

Case Report

A Case Report of an Elderly Patient with Psoriasis Treated with Jeongri-tang Gagam-bang: Focus on Digestive System Treatment

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Objectives: This study aimed to report the efficacy of Korean medicine with Jeongri-tang Gagam-bang for treating psoriasis.

Methods: A patient with psoriasis was treated with Jeongri-tang Gagam-bang (正理湯加減方). Moreover, acupuncture was performed on CV12 (中脘) and both sides of ST25 (天樞), GV20 (百會), LI4 (合谷), and LR3 (太衝) for 15 minutes. Psoriasis severity was assessed using the Psoriasis Area and Severity Index (PASI). Pruritus and dyspepsia intensities were ranked on a Visual Analog Scale (VAS) of 0–10.

Results: After treatment, the PASI changed from 21.6 to 1.6. Patient's pruritus had almost disappeared and dyspepsia had improved.

Conclusions: This study shows that Jeongri-tang Gagam-bang (正理湯加減方) and acupuncture on CV12 (中脘), ST25 (天樞), GV20 (百會), LI4 (合谷), and LR3 (太衝) might be helpful to treat psoriasis symptoms by improving digestive function.

Key Words : Jeongri-tang, Psoriasis, Herbal medicine

Introduction

Psoriasis is a skin disease characterized by red plaques, papules, silver scales, and scabs that occur locally or across the entire body. Modern Western medicine considers psoriasis an overgrowth of epidermal cells due to an imbalance of anti-inflammatory and pro-inflammatory cytokines, vascular proliferation, immune cell infiltration, and abnormal keratinocyte differentiation and proliferation. Therefore, Western medicine defines psoriasis as an autoimmune skin disease and a

chronic inflammatory condition¹⁾. Psoriasis is an incurable disease with a high relapse rate and a lifelong course of exacerbations and flare-ups. Its cause remains unclear and a standardized treatment that is both effective and safe is lacking.

The treatment of psoriasis in Western medicine can be summarized as topical, systemic, phototherapy and biologics. Dermatologists treat milder cases of psoriasis with topical immunosuppressants and steroids. And more severe cases with a systemic treatment, including

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ultraviolet light therapy, anti-inflammatory and immunosuppressive agents, rather than a single medication. Phototherapy options include anthralin phototherapy and Psoralen Ultraviolet A (PUVA) therapy, but side effects such as nausea, headache, and dizziness have been reported, as well as the risk of skin cancer. Systemic treatments include steroids, retinoids, cyclosporine, and methotrexate. However, the long-term use of these synthetic drugs can feature side effects such as cold sores, dry skin, pruritus, and liver dysfunction. Therefore, they should be used temporarily².

In Korean medicine, psoriasis is called Baekbi (白庖), Eunseolbyeong (銀屑病), Poongseon (風癬), Songpiseon (松皮癬), and Baekseolpoong (白屑風)³. Oriental medicine also recognizes and treats psoriasis as being caused by Blood heat (血熱), Blood stasis (血瘀), Blood dryness (血燥), Yang deficiency (陽虛), Stagnant heat (鬱熱), and Release exterior (發汗) disorders¹. In previous studies published in Korea, patients with psoriasis were treated with Blood deficiency induced wind dryness pattern (血虛風燥) and Wind heat induced blood heat pattern (風熱血熱) prescriptions. In the Blood deficiency induced wind dryness pattern (血虛風燥), researchers have used Danguieumjagagambang (當歸飲子加減方) and Gamiyoonbooeum (加味潤膚飲). Wind heat induced blood heat pattern (風熱血熱) patients were prescribed Bangpoontongsungsan (防風通聖散), Baekhotaggagambang (白虎湯加減方), and Seungmagalgeumtang (升麻葛根湯)⁴. In addition to herbal treatments, Huanglianhaedok pharmacopuncture (黃連解毒藥鍼) and aroma ointments were used to treat psoriasis in Korean Medicine⁵. There have been many clinical reports

on the treatment of psoriasis with TCM, but they have all focused on the skin itself, such as the color of the skin lesions and the degree of induration.

Recent epidemiologic studies of psoriasis have shown an association between psoriasis and metabolic syndrome consisting of diabetes, obesity, and hypertension. The more severe the psoriasis, the greater its association with metabolic syndrome. Improvements in metabolic syndrome are reportedly correlated with significant improvement in psoriasis lesions⁶. In contrast, only one study to date published in Korea focused on metabolic syndrome and lipid metabolism in psoriasis⁷. Therefore, this article reports a case of psoriasis cured by improving digestive system function using Professor Gil-young Yoon's Jeongri-tang Gagam-bang (正理湯加減方). It combines the properties of Pyeongwi-san (平胃散), Leejin-tang (二陳湯), and Hyangso-san (香蘇散) which are digestive medicine. Moreover, it is a variant of Bulhwangumjeongki-san (不換金正氣散), which is used to clean the waste in the digestive system⁸. To this, *Lonicera japonica* Thunb flos (金銀花), *Cryptotympana pustulata* Fabricius periostracum (蟬退), and *Spirodela polyrrhiza* Schleider Herba (浮萍草) were added for anti-inflammation. To date, Jeongri-tang (正理湯) has been shown to improve gastrointestinal motility in animal models⁹, but there are no case reports of its efficacy in skin diseases, especially psoriasis. Therefore we would like to report the skin improvement effects of Jeongri-tang Gagam-bang (正理湯加減方) on an 82-year-old psoriasis patient with a 40-year history of

hypertension, diabetes, and hyperlipidemia.

Methods

1. Subjects

A patient with psoriasis visited ○○ Oriental Clinic in Cheonan, Chungcheongnam-do between March 25, 2023 and June 16, 2023. The patient complained of dyspepsia, dry mouth, and weakness and had been taking medications for hypertension, diabetes, and hyperlipidemia for 40 years.

2. Methods

1). Assessing psoriasis

The Psoriasis Area Severity Index (PASI), designed by Fredriksson and Petterson, was adopted to assess psoriasis. The PASI score is calculated by multiplying the proportion of the body affected by psoriasis (head, 10%; trunk, 30%; upper limbs, 20%; and lower limbs, 40%); psoriasis area (0–6); and the sum of each symptom (scaling, erythema, and thickness) scores including 0 (none), 1 (slight), 2 (moderate), 3 (striking), and 4 (exceptionally striking). The resulting score ranged from a minimum of 0 to a maximum of 72⁵⁾.

PASI score evaluations were performed three times, once per month:

2) Determining treatment efficacy

Treatment success was defined as PASI reduced by 75% or more, and treatment failure as PASI reduced by 50% or less¹⁰⁾.

3) Determining pruritus intensity

Pruritus degree was based on the Visual Analog Scale (VAS) score, with 0 being no pruritus and 10 being the most severe pruritus since onset. Patients were asked to rate their pruritus over a 1-month period on a scale from 0 to 10.

4) Determining chronic dyspepsia intensity

Dyspepsia degree was assessed based on the VAS score, with 0 being no dyspepsia and 10 being the most severe dyspepsia since onset. Patients were asked to rate their dyspepsia symptoms once a month on a scale from 0 to 10.

3. Therapeutic interventions

1) Herbal medicine

The patient complained of dry mouth and chronic indigestion. In the past month, he has lost a little weight because he often felt weak and unable to finish his meals. He said that he passed stool every morning but could not keep it cool, his hands and feet became hot at night, and the itching of his psoriasis became worse. I diagnosed him with Spleen yin deficiency pattern (脾陰虛) and prescribed Jeongri-tang Gagam-bang (正理湯加減方) twice daily for 90 days. The prescribed formula had the following composition⁸⁾ (Table 1). There was no prescription for topical ointments.

2) Acupuncture

Acupuncture treatment was performed at each weekly clinic visit. Needles were made of sterilized stainless steel needles (0.20×40mm, DongBang Co. Seoul, Korea), The depth of acupuncture needles was 1–2mm per point, and acupuncture was performed on CV12 (中脘) and both sides of

ST25 (天樞), GV20 (百會), LI4 (合谷), and LR3 (太衝) for 15 minutes.

3) Requirements for the diet

Restrict consumption of flour and processed foods.

Case Report

1. Patient: Park○○/Male/82
2. Chief complaint: Psoriasis (upper limb, lower limbs, trunk), nighttime pruritus, chronic dyspepsia, dry mouth, difficulty remaining asleep
3. Date of onset: May 2001
4. Present illness: In May 2001, he was diagnosed and treated for psoriasis at ○○ University Hospital. In March 2022, his symptoms worsened again, and he took oral steroids and antihistamines for 1 year as prescribed at ○○ Medical Center. At 40 days before visiting our clinic, his symptoms of weakness and indigestion worsened, and the psoriasis rapidly worsened on his stomach, trunks, and legs.
5. Family history: None
6. Past history: type 2 diabetes, hypertension, hyperlipidemia
7. Drinking and smoking history: None
8. Other conditions
 - 1) Appetite: less than half a bowl of rice
 - 2) Digestion: Frequent indigestion and bloating
 - 3) Feces: Once a day but feel residual sensation

Table 1. Jeongri-tang Gagam-bang prescription (正理湯加減方)

	The name of herbal medicine	Daily Dose amount (g)
金銀花	<i>Lonicera japonica</i> Thunb flos	11.25
枳實	<i>Citrus aurantium</i> L. Fructus Immaturus	7.5
樺皮	<i>Betula platyphylla</i> Suk var. <i>japonica</i> Hara Cortex	7.5
牛蒡子	<i>Arctium lappa</i> Linne Semen	7.5
蒼朮	<i>A. chinensis</i> Koidzaumi Rizhoma	5.625
蘇葉	<i>Perila frutescenes</i> var. <i>acuta</i> Kudo Folium	3.75
香附子	<i>Cyperus rotundus</i> L. Rhizoma	3.75
生薑	<i>Zingiberis officinale</i> Rosc. Rhizoma	3.75
連翹	<i>Forsythia koreana</i> Nakai Fructus	3.75
荊芥	<i>Schizonepeta tenuifolia</i> Briquet Spica	3.75
防風	<i>Saposhnikovia divaricate</i> Schischkin Radix	3.75
蟬退	<i>Cryptotympana pustulata</i> Fabricius periostracum	3.75
浮萍草	<i>Spirodela polyrhiza</i> Schleider Herba	3.75
蘿蔔子	<i>Raphanus sativus</i> Linne Semen	3.75
厚朴	<i>Magnolia officinalis</i> Rehder et Wilson Cortex	2.625
陳皮	<i>Citrus unshiu</i> Markovich peripacrpium	2.625
半夏	<i>Pinellia ternata</i> (Thunb.) Breitenbach Rhizoma	2.625
甘草	<i>Glycyrrhiza uralensis</i> Fisch Radix et Rhizoma	2.625
白茯苓	<i>Poria cocos</i> Wolf Hoelen	2.625
藿香	<i>Agastache rugosa</i> (Fisch. et Meyer) Herba	2.625
木香	<i>Inula helenium</i> L. Radix	2.625

- 4) Urine: No specific condition
- 5) Tongue diagnosis: White thin coated with teeth marked dark red tongue
- 6) Sleep: Wakes up every 2 hours
- 7) Pruritus: Worsens at night

9. Duration of treatment: March 25, 2023, to June 16, 2023

10. Change in symptoms

Erythema color and thickness and scaling of the psoriatic lesions were recorded by PASI scores. The degrees of pruritus and dyspepsia felt by the patient were recorded as VAS scores of 0–10 (Figure 1, 2) (Tables 2, 3).

1) March 25, 2023

(1) Psoriasis condition:

Erythematous plaques of various sizes were evident. In particular, the psoriasis on the legs had a plaque-type widely distributed and thickly covered scale. The Auspitz sign was noted on the legs.

(2) Pruritus: None during the daytime; severe at nighttime, mainly on the arms and legs

(3) Dyspepsia: Able to eat less than half a bowl of rice at a time; felt bloated after eating and had no appetite

2) April 29, 2023

(1) Psoriasis condition:

Only one small erythematous lesion was observed around the umbilicus. On the lower extremities, the erythematous plaque was much thinner, and its borders became blurred. New erythematous lesions were observed on the shin where a thick plaque lesion was present. Much of the erythema on the posterior thighs had faded. On the arms, the color of the

erythema was like that seen in March, but it was thinner and covered only a small portion of the skin. The erythema with silky scaling on the hips had almost disappeared, and only a few red papules remained.

(2) Pruritus: The pruritus remained the same as in March (aggravated at night). However, the patient reported that the duration had shortened and severity had decreased. Itching was intermittent in the abdomen and hips.

(3) Dyspepsia: He felt less bloated and was able to eat half a bowl of rice at a time.

3) June 16, 2023

(1) Psoriasis condition:

A few small erythematous patches persisted, mostly on the right leg. Very little erythema remained on his left leg. The erythema on the lower arm was thin. The erythema on the abdomen remained similar to that seen in April, while the skin lesions on the hips had disappeared.

(2) Pruritus: None

(3) Dyspepsia: His food intake had also increased. He was able to eat about 2/3 of a bowl of rice at a time, and his appetite had returned.

11. Research consent

Prior to publishing this case report, we explained the collection and utilization of medical information to the patient and obtained his consent for the use of photographs and information of his case.



Fig. 1. Changes in psoriasis according to treatment duration

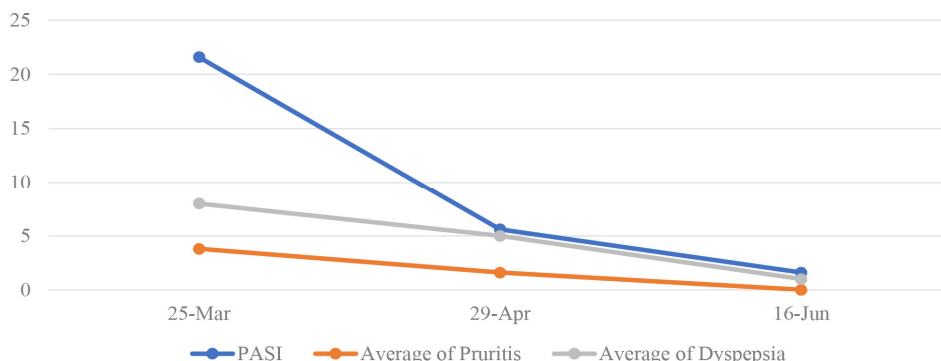


Fig. 2. Changes of PASI, average of pruritis VAS and average of dyspepsia VAS

Discussion

Studies of herbal medicines for the treatment of psoriasis have focused on their anti-inflammatory and suppressive effects on certain immune mediators, just as Western medications. In particular, the relationship between chronic low-grade inflammation and psoriasis continues to

be studied, and herbs with anti-inflammatory properties have been reported. Herbs including *Scutellaria baicalensis* Georgi Radix (黃芩), *Rehmannia glutinosa* (Gaertner) Liboschitz Radix (地黃), *Coptis japonica* Makino Rhizoma (黃蓮), *Paeonia lactiflora* Pallas Radix Rubra (芍藥), and *Taraxacum platycarpum* H. Dahlstedt Herba (蒲公英) reportedly inhibit nuclear factor kappa-light

Table 2. Psoriasis Area and Severity Index (PASI)

Date	Plaque Characteristic	Body Region & Weighting Factor				PASI
		Head (* 0.1)	Arms (* 0.2)	Trunk (*0.3)	Legs (*0.4)	
March 25, 2023	Erythema*	0	2	1	2	21.6
	Thickness*	0	2	1	3	
	Scale*	0	1	2	3	
	Body region [†]	0	2	3	5	
April 29, 2023	Erythema*	0	2	0	2	5.6
	Thickness*	0	1	0	2	
	Scale*	0	1	0	0	
	Body region [†]	0	1	1	3	
June 16, 2023	Erythema*	0	2	0	2	1.6
	Thickness*	0	0	0	1	
	Scale*	0	0	0	0	
	Body region [†]	0	1	0	1	

*: Scores: 0–None, 1–Slight, 2–Moderate, 3–Severe, 4–Very Severe

[†]: Degree of involvement is scored as a % for each affected body region: 0–None, 1–1–9%, 2–10–29%, 3–30–49%, 4–50–69%, 5–70–89%, 6–90–100%

-chain-enhancer of activated B cells (NF- κ B) through various pathways and reduce the expression of various inflammatory mediators, including tumor necrosis factor- α , interleukin (IL), and chemokines. *Persicaria tinctoria* H. Gross Levis (青黛) reportedly has an IL-17 inhibitory effect¹¹. In addition, oxidative stress-related pathways, such as mitogen-activated protein kinase, NF- κ B, and c-Jun *N*-terminal kinase, are directly associated with the pathology of psoriasis. This suggests that antioxidants such as *Scutellaria baicalensis* Georgi Radix (黄芩), *Bupleurum falcatum* Linne Radix (柴胡), and *Phellodendron amurense* Ruprecht Cortex (黄柏) may be used to treat psoriasis¹². As described above, previous publications suggested the use of anti-inflammatory and antioxidant herbs to improve systemic inflammatory responses. However, steroids powerfully suppress inflammatory symptoms. Thus, it is less advantageous for Korean medicine to focus on the same as Western medicine via the study of anti-inflammatory and immune mediator suppressive actions⁷.

In other words, treating psoriasis with Herbal medicine should use a different perspective. Psoriasis is recognized as a systemic disease involving chronic inflammation of multiple organs, not just the skin. Metabolic syndrome and

psoriasis can act as mutual risk factors, so it is recommended that glucose levels and blood pressure be managed in affected patients¹³. The study of lipid metabolism, particularly in psoriasis, has been ongoing since the early 20th century. Patients with psoriasis reportedly have abnormalities in blood lipid levels, skin barrier lipid structure, and receptors that transport lipids in the skin and blood. These findings suggest that lipid metabolism is involved in the pathology of psoriasis¹⁴.

Compared to healthy individuals, psoriasis patients have been reported to have significant increases in blood cholesterol, low-density lipoprotein cholesterol, and triglycerides, and a significant decrease in high-density lipoprotein cholesterol, which transports cholesterol deposited in the periphery to the liver. It has also been reported that plasma antioxidant markers, including glutathione, are reduced and lipolysis disorders with decreased bile juice concentration. Moreover, significant amounts of cholesterol are also detected in scales of psoriatic lesions. It is 12-23 times higher than healthy people who secrete 85mg of cholesterol. There is a correlation between the amount of lipids secreted into the skin and the moderate severity of psoriasis. It has been suggested that the excessive scaling seen in

Table 3. Pruritus and dyspepsia assessment using Visual Analog Scale (VAS) scores

Date	Pruritus VAS*					VAS [†]
	Head	Arms	Trunk	Hip	Legs	Dyspepsia
March 25, 2023	0	7	2	2	8	8
April 29, 2023	0	2	2	1	3	5
June 16, 2023	0	0	0	0	0	1

*: Pruritus VAS: 0= no itching, 10= most itchy since onset.

†: Dyspepsia VAS: 0=no dyspepsia, 10=most dyspepsia since onset.

psoriatic skin may be a form of neutralizing cholesterol wastes¹⁹). Therefore, utilizing an herbal decoction to regulate lipid metabolism and digestive function may benefit patients by improving the condition of psoriatic skin lesions, managing metabolic syndrome, and reducing the side effects of concomitant Western medications⁷).

In addition to lipid metabolism, Leaky Gut Syndrome (LGS) can also be a pathologic factor of psoriasis. LGS is a disorder in which the intestinal mucosa is damaged. It leads to poor absorption of essential nutrients that should be absorbed normally. And absorption of substances that should not enter the body disrupt human immune system. Mucosal cells contain numerous microvilli and are held together by tight junctions. When the tight junctions between the microvilli and the intestinal mucosa cells are disrupted, LGS occurs. As mentioned earlier, patients with psoriasis often have lipid metabolism dysfunction and bile acid deficiency, resulting in high concentrations of endotoxins in the blood, and peptidoglycans from bacteria absorbed from the gut have direct toxic effects on the liver and skin¹⁵), which can lead to systemic inflammatory skin lesions such as psoriasis. Therefore, if endotoxins and wastes from the small intestine, large intestine, liver, and gallbladder are detoxified, both the digestive system and skin lesions may improve.

The patient in this case showed 92.6% improvement in PASI score after 2 months of treatment, demonstrating the successful effect of Jeongri-tang Gagam-bang (正理湯加減方) and acupuncture treatment. He had been taking medication for hyperlipidemia for 40 years. The

long duration of psoriasis might be due to dysfunctional lipid metabolism. In Korean medicine, the lipids in the blood that are not being metabolized are classified as dampness (濕). Jeongri-tang Gagam-bang (正理湯加減方), a combination of Pyeongwi-san (平胃散), Hyangso-san (香蘇散) and Leejin-tang (二陳湯), consists of herbs that support digestive function and remove wastes, dampness (濕) from the digestive systems. *Citrus aurantium* L. Fructus Immaturus (枳實) improves skin barrier function directly through the peroxisome proliferator-activated receptor- β/γ ⁷), and Hyangso-san (香蘇散), like *Citrus aurantium* L. Fructus Immaturus (枳實), regulates immune activity by increasing peroxisome proliferator-activated receptor- γ protein levels¹⁶). In addition, Pyeongwi-san (平胃散) reduced the amount of total cholesterol and triglycerides in animals with high-fat diet-induced obesity¹⁷). Changbakleejin-tang (蒼朴二陳湯), which is included in Jeongri-tang Gagam-bang (正理湯加減方), had a significant effect on reducing total cholesterol, triglycerides, and β -lipoprotein content¹⁸).

Furthermore, the Sagwan(四關) point, composed of LI4 (合谷) and LR3 (太衝), is a very important treatment for almost all gastrointestinal disorders such as digestive disorders and abdominal bloating. Animal studies have shown that the Sagwan (四關) point has no effect on gastrointestinal motility in healthy conditions but normalizes the gastrointestinal system in pathological conditions in which gastrointestinal motility is overexcited or inhibited¹⁹). Acupuncture on the CV12 (中脘) and ST25 (天樞) points modulates inflammation and promotes fat

metabolism in rats with high-fat diet-induced obesity²⁰. The weekly acupuncture treatments, along with the daily Jeongri-tang Gagam-bang (正理湯加減方), may have helped improve the digestive function of our patients with psoriasis.

Despite the fact that Jeongri-tang (正理湯) is composed of commonly used herbal medicines in Korea insurance system, there are no case reports of Jeongri-tang being used for skin diseases. Therefore, this study is significant in that it clinically confirmed the ability of Jeongri-tang Gagam-bang (正理湯加減方) to treat skin diseases by improve digestive system function. In addition, since the patient's symptoms were significantly improved after Jeongri-tang Gagam-bang (正理湯加減方) administration, we believe that it can be actively utilized in the future treatment of psoriasis. However, since this was a single case report, it is difficult to generalize the diagnostic method used herein. Thus, further studies are needed to expand the clinical usefulness of Jeongri-tang Gagam-bang (正理湯加減方) administration.

Conclusions

An 82-year-old man with psoriasis was successfully treated with Jeongri-tang Gagam-bang (正理湯加減方) twice daily for 90 days and once-weekly acupuncture treatment on the following acupoints for 15 min: CV12 (中脘), ST25 (天樞), GV20 (百會), LI4 (合谷), and LR3 (太衝). The following results were observed:

The patient had been taking medication for hyperlipidemia, type 2 diabetes, and hypertension for 40 years and had been treated for psoriasis for

20 years. One month before the start of treatment, his psoriasis worsened and the symptoms of dyspepsia and anorexia occurred, so he started Oriental medicine treatment.

Before treatment, erythematous plaques with overlying silvery scales were scattered across the arms, legs, abdomen, and hips (PASI = 21.6). Severe pruritus occurred on the limbs at night.

The patient was treated with Jeongri-tang Gagam-bang (正理湯加減方) twice daily for 90 days. A 1-month course of Jeongri-tang Gagam-bang (正理湯加減方) led to 74.1% improvement of the cutaneous lesions (to a PASI of 5.6) compared to his first visit. The pruritus and indigestion also improved.

A 2-month course of Jeongri-tang Gagam-bang (正理湯加減方) led to almost complete skin clearance and a 92.6% improvement in PASI (to 1.6) compared to his first visit. The pruritus, indigestion, and appetite also improved.

No adverse effects were reported.

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References

1. Lee S, Jung S, Lee S. (2021). Comparison of Research Characteristics in Western, Chinese Traditional Medicine and Korean Medicine

- on Psoriasis. *Journal of Korean Medicine*, 42(2), 72–81.
2. Jeong JY & Han KW. (2009). *Common Skin Diseases in Korea*. Seoul/Korea: MD world Medical book Co. 168–86.
 3. Guo X, Zhou D, Sun L, Wang P, Qu J, Zhang C, et al. (2020). Traditional Chinese medicine for psoriasis vulgaris: A Protocol of a prospective, multicenter cohort study. *Medicine*, 99(41), 1-7
 4. Hong SH. (2013). Reviewing Research on Korean medical treatment of Psoriasis. *J Korean Med Ophthalmol Otolaryngol Dermatol*, 26(4), 26–42.
 5. Lee HC, Choi JH, Kim JH, Jeong MY, Park SY. (2018). A Case Report of Psoriasis treated with Traditional Korean Medicine Including SaengRyoSaMultang-Gamibang and Hwangryunhaedok-tang Herbal-Acupuncture. *J Korean Med Ophthalmol Otolaryngol Dermatol*, 31(1), 106-16.
 6. Rui W, Xiangyu D, Fang X, Long G, Yi Y, Wenjuan W, et al. (2017). Metabolic syndrome affects narrow-band UVB phototherapy response in patients with psoriasis. *Medicine*, 96(50):1-5.
 7. Han CY, Kim J, Gwang, Seo Y, Kim KS, Kim YB. (2021). Investigation of Effective Korean Herbal Medicine for Psoriasis-Focusing on Lipid Metabolism. *J Korean Med Ophthalmol Otolaryngol Dermatol*, 34(3), 70–9.
 8. Kim KH & An KS. (1991). Reflections on Jeongri-tang. *Journal of Oriental Physiology and Pathology*, 6(1), 207–12.
 9. Chung WY, Ryu BH, Park DW, Rhu KW. (1998). The efficiency of Jungritang on gastrointestinal organs of rats. *Journal of KyungHee Oriental Medicine College*, 21(1), 213–23.
 10. BH Kim, KI Kim, SH Kang, JG Park, DW Kang, HJ Nam, et al. (2018). Explanation and Elaboration of the Clinical Trial Guidelines for Psoriasis Using Herbal Medicine. *J Korean Med Ophthalmol Otolaryngol Dermatol*, 31(2), 40–59.
 11. Jeon SW, Jeung CW, Jo HG. (2018). Literature Review on Herbal Medicine Treatment of Psoriasis Based on Chronic Low-grade Inflammation Theory. *J Korean Med Ophthalmol Otolaryngol Dermatol*, 31(4), 22–30.
 12. Hirayama A, Oowada S, Ito H, Matsui H, Ueda A, Aoyagi K. (2018). Clinical significance of redox effects of Kampo formulae, a traditional Japanese herbal medicine: comprehensive estimation of multiple antioxidative activities. *J Clin Biochem Nutr*, 62(1), 39–48.
 13. Takeshita J, Grewal S, Langan SM, Mehta NN, Ogdie A, Van Voorhees AS, et al. (2017). Psoriasis and comorbid diseases: Epidemiology. *Journal of the American Academy of Dermatology*, 76(1), 377–90.
 14. Sorokin A V, Domenichiello AF, Dey AK, Yuan ZX, Goyal A, Rose SM, et al. (2018). Bioactive Lipid Mediator Profiles in Human Psoriasis Skin and Blood. *J Invest Dermatol*, 138(7), 1518–28.
 15. Ely PH. (2018). Is psoriasis a bowel disease? Successful treatment with bile acids and bioflavonoids suggests it is. *Clin Dermatol*, 36(3), 376–89.

16. Oh JE, Park EJ, Lee HJ. (2007). Effects of Hyangsosangamibang on the PPAR γ in the bronchial asthma mouse model. *J Korean Oriental Pediatrics*, 21(1), 44-51.
17. Seo MG, Park YJ, Kang YM, Kim HY, Han I, An HJ. (2022). Comparative Study on Anti-obesity Effects of Pyungwi-san, *Magnolia officinalis*, and *Atractylodes chinensis* in High-fat Diet-induced Obese Mouse Model. *Nubebe Mibyeong Research Institute*, 3(1), 1-12.
18. Kim GR, Park WH, Kim JK, Choi DY. (1997). A study on the effects of Changbakeezintang on hyperlipidemia induced by high lipid solid and cholesterol colloid solution in Rats. *Korean Journal of Oriental Physiology & Pathology*, 11(2), 72-80.
19. Shin JW, Son JY, Yim YK, Choi SM, Koo ST, Son CG. (2006). Acupuncture on Sigan Points(LI4 and LR3) Restores Loperamide Scopolamine-induced Intestinal Immotility in Mice. *Journal of Korean Oriental Medicine*, 27(1), 146-54.
20. Kim KS, Kim MH, Sul JU, Kim EJ, Son HS, Na CS. (2023). The Effect of CV12, ST25, ST36 Acupuncture in General Diet and High Fat Diet Rat. *Korean Journal of Acupuncture*, 40(3), 109-27.

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