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Review

Traditional Chinese medicine for the treatment of psoriasis vulgaris: A systematic review

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With a long history, the treatment of psoriasis by traditional Chinese medicine (TCM) could be divided into prophase, metaphase and anaphase. The earliest description of psoriasis dated back to A.D. 581 in ancient Chinese Song Dynasty. After that, a large number of treatment methods emerged with the increasing understanding of the disease. In this paper, a statistical analysis of the TCM category and frequency for the treatment of psoriasis vulgaris (PV) in metaphase and modern times was performed to investigate its potential regularity. Different medications were applied for the treatment of PV in metaphase and modern times. In modern times, many prescriptions and TCM ingredients were confirmed to be effective for the treatment of PV. However, based on the clinical literatures, more systematic research methods were needed before the acceptance of evidence-based medicine.

Key words: Psoriasis vulgaris, traditional Chinese medicine, treatment, history.

INTRODUCTION

Psoriasis vulgaris (PV), a chronic repetitive skin disease featured by excessive proliferation of epidermal cells was the most common clinical type of psoriasis. In United States, psoriasis caused great threats to a large number of people with a prevalence rate of PV 2.6% (Koo, 1996). According to the data indicated by National Research and Cooperation Meeting of Psoriasis in 1984, the prevalence rate was 0.17% in Chinese civilians. To date, there is no satisfactory treatment for PV. Since 1950s, antineoplastic agents were used for the treatment of psoriasis to gain time-optimal control of the situation. However, immediate recurrence was common after drug withdrawal. Moreover, adverse reactions were frequently observed after drug administration, such as leucopenia and hepatic function injuries. After 1980s, retinoic acid-like drugs were used for the first line treatment. These drugs were not widely used as severe dry mouth and hepatic function injuries were frequently noted.

Traditional Chinese medicine (TCM) refers to a broad range of medical systems including herbal medicine, acupuncture as well as the other non-medical methods. It was the main method for medical care throughout East Asia before the era of modern medicine. According to the TCM theory, psoriasis was designated as white mange in its appearance. Based on its pathogenesis, several designation systems were used, such as pine bark-like tinea, psoriasis, white-shell ulcer, stubborn dermatitis and others. The earliest description about psoriasis dated back to AD 581. Until now, TCM has been used for the treatment of psoriasis in China for a long history, attracting more attention all over the world. In this report, we summarize the application of TCM for the treatment of PV.

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PROPHASE

The earliest description of PV was reported in Zhubing Yuanhou Lun (General Treatise on the Etiology and Symptoms of Diseases) written by Chao Yuanfang in Sui Dynasty (AD 581-618). In this book, tinea was divided into three categories (that is, psoriasis, acute eczema and corporic tinea) based on their symptoms and pathogenesis. Psoriasis was defined as a disease characterized by the presence of scaliness, pruritus and a clear red color and a sharp boundary between healthy and sick skin. According to these manifestations, we concluded that the definition of psoriasis mentioned in Zhubing Yuanhou Lun showed close similarities with the definition of modern psoriasis, seborrheic dermatitis, pityriasis rosea and lichen planus. This information about psoriasis laid the foundation for the understanding of modern psoriasis, especially the detailed description of pathogennesis which mentioned psoriasis stemmed from wind-damp pathogen located in striae of the skin, resulted from the imbalance between cold-dampness and *Qi* and blood. This description was still applied in modern times for the diagnosis of psoriasis.

METAPHASE

The metaphase of PV treatment dated from A D 618 to AD 1911 with its mainly stages in Tang Dynasty, Song Dynasty, Ming and Qing Dynasty in China. TCM was at the developmental stage in Tang and Song Dynasty. According to the literatures currently existed, it was specu-lated that the knowledge and research of PV at that period was the same as Zhubing Yuanhou Lun. In Wai Tai Mi Yao (The Medical Secrets of an Official); it was mentioned the source of PV was mainly due to the wind-wetness evil in skin combined with imbalance between cold-dampness and *Qi* and blood. In addition, many external recipes were firstly reported for the treatment of psoriasis and acute eczema, which were mainly for eliminating of dampness and pesticides. Even since the metaphase, TCM treatment entered into a stage to understand and investigate the treatment of PV based on clinical manifestations, pathogenesis and TCM recipes.

In Ming and Qing Dynasty (AD 1368-1911), a profound understanding of PV was obtained as a series of systematic literatures which were available. In Dou Shi Wai Ke Quan Shu (The Dou Encyclopedia of Surgery) written by Dou Hanqing, stubborn dermatitis was considered to be related with dampness-heat in spleen channel and the etiological factors in lung *Qi*. Some treatment plans including elimination of cardiopyrexia and anemo-pulmonary disease were proposed. Among these treatment plans, two medications Shu Feng Shao Huo Tang (Disperse Wind-heat Decoction) and San Wei Pill were taken by oral administration. After that, medicines for oral administration drew gradual attention for the treatment of PV. Another simultaneously published book- Yi Xue Ru Men (Guide to Medicine) described psoriasis as mainly caused by the blood heat and wind-dry (the internal cause) in combination with etiological factors existed in the skin (the external cause). Dry heat in blood aspect was considered the main cause of psoriasis for the first time. Another book Wai Ke Da Cheng (Compendium of Surgery) published in early Qing Dynasty mentioned “white mange” with the description of “white scabies in skin, feeling itch, white scales produced in the diseased region when scratching”. According to these manifestations, we speculated the white mange which showed similarity with the modern description of psoriasis. In this book, white mange was thought to be related with blood dryness and wind-heat invasion. Thus, the prescription was mainly based on dispelling wind-evil, nourishing blood and moisturizing dryness-syndrome. Later, another book Yi Zong Jin Jian (Golden Mirror of Medicine) distinguished tinea from white mange, and proposed clear definition between tinea and white mange. For the pathogenesis, the author considered it to be related with wind-evil disorder in skin and blood dryness. With regards to the treatment, it was proposed by oral administration of Fang Feng Tong Sheng Pills, followed by Sou Feng Shun Qi Pills, plus external application of swine fat and apricot kernel (equal amount, grind into powder). Another book Waike Zhengzhi Quanshu (Guide for Treatment Therapy of External Disorders) mentioned the pathogenesis of PV stemmed from blood-deficiency and pathogen dryness. Thus, treatment methods for moisturizing dryness by nourishing blood and activating blood circulation were advocated. Moreover, oral administration and external application of TCM were stressed.

After looking through the TCM literatures about the treatment of psoriasis, Lin (2002) concluded that 40 recipes of oral medications (Table 1) and 149 recipes (Table 2) of external application drugs (compound recipe: 80, single recipe: 69). For the 40 recipes of oral medications, 70% (28 recipes) were drugs for expelling wind and eliminating dampness (medications for expelling wind and removing cold: 14 recipes, medications for expelling wind and removing heat: 9 recipes). Eleven (11) recipes of the medications were for insect disinfestations and detoxication. Seven (7) recipes of them were for nourishing yin and blood. Five (5) recipes were for activating blood circulation to dissipate blood stasis. Four (4) recipes were for clearing heat and eliminating dampness. Two (2) recipes were for benefiting *Qi*.

MODERN TIMES

Modern times of TCM refer to the time period from the period of the Republic of China to today. Various theories about the pathogenesis of psoriasis existed in this period, among which blood-heat, blood stasis and blood deficiency were commonly acknowledged. For the treatment of PV in this period, oral administration of TCM was significantly emphasized, followed by external application.

Table 1. Summary of the 40 recipes of oral medication.

Drug name	Recipe
Wind-cold dispelling medicine	
Fineleaf schizonepeta herb	6
Incised notopterygium rhizome and root	6
Rhizome of Chinese Monkshood	4
Chinese ephedra herb	3
Fistular onion stalk	2
Angelica	2
Dispelling wind and eliminating dampness	
Divaricate Saposhnikovia	10
garter snake	6
heracleum	2
Variegated Coralbean Bark or Root-bark	2
Chinese Clematis Root and Rhizome	2
Xanthium sibiricum patrin.ex widder	3
atractylodes	2
Wind-heat dispelling medicine	
Duckweed	3
Black Cicada Slough	3
Chrysanthemum	2
Liver-pacifying Wind-extinguishing Medicine	
Silkworm larva	5
Tribulus terrestris	4
Tall gastrodia rhizome	3
Earthworm	1
Antipyretic drying dampness agent	
Lightyellow Sophora Root	10
root of Baikal skullcap	4
cape jasmine	4
Coptis Rhizome	3
Insect disinfestation and detoxication medicine	
Japanese Dock Root	6
scorpion	6
Bigfruit elm pasdt	1
Semen Pharbitidis	1
Rangooncreeper Fruit	1
Drugs for promoting blood circulation and removing blood stasis	
Szechwan Lovage Rhizome	4
gleditisae sinensis	3
Gleditsia sinensis sting	2
Rhubarb	1
Nourishing yin and blood	
Chinese Angelica	5
White Peony Root	2
prepared rhizome of rehmannia	2
Upright Ladybell Root	2
Tuber Fleeceflower Root	1

Table 1. Contd.

Drugs for benefiting *Qi* and blood	
Poria cocos	3
Liquorice Root	3
Ginseng	2
Common Yam Rhizome	2
Others	
Submature Bitter Orange	2
acorus calamus	1
Giant Typhonium Tuber	1
Colophony	1
Mongolian Snakegourd Fruit	1

Based on the medication frequency, most of the recipes were used for expelling wind and eliminating dampness including 13 kinds of medications expelling wind and removing cold (with a frequency of 49), 3 kinds of medications for expelling wind and removing heat (with a frequency of 8). Four kinds of medications for clearing heat and eliminating dampness were noted with a frequency of 21. Five kinds of medications applied for insect disinfestation and detoxication were noted with a frequency of 15. Five kinds of medications for nourishing yin and blood were noted with a frequency of 12. Four drugs for promoting blood circulation and removing blood stasis were noted with a frequency of 10. Four benefiting *Qi* medications were noted with a frequency of 10.

Table 2. Summary of the 196 recipes of external treatment medication.

Drug name	Recipe
Insect disinfestation and detoxication medicine	
Calomel	22
Sublimed sulfur	19
Japanese Dock Root	17
Red Orpiment	16
Black Falsehellebore root	7
Cortex pseudolaricis	6
Betelnutpalm seed	5
Camphor	4
Zanthonxyli Fructus	4
Aole	4
Scorpion	3
Bigfruit elm pasdt	3
Arsenic	2
Wolf tooth	2
Stasis-breaking medicine	
Chinese blistering beetle	18
Purging croton seed	4
Gleditisae sinensis	3
Rhizome arisaematis	3
Forest musk	3
Rhubarb	2
Chinese Trumpetcreepet	2
Common Swisscentaury Root	2
Lanceleaf Anisetree Root-bark	3

Table 2. Contd.

Silkworm larva	2
mirabilite	3
Drugs for dispersing wind, cold and dampness	
Common cnidium fruit	8
Aconite	7
Medicinal evodia immature fruit	4
Prepared Common Monkshood Daughter Root	2
Cinnamon	2
Purple common perilla	2
Angelica	2
Xanthium sibiricum patrin.ex widder	2
Antipyretic drying dampness agent	
Chinese Goldthread Rhizome	6
Lightyellow Sophora Root	3
Amur Corktree Bark	2
Corrosive astringents	
Alumen	19
Chinese gallnut	80
Common bletilla tuber	3
Longleaf Garden Burnet Root	2
Smoked plum	2
Drugs for moisturizing dryness-syndrome	
Almond	4

According to the medication frequency of the externally applied agent, we concluded that most of the TCM were insect disinfestation and detoxication medicine (14 kinds with a frequency of 114), corrosive astringents (5 kinds with a frequency of 106), stasis-breaking medicine (11 kinds, with a frequency of 45), drugs for expelling wind and removing cold (8 kinds, with a frequency of 29), heat-clearing and damp-drying medicine (3 kinds with a frequency of 11). These medications were mainly consistent with the pathogenesis of wind, cold, dampness and worm theory mentioned in the literatures.

Zhao Bingnan, a well-known TCM expert on blood-heat theory, speculated that the main reasons for psoriasis were obstruction of *Qi*, heart fire hyperactivity, deposition of toxic heat in Yingfen and Xuefen, and frequent attack of wind-heat evil toxic invasion. Meanwhile, he advocated cooling blood, activating the blood circulation as well as clearing away the heat evil and expelling superficial evils as well as for the treatment of psoriasis. And the TCM frequently used included baikal skullcap root, amur corktree bark, rhubarb, rhizome coptidis, gypsum fibrosum, indigo naturalis, glabrous greenbrier rhizome, honeysuckle flower, oldenlandia, indigowoad root, forsythia fruit, dried rhizome of rehmannia, red peony root, tree peony bark and redroot gromwell. In another book, Wu Shaoxi speculated that psoriasis was mainly due to obstruction of yingfen and xuefen leading to stasis in skin. Qin Wanzhang advocated that psoriasis was mainly due to blood heat, followed by blood-deficiency, blood dryness and cold in blood. He considered that blood stasis existed throughout the whole process of the disease. And the treatment plans were mainly based on activating blood circulation to dissipate blood stasis as well as dispelling wind-evil and detoxication. The TCM commonly used were red sage root, suberect spatholobus stem, safflower, zedoary root, peach seed, rhizome sparganii, zaocys dhumnades, scorpion, wasps nest and centipede. Advocated by the blood deficiency theory, Gu Baihua speculated that psoriasis was mainly caused by deficiency of yingfen and xue fen leading to mal-nourished skin and muscle. Thus, he proposed nourishing blood, dispelling wind-evil and moisturizing dryness for the treatment of psoriasis. The TCM used included Chinese angelica, tuber fleece flower root, white peony root, prepared rehmannia root, divaricate saposhnikovia,

Table 3. Literatures about the oral administration of TCM for the treatment of PV.

Author (date)	Prescription	Methodology	Samples	Drug combination	Evaluation standards	Treatment outcome
Hu et al. (1985）	Given based on the symptoms	No control	256	Boric acid ointment	B	87 (cured), 82 (improved), 87 (not cured)
Zhang et al. (1996)	Given based on the symptoms	Set control	64	Triamcinolone and urea cream	A	8, 43, 13
Guan (1998)	Xian Fang Huo Ming Pill	RCT	25	Triamcinolone and urea cream	A	18, 6,1
Chen (1998)	Xiaoyin recipe	No control	132	-	A	71, 48, 13
Yang et al. (2001)	Yinkang granule	RCT	98	Hydrocortisone butyrate ointment	A	59, 32, 7
Qu et al. (2001)	Xiaoyin Jiedu Yin	RCT	85	-	D	22, 38, 25(18+7)
Shi (2001)	Tuhuai Liugen Decoction	RCT	118	Mixture for dispelling evil and supporting right	F	76, 33, 9
Li (2002)	Huangqi injection combined with Danshen injection	RCT	23	Vitamin C tablets， Vitamin E pellets, oral administration	D	20, 3, 0
He (2002)	Niu Huang Infusing Powder	RCT	59	-	D	11, 26, 21(14+7)
Shi et al. (2002)	Baiqi recipe	No control	500	Baiqi Liquid	A	348, 138, 14
Lian (2003)	Qingre Huoxue Tang	RCT	33	Vitamin A pellet, oral administration	D	9, 11, 13(9+4)
Zhang et al. (2003)	Xuesaitong injection	RCT	60	Hydrocortisone butyrate ointment	Self-established	38, 12, 10 (7+3)
Hu (2004)	Yinxie powder	RCT	46	-	D	9, 22, 15(11+4)
Wu (2005)	Jie Du Hua Yu Tang	RCT	50	-	E	21, 13, 16(11+5)
Qiu et al. (2005)	Xiaoyin Decoction for activating blood flow and removing blood stasis	RCT	32	Clobetasol propionate ointment	E	15, 9, 3
Bai et al. (2006)	Liangxue Sigen Decoction	RCT	35	Hydrocortisone butyrate ointment	D	11, 9, 15(11+4)
Zhang et al. (2007)	Xiao Yin Decoction	RCT	52	-	G	31, 12, 9(7+2)
Li et al. (2008)	Xiaopi granule	RCT	352	Externally applied agent	A	174, 63, 115(71+44)
Xiong et al. (2008)	Qingre Liangxue Xiaopi Decoction	RCT	100	Vitamin A pellet, VitB12 pellet, oral administration	D	52, 34, 14(8+6)
Wang et al. (2008)	Dan Huai Yin Xie Concentrated Pill	RCT	135	Hydrocortisone Butyrate Ointment	C	50, 68, 17(12+5)
Wang et al. (2009)	Tigason tablets	RCT	24	-	D	4, 9, 11(8+3)
Meng et al. (2009)	Xijiao Dihuang decoction and cornu antelopis powder	RCT	78	Mometasone Furoate Cream	A	42, 34, 2
Zhao et al. (2010)	Huanglian Jiedu Decoction	RCT	32	-	D	14, 31, 5
Zhao et al. (2010)	Qingyin Recipe	RCT	60	Hydrocortisone butyrate ointment	D	22, 28, 10(8+2)
Rong et al. (2010)	Promoting eruptions and detoxication powder	RCT	60	-	C	17,,18, 25(11+14)
He et al. (2010)	No. 1 Xiaoyin Recipe	RCT	62	Hydrocortisone Butyrate Ointment	D	18, 31, 13(10+3)

RCT, Randomized-controlled trials; A, diagnosis and efficacy standards of TCM disease and syndromes, established by National administration of Traditional Chinese Medicine in 1994; B, self-established standards; C, Guideline for Clinical Trials of New Patent Chinese Medicines, established by Ministry of Health of the People's Republic of China in 2002; D, Global PASI standards; E, Standards of Research and Cooperation Team of Psoriasis in Shanghai, 1999.

Table 4. Literatures about the external application of TCM for the treatment of PV.

Author (date)	Prescription	Methodology	Samples	Drug combination	Evaluation standards	Treatment outcome
Zhang (2000)	Pulian emulsion	RCT	37	External application	B	10, 23, 4
Wang (2003)	violet emulsion	RCT	56	External application	A	31, 20, 5
Liu (2003)	Xiaoyin oil	No control	68	External application	B	13, 32, 23
Lu (2004)	Quyinding	RCT	31	External application	A	8, 16, 7
Chen (2005)	Medicated bath	RCT	80	Medicated bath	E	28, 36,16
Wang (2006)	Psoriasis prescriptions	No control	30	Fumigation	D	9, 16, 5

RCT, Randomized-controlled trials; A, diagnosis and efficacy standards of TCM disease and syndromes, established by National administration of Traditional Chinese Medicine in 1994; B, self-established standards; C, Guideline for Clinical Trials of New Patent Chinese Medicines, established by Ministry of Health of the People's Republic of China in 2002; D, Global PASI standards; E, Standards of Research and Cooperation Team of Psoriasis in Shanghai, 1999.

stiff silkworm, largeleaf gentian root, antelope horn, dwarf lilyturf root tuber and cochinchinese asparagus root tuber.

Few reports about the treatment of psoriasis were reported in the early stages of modern times. In 1860s, Zhang Zhili reported the treatment experience of the 200 psoriasis patients based on zheng differentiation-treatment (Zhang, 1974). In the current report, an efficiency of 96.5% was produced using Zhang's self-established standards for the scoring of the treatment. Decades later, the diagnosis and efficacy standards of TCM disease and syndromes were established by National Administration of Traditional Chinese Medicine (1994), demonstrating the establishing of national standards for the treatment of psoriasis in China. Meanwhile, a systematic review of modern literatures was performed in China Biology Medicine disc, China National Knowledge Infrastructure, Weipu Periodical Database and Wangfang Data Center by searching the following keywords "TCM", "Traditional Chinese Medicinal", "proriasis", "proriasis vulgaris". Twenty-six (26) literatures were listed in Table 3 (Bai et al., 2006; Chen, 1998; Guan, 1998; He and Wu, 2002; He, 2010; Hu, 1985; Hu, 2004; Li and Miao, 2008; Li, 2002; Lian, 2003; Meng, 2009; Qiu et al., 2005; Qu et al., 2001; Rong et al., 2010; Shi, 2001; Shi and Niu, 2002; Wang et al., 2009; Wang and Jia, 2008; Wu et al., 2004; Xiong and Wang, 2008; Yang, 2001; Zhang and Wei, 1996; Zhang and Dong, 2007; Zhang Yuan, 2003; Zhao and Zhang, 2010; Zhao et al., 2010). And 5 standards were noted in this paper, including the therapeutic effects drafted by Administration Department of TCM, Nation Committee, local collaborative organization as well as some hospitals. Among these literatures, the treatment efficiencies were ~90% with the maximum patient number of 500 and the minimum patient number of 24, respectively. Most of the literatures were for the oral administration of TCM, few reports were about external application (Table 4) (Chen, 2005; Liu, 2003; Lu and Miao, 2004; Wang and Liu, 2006; Wang, 2003; Zhang et al., 2000), which was consisted with the pathogenesis as previously mentioned.

During information collection and evaluation, we found many problems in these reports, including a lack of improper study design and scientific study methods. Even though randomization was mentioned in some reports, however, detailed information for the randomization was not illustrated. Nearly all the studies were single center report based on different therapeutic effects and diagnosis standards; thus, quantification standards were lacked. We concluded that multicenter, randomized and double blind trials were needed for the treatment of PV. Thus, multicenter, randomized and double blind trials should be performed based on international diagnosis and treatment standards.

CONCLUSION

In general, the main pathologies for PV generation were wind, cold, moist and worm in prophase based on the TCM theory. External application was advocated for the treatment. In metaphase, the internal causes of blood-deficiency and pathogen dryness were stressed for the pathogenesis of PV, and oral administration combined with the external application was advocated. In modern times, blood aspect syndrome was the main cause, followed by blood-heat, blood stasis and blood deficiency. For the treatment of PV, oral administration of TCM combined with external applications will be more effective.

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