

Observation on the Clinical Efficacy of Integrated Traditional Chinese and Western Medicine in the Treatment of Pityriasis Versicolor

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Abstract: ***Objective:** Observation of the clinical efficacy and safety of traditional Chinese medicine decoction combined with benzimidazole cream in the treatment of pityriasis versicolor. **Methods:** 65 patients with pityriasis versicolor were randomly divided into an observation group (35 cases) and a control group (30 cases) according to the principles of randomization, control, and single blind. The control group was given an external application of 1% benzimidazole cream, while the observation group was given an external wash of traditional Chinese medicine decoction on the basis of the control group. One course of treatment was 10 days, and the total course of treatment was 20 days. Record the clinical efficacy and adverse reactions of two groups of patients after 10 and 20 days of medication, respectively. **Results:** After 2 courses of treatment, the overall effective rate, cure rate, and fungal microscopy negative rate of the observation group were better than those of the control group. **Conclusion:** Combination of Chinese and Western medicine in the treatment of pityriasis versicolor can further improve the efficacy, which is worth to be promoted and used in the clinic.*

Keywords: Integrated traditional Chinese and Western medicine, Pityriasis versicolor, Clinical efficacy observation.

1. Introduction

Pityriasis versicolor, formerly known as tinea versicolor or sweat spots, is a chronic superficial fungal skin disease caused by *Malassezia* invading the stratum corneum of the skin [1]. Commonly seen in young and middle-aged men, and it is more common in areas with active sebaceous gland secretion such as the shoulder, back, chest, face, neck, and armpits. The typical clinical manifestation is brown, light red, or white patches with clear boundaries centered around the pores, covered with chaff like scales on the surface, and some may merge into flakes. Patients generally have no conscious symptoms, occasional mild itching and discomfort, aggravated by sweating, and are prone to recurrence in summer [2]. The main methods of Western medicine treatment for pityriasis versicolor are topical or oral antifungal drugs. In recent years, literature has reported that retinoids and phototherapy have also achieved certain clinical efficacy in treating this disease [3-5]. However, the above treatment methods are single and have significant adverse reactions, resulting in a gradual decline in clinical efficacy and increased drug resistance. In comparison, the use of a combination of traditional Chinese and Western medicine for the treatment of pityriasis versicolor has obvious advantages [6]. This study used a combination of traditional Chinese medicine decoction for external washing and benzimidazole cream for external application in the treatment of pityriasis versicolor, aiming to explore the clinical efficacy of integrated traditional Chinese and Western medicine in treating this disease. The report is as follows.

2. Information

2.1 General Information

65 patients with pityriasis versicolor admitted to our dermatology department from June 2023 to December 2023 were selected and divided into a control group (30 cases) and

an observation group (35 cases) according to the principles of random, single blind, and parallel control design. The random sequence was generated according to the random data table. Among them, there were 17 males and 13 females in the control group, aged 18-45 years, with an average of (30.33 ± 11.26) years, and a disease course of 7-180 days, with an average of (35.92 ± 31.71) days. There were 19 males and 16 females in the observation group, aged 18-40 years, with an average of (29.42 ± 10.28) years. The disease course ranged from 7 to 180 days, with an average of (34.62 ± 30.17) days. There was no statistically significant difference ($P > 0.5$) in general information such as age, gender, disease duration, and disease presentation between the two groups of patients, indicating comparability. See Table 1.

2.2 Diagnostic Criteria

Western medicine diagnostic criteria [7]: Commonly found in areas with abundant sebaceous glands such as the chest, shoulders, back, face, neck, armpits, and upper arms; The typical skin lesion is a spotted rash with clear boundaries centered around the pores, which can be brown, light red, or white, circular or almost circular in shape, and covered with pityroid scales on the surface; Generally without conscious symptoms, occasionally with mild itching; Fungal microscopy reveals clusters of round or oval thick walled spores or sausage shaped hyphae.

Traditional Chinese Medicine Syndrome Differentiation Standards [8]: Gastrointestinal Damp Heat Type: Skin lesions present as reddish or brown patches, mostly on the chest and back, with oily skin, self perceived itching, and obvious sweating; Accompanied by bitter mouth, sticky mouth, full abdominal distension, short and red urine, and foul stool; The tongue is red in color, with yellow and greasy coating, and smooth veins. Wind hot blood dryness type: The disease has a long course and is more common in the face and neck. The skin lesions are mostly light red and white patches, with a dry, flaky, and itchy surface, and dry and shedding hair;

Accompanied by dry mouth, thirst, and dry stool; The tongue has a reddish texture, thin white coating, and fine veins.

2.3 Inclusion and Exclusion Criteria

Inclusion criteria: 1) Meet the clinical diagnostic criteria for pityriasis versicolor; 2) Not using antifungal drugs or other medications within 2 weeks before starting treatment; 3) Obtain informed consent from the patient and be willing to closely cooperate with the treatment provider.

Exclusion criteria: 1) Individuals who are allergic to traditional Chinese medicine decoction; 2) Individuals with mental illnesses who cannot fully cooperate with treatment; 3) Pregnant and lactating women; 4) Those who cannot cooperate with follow-up visits on time.

3. Research Method

3.1 Treatment

The control group was treated with 1% benzimidazole cream topically. After cleaning the affected area with warm water daily, an appropriate amount of cream was applied according to the area of the skin lesion, and gently rubbed for 1 minute, twice a day. Before receiving the same treatment as the control group, the observation group added a self-made Chinese medicine decoction to wash the affected area externally. Specific drug composition: 30g Sophora flavescens, 15g Purslane, 15g Honeysuckle, 12g Perrin, 15g Chrysanthemum, 12g Dandelion, 12g Poria cocos, 15g White Fresh Peel, 10g Peppermint, 15g Kochia acoparia. Drug preparation: Add 2000-5000ml of water, soak for 30 minutes, boil, and then heat for 15-20 minutes. Filter out the residue and take the medicine solution to scrub the affected area. The water temperature is preferably 15-20 °C, twice a day for 30 minutes each time. Both groups were treated for 10 days as one course of treatment, and clinical efficacy and adverse reactions were observed and recorded after 10 and 20 days of treatment, respectively.

3.2 Observation Indicators

3.2.1 Clinical indicators

Observe the clinical symptoms and signs of the patient before treatment, 10 days after medication, and 20 days after medication, including skin lesion area, color, desquamation, itching, blisters, exudation, etc. At the same time, observe and record systemic and local adverse reactions after 10 and 20 days of medication.

3.2.2 Mycological examination

Direct microscopic examination of fungi was done before treatment, 10 days and 20 days after treatment. Direct microscopic examination of the specimen will be placed on a slide, add 1 drop of fungal fluorescent staining sealing solution, add a coverslip, gently press the coverslip to drive away air bubbles. Then suction to remove the overflow of liquid around the coverslip, stand for 2 min to be stained to the

full staining solution on the fungus, that is, placed under the light microscope to observe. First use low magnification to find the fungus, and then change the high magnification field of view to observe the structure of the fungus. Fungal microscopy to find mycelium or spores for positive results (more than 6 spores per high-magnification field of view). In order to prevent false-negative results, when three different lesions are taken, the interpretation of the results are negative before determining the negative Malassezia.

3.2.3 Assessment of efficacy

Refer to Clinical Dermatology Formulation [9]. Healing: disappearance of clinical symptoms and signs, negative fungal microscopy; Obvious effect: clinical symptoms and signs subsided by $\geq 60\%$, negative fungal microscopy; Improvement: clinical symptoms and signs subsided by 20% to 60%, positive or negative fungal microscopy; Ineffective: clinical symptoms and signs subsided by less than 20%, no change or deterioration, positive or negative fungal microscopy. Effective rate (%) = (number of healing cases + number of tangible effect cases + number of improvements)/total number of cases $\times 100\%$.

3.3 Statistical Analyses

SPSS 27.0 statistical software was used for data analysis, and quantitative data were expressed as mean \pm standard deviation. After observing whether the quantitative data follows a normal distribution and homogeneity of variance, parametric or non parametric tests are selected, and for the categorical data, X^2 test, corrected X^2 test, or Fisher's exact probability method are selected after observing the theoretical distribution frequency. The test level α is set at 0.05, and the difference is statistically significant when $P < 0.05$.

4. Results

Table 1: Comparison of general information of two groups (cases).

Groups	Cases	Sex		Age (x \pm s, y)	Disease course (x \pm s, d)
		Male	Female		
Observation group	35	19	16	29.42 \pm 10.28	34.62 \pm 30.17
Control group	30	17	13	30.33 \pm 11.26	35.92 \pm 31.71

Table 2: Comparison of the efficacy of the two groups for 10 days of treatment (cases)

Groups	Case	Healing	Obvious effect	Improvement	Ineffective	Effective rate
Observation group	35	0	20	12	3	91.43
Control group	30	0	13	14	3	90

Table 3: Comparison of the efficacy of the two groups for 20 days of treatment (cases)

Groups	Case	Healing	Obvious effect	Improvement	Ineffective	Effective rate (%)
Observation group	35	18	11	5	1	97.14

n group						
Control group	30	7	10	9	2	93.33

Table 4: Comparison of fungal clearance rate between the two groups at 20 days of treatment (cases)

Groups	Cases	Negative	Positive	Clearance rate (%)
Observation group	35	32	3	91.43
Control group	30	21	9	70

4.1 Comparison of Clinical Efficacy between the Two Groups

After 10 days of treatment, the effective rate of the observation group was higher than that of the control group, but there was no significant difference between the two groups in terms of overall cure rate and effective rate ($P>0.05$). After 20 days of treatment, the effective rate of the observation group was higher than that of the control group, and the difference was statistically significant ($P<0.05$), indicating that the overall cure rate and effective rate of the observation group were significantly better than those of the control group. Refer to Tables 1 and 2.

4.2 Fungal Examination

The fungal positivity rate of the observation group patients before treatment was 100%. After 20 days of treatment, 32 cases of fungal microscopy turned negative, with a negative conversion rate of 91.43%. The difference in fungal microscopy results between the observation group patients before and after treatment was statistically significant ($X^2=58.947$, $P<0.001$). The fungal positivity rate of the control group patients before treatment was 100%. After 20 days of treatment, 21 cases of fungal microscopy turned negative, with a conversion rate of 70%. The difference in fungal microscopy conversion rate between the two groups of patients after different drug treatments was statistically significant ($X^2=4.928$, $P<0.05$), indicating that the fungal efficacy of the observation group was better than that of the control group. See Table 4.

4.3 Adverse Reaction Observation

Only one patient experienced slight local erythema and itching discomfort during treatment, but it did not affect the subsequent administration of the drug, and the rest of the patients did not experience systemic and local adverse reactions.

5. Talk Over

Pityriasis versicolor is mainly caused by infection with *Malassezia*, a lipophilic yeast that is the most common human pathogen and an opportunistic pathogen. Long term use of glucocorticoids, broad-spectrum antibiotics, and people with poor physical condition who suffer from chronic diseases are more prone to illness, and high temperature, humidity, and excessive sweating are also important triggering factors. In addition, this disease also has genetic susceptibility [10, 11].

Malassezia exists in the stratum corneum and hair follicles of the skin. Under special conditions such as high temperature, humidity, and low immunity, *Malassezia* can proliferate in large numbers and transform from budding yeast phase to hyphal phase, causing skin inflammation, skin thickening, and abnormal pigment metabolism, ultimately leading to scales, local pigment reduction, or pigment increase [12]. Pityriasis versicolor is easy to diagnose based on typical clinical manifestations and fungal examination, but it needs to be differentiated from pityriasis rosea, pityriasis simplex, vitiligo, and other conditions. Both pityriasis rosea and pityriasis versicolor can present with round pale red lesions covered in scales, but pityriasis rosea is more common in spring and autumn. Prior to onset of pityriasis versicolor, there is a history of upper respiratory tract infection, and fungal microscopy examination is negative. The course of the pityriasis rosea is self limiting and generally does not recur after recovery, so the two can be distinguished; Vitiligo and pityriasis versicolor can both present as depigmented spots with clear boundaries, but vitiligo is more common in exposed and rubbed areas such as the face, back of the hand, wrist, and forearm, with a smooth surface and no scales attached. It is not difficult to distinguish between Wood lamps and fungal microscopy assisted examination. Both simple pityriasis and spotted pityriasis can present localized depigmented spots covered with scales, but simple pityriasis is more common in children's faces, with unclear boundaries at the edges of the lesions and no fungi found at the affected area.

As a commonly used topical antifungal drug, the active ingredient of bifonazole cream mainly inhibits the fungal cell membrane through ergosterol, causing damage to the fungal cell membrane and ultimately achieving the effect of inhibiting surface fungal growth. It also has a killing effect on yeast and ringworm. In addition, in vitro experimental studies have shown that the drug also has a certain degree of improvement in symptoms such as erythema, itching, and blisters [13, 14]. However, the treatment of skin fungal diseases with external application of bifonazole cream alone has a long treatment cycle, high recurrence rate, and many adverse reactions, making it difficult to achieve ideal clinical efficacy.

Traditional Chinese medicine believes that pityriasis versicolor belongs to the categories of "sweat spots," "purple vitiligo," and "summer spots" [15]. In the book "Authentic Surgery" [16], it is recorded that "Purple vitiligo is one of two types. Purple vitiligo is caused by blood stagnation, while white vitiligo is caused by qi stagnation. It is always invaded by hot body rheumatism, which congeals pores and leads to insufficient qi and blood. All of these are caused by external factors." Emphasize that the main causes of the disease are the blockage of pores and stagnation of qi and blood caused by external rheumatism. The Ming Dynasty's "Compendium of Materia Medica" states: "Purple vitiligo is characterized by multiple facial features. At first, it is painless and itchy, but gradually becomes slightly itchy, spreading into patches or wandering throughout the body. Pure purple spots are accompanied by purpura, while pink spots with white spots are called vitiligo, and sweat is present." This is a detailed description of the clinical manifestations of pityriasis versicolor. Modern medical experts believe that the overall etiology and pathogenesis of this disease are mostly due to the

accumulation of dampness and heat, wind and heat attacking the surface, external pathogens, and competing with the skin. Or it may be caused by excessive sweating due to heat, invasion of dampness and pathogenic factors, infestation of insects by damp heat, or invasion of the skin by insects [17]. Luo Xiaojun [18] et al. believe that pityriasis versicolor is mainly caused by the three evils of dampness, heat, insects, and toxins. The treatment of severe dryness and dampness on the upper side, heat removal, and insecticidal effects is reliable and has no significant adverse reactions. The main drugs used for treating this disease include hibiscus skin, snake bed seeds, Cang'er seeds, *Sophora flavescens*, etc. Sun Zejun [19] et al. followed the external treatment method of Wu Shiji to treat pityriasis versicolor, emphasizing clearing heat and dampness, dispelling wind and itching. The drugs used were also *Sophora flavescens*, *Hibiscus syriacus* bark, and Bai Bu. Zhang Jing [20] believes that this disease is mostly caused by internal heat in the body, external pathogenic factors of rheumatism, and stagnation in the skin pores. External treatment should be the main approach, such as clearing heat and dampness, killing insects and relieving itching. The self-made external compound sweat spot tincture has the advantages of safety, effectiveness, and low recurrence rate in treating pityriasis versicolor. Its composition includes traditional Chinese medicine such as hibiscus bark, yellow cypress, and radix steamonae.

Based on the clinical manifestations and characteristics of pityriasis versicolor, the author believes that the treatment of pityriasis versicolor should be based on damp heat and insect toxicity, with the treatment methods of clearing heat and detoxifying, deworming and drying dampness, dispelling wind and relieving itching. In this study, *Sophora flavescens*, a traditional Chinese medicine external washing formula, has the effects of clearing heat and dampness, killing insects and relieving itching. It is a commonly used medicine for treating itchy skin diseases caused by dampness and heat. Modern pharmacological research has confirmed that *Sophora flavescens* has anti-inflammatory, anti allergic, and anti-tumor effects. Its active ingredients, matrine and oxymatrine, have varying degrees of inhibitory effects on skin fungi such as *Malassezia*, *Trichophyton*, and *Xanthophyton* [21, 22]. *Kochia acoparia* is a traditional Chinese medicine used to clear heat and dampness, dispel wind and relieve itching. It is used to enhance the effectiveness of *Sophora flavescens* in drying dampness and killing insects. This medicine contains ingredients such as saponins from *Kochia scoparia* and oleanolic acid, which have certain inhibitory effects on fungi such as *Trichophyton parahaemolyticus* and *Trichophyton tinctorius*. The decoction has pharmacological effects such as anti-inflammatory, diuretic, and immunosuppressive effects [23, 24]. Paired with *Poria cocos* for detoxification and diuresis, and *Portulaca oleracea* for clearing heat and detoxification. The alkaloids, sterols, saponins and other components in *Poria cocos* have good antibacterial effects on *Escherichia coli*, *Klebsiella pneumoniae*, and *Staphylococcus aureus* [25]. Purslane has anti-inflammatory, antioxidant, and antifungal effects. It contains various active ingredients with antibacterial effects, such as purslane polysaccharides and flavonoids, and has inhibitory effects on red ringworm fungus, *Staphylococcus aureus*, etc. [26, 27]. Honeysuckle, wild chrysanthemum, and dandelion share the function of clearing heat and detoxifying.

Taking the five flavors of disinfectant drink, it has broad-spectrum antibacterial effects [28, 29]. Perrin aromatization and humidification are adjuncts with anti-inflammatory, anti-tumor, antibacterial and other effects. Perrin volatile oil has a certain inhibitory effect on mold, bacteria, and yeast, and flavonoids have a better antibacterial effect on *Bacillus subtilis* [30]. Mint aromatic powder is a medicinal herb with antiviral, antifungal, and anti-tumor effects. Its active ingredients include flavonoids, phenolic acids, volatile oils, and other substances [31]. The combination of various medicines has the effect of detoxifying, drying dampness, and relieving itching.

The results of this study showed that there was no significant difference in overall effective rate between the observation group and the control group after 10 days of treatment, which may be related to the shorter treatment course and smaller sample size. But after 20 days of treatment, the cure rate, effective rate, and fungal clearance rate of the observation group were better than those of the control group. During the research process, all patients did not experience significant adverse reactions. Therefore, it can be considered that the combination of traditional Chinese and Western medicine can further improve the efficacy and safety of treating pityriasis versicolor, which is superior to the simple external use of Western medicine and worthy of clinical promotion and use.

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