic alopecia; Combining Huanglian and Zhimu (15–60 g) to treat thirst, dryness, and heat; Combining black sesame seeds (pills, about 4 g per dose) to treat constipation; Thirdly, treat conditions such as crane-knee wind, cholera vomiting, trigeminal neuralgia, and visual disorders. Mulberry leaf combined with Saposhnikovia root, Atractylodes macrocephala, and Coix seed (about 74.6 g) is used to treat crane-knee wind; Single-ingredient decoction (10–15 g) for treating cholera and diarrhea; Combination of Gouteng and Chrysanthemum (10 g) to treat trigeminal neuralgia.

Modern pharmacological studies indicate that mulberry leaf has antioxidant, anti-inflammatory, hypoglycemic, and lipid-lowering effects [30]. Its clinical use is generally safe, with no obvious adverse reactions reported at conventional doses. By summarizing historical and contemporary clinical experience in the treatment of dryness syndromes, this review clarifies the dosage and compatibility patterns of mulberry leaf and provides a reference for rational prescribing and improved clinical efficacy.

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