



Successful Treatment of Psoriasis Flare-Up Following COVID-19 Vaccination with Traditional Chinese Medicine: A Case Report

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Abstract

This report documents the case of a 28-year-old male who developed widespread psoriasis following getting the second dose of the Pfizer-BioNTech COVID-19 vaccine in 2022. Despite half a year of treatment with Western medicine, there was no improvement in symptoms. In 2023, the patient sought Traditional Chinese Medicine (TCM) treatment. The initial examination by the Chinese medicine practitioner revealed that the psoriasis affected 17% of the Body Surface Area with a PASI (Psoriasis Area and Severity Index) score of 16.4. The TCM diagnosis identified the condition as predominated by dampness with spleen deficiency. The treatment plan involved the internal administration of Chinese herbal formulas, including Chai Hu Gui Zhi Gan Jiang Tang and Wu Ling San, along with the topical application of Indigo Naturalis gel. After six months of treatment, his psoriasis condition significantly improved, with the PASI score decreasing to 2.9. By January 2024, the condition had fully recovered. Globally, approximately 125 million adults are affected by psoriasis, and there has been an increase in cases of psoriasis worsening or emerging post-vaccination. This case demonstrates the effectiveness of TCM and herbal treatments in managing vaccine-induced psoriasis and COVID-19-related psoriasis. It also opens new avenues for research into applying alternative treatment in modern medical practices.

Keywords: Psoriasis; COVID-19; Pfizer-Biontech COVID-19 Vaccine; Traditional Chinese Medicine (TCM); Alternative Treatment; Indigo Naturalis

Abbreviations: TCM: Traditional Chinese Medicine; PASI: Psoriasis Area and Severity Index; BSA: Body Surface Area

Introduction

Approximately 125 million people worldwide have psoriasis. In addition to skin issues, psoriasis can also lead to complications such as arthritis and cardiovascular diseases, and it also increases the risk of mental health problems [1]. After the outbreak of COVID-19 in 2019, there have been many reported cases of psoriasis flare-ups following infection, as well as reports of skin psoriasis occurring after receiving the COVID-19 vaccine [2]. Although most reports indicate that these vaccine-related psoriasis cases can be successfully treated, many patients still respond poorly to the effects of Western medicine. Therefore, it is necessary to reconsider the various existing treatment strategies, including those in Western medicine and alternative medical systems [3].

TCM provides a theoretical basis for treating psoriasis, offering significant benefits and low toxicity [4]. Its safety can promote

the clinical application of psoriasis treatments [5]. In Taiwan, Korea, and China, clinical doctors prescribe medicine based on the patient's physical condition and diagnosis according to their specific constitution [6,7]. According to TCM theory, the cause of psoriasis is attributed to long-standing pathogenic wind-heat, which may arise from external factors such as wind, dampness, and heat or from internal factors like emotional trauma and stagnation of qi (vital energy) [8]. Better results can be achieved by adjusting the composition of traditional Chinese herbs according to the patient's clinical constitution. This article introduces a case where a patient developed psoriasis after receiving the Covid-19 vaccine. There was no significant improvement after treatment with Western medicine steroids, but significant results were obtained after switching to TCM treatment. General Assessment (GA) and Psoriasis Area Severity Index (PASI) are important indicators for evaluating the activity of skin diseases. They are commonly used in medical practice and clinical trials and are recommended by various treatment guidelines [9]. This case was treated solely with traditional Chinese herbal medicine, without reliance on Western medicine, and successfully cured the psoriasis that appeared after vaccination.

Presentation

A 28-year-old male with a medical history of fatty liver developed widespread psoriasis on his skin after receiving the second dose of the Pfizer-BioNTech COVID-19 vaccine in 2022. After six months of unsuccessful treatment with Western medicine, he sought treatment from a TCM practitioner in Taiwan on June 30, 2023. During the initial consultation, erythema with scaling and itching was observed on the body, including the scalp, forehead, hands, feet, abdomen, and back. Approximately

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17% of the BSA was affected, with a PASI score of about 16.4. The patient's abdomen was soft upon examination, and the pulse felt deep and slippery on both wrists. The tongue was pale red with a slippery coating. The patient did not smoke or drink alcohol and experienced frequent bloating, a feeling of heaviness in the body and head, soft stools, and was prone to tension, anxiety, diarrhea, abdominal pain, and insomnia (Figure 1 A-F).



Figure 1 June 30, 2023, first TCM consultation. During the consultation, it was observed that: A) the abdomen and B) the back had widespread psoriasis with thickened, red skin and clear boundaries. C) The outer side of the leg and D) the front side of the leg had widespread, scattered erythematous rashes with thickened, keratinized skin. E) The outer side of the right arm had obvious multiple psoriatic erythematous rashes. F) Scalp psoriasis extended to the forehead. The BSA affected was approximately 17%, and the PASI score was about 16.4.

The initial prescription plan on June 30, 2023, was as follows: Oral intake of scientific Chinese herbal powder, exclusively using Chinese medicine produced by CHUANG SONG ZONG PHARMACEUTICAL CO., LTD. The daily dosage was Chai Hu Gui Zhi Gan Jiang Tang (Bupleurum Cinnamon & Ginger Combination) 5g, Gui Zhi Tang (Cinnamon Twig Decoction) 5g, Wu Ling San (Hoelen Five Herb Formula) 10g, Dandelion (*Taraxacum officinale*) 5g, Ji Xue Teng (*Spatholobus suberectus*) 3g, and Indigo Leaf (*Isatis indigotica*) 2g. These were to be taken twice daily, morning and evening, with a one-week supply of medication provided. Indigo Naturalis gel was also to be applied twice daily, using approximately 2 grams per 100 square centimetres for topical use on psoriasis lesions.

On the return visit on July 6, 2023, the patient's symptoms were similar to those at the initial consultation, but the patient felt slightly improved. Therefore, the original prescription was maintained, and treatment continued. On the follow-up visit on November 10, 2023, it was observed that apart from the psoriasis on the abdomen back and a small area of keratinized thickening near the forehead hairline, most of the erythema and swelling in the psoriatic lesions on the hands and feet had disappeared (Figure 2 A-F). Only minor pigment deposition remained, with slightly raised areas still visible. The BSA affected had reduced to 16.5%, and the PASI score had decreased to 2.9. The patient continued using the prescribed internal and external

Chinese herbal medicine until the skin psoriasis completely disappeared, and the PASI score reduced to 0, with only minor pigment deposition remaining. The feelings of heaviness in the body and head, along with gastrointestinal symptoms such as tension, diarrhea, and bloating, were completely resolved, and sleep improved. The patient was followed up until January 19, 2024, when the psoriasis was fully healed.

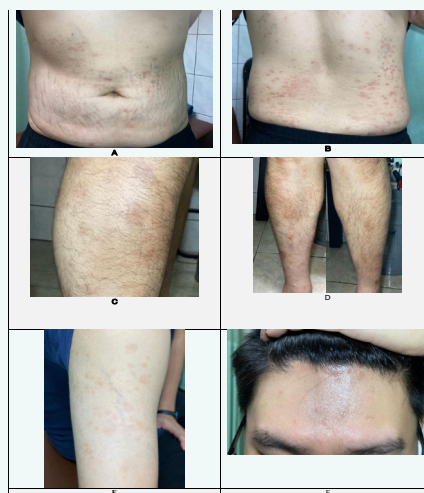


Figure 2 Follow-up visit on November 10, 2023. A) The abdomen and B) the back, where widespread psoriasis was originally observed, showed significant reduction in erythema and keratin thickening. C) The outer side of the leg and D) the front side of the leg, where widespread, scattered erythematous rashes with thickened, keratinized skin were seen, showed a substantial decrease in these symptoms. E) The outer side of the right arm with obvious multiple psoriatic erythematous rashes, showed much reduced erythema and no longer had keratin thickening. F) The forehead showed significant reduction in the erythematous and swollen areas of psoriasis. The BSA affected was approximately 16.5%, and the PASI score was about 2.9.

Discussion

Psoriasis is a skin disease caused by genetic and immune system abnormalities, influenced by environmental factors [10]. Systemic glucocorticoids are now prescribed as a treatment option despite past concerns [11]. COVID-19 viral infection, certain drugs, and emotional stress can trigger psoriasis outbreaks [2,12]. A recent case study has demonstrated the efficacy of traditional Chinese medicine in treating COVID-19-related psoriasis [13]. However, reports have suggested that administering COVID-19 vaccines may result in the onset or exacerbation of skin conditions, including psoriasis. Indeed, several cases of psoriasis outbreaks have been reported following COVID-19 vaccination [14]. For example, severe psoriasis has been induced after receiving the Pfizer-BioNTech COVID-19 vaccine [14,15].

Skin problems like psoriasis have been documented early in Chinese medical literature and hold an important place in Chinese medicine [8]. According to Traditional Chinese Medicine's classification of disease constitutions, psoriasis can be divided into types such as heat toxin, damp evil, wind evil, excessive liver fire, liver depression, spleen deficiency, blood deficiency,



yin deficiency, etc. (all of which are traditional Chinese medical terms for constitution diagnosis) [16]. In this case, the patient's pulse diagnosis showed deep and slippery pulses, the tongue was pale red with a slippery coating, and symptoms included bloating, a feeling of heaviness in the body, and soft stools, indicating a predominance of damp evil and spleen deficiency. Therefore, Wu Ling San was chosen to strengthen the spleen and dispel dampness.

Additionally, the patient had symptoms of insomnia, nervousness, anxiety, diarrhea, and abdominal pain, fitting the liver depression and spleen deficiency type. Studies have shown that Chai Hu Gui Zhi Gan Jiang Tang and Gui Zhi Tang are significantly effective for irritable bowel syndrome [17,18], making these prescriptions suitable for such patients. Psoriasis, a chronic immune-mediated disease, often coexists with other immune-related clinical conditions, including those that affect the gastrointestinal tract [19]. Therefore, using traditional Chinese herbs to regulate gastrointestinal function is crucial in the treatment.

In this case, the TCM treatment for psoriasis focused on symptoms and adjusting the constitution and internal balance [20]. Therefore, Wu Ling San and Chai Hu Gui Zhi Gan Jiang Tang were chosen to enhance gastrointestinal and immune functions [17,18]. In addition, Indigo Leaf (*Isatis indigotica*) and Dandelion (*Taraxacum officinale*), known for their heat-reducing and detoxifying effects, were used to treat psoriasis [18]. Ji Xue Teng (*Spatholobus suberectus*) is a commonly used traditional Chinese herb for treating psoriasis [5].

In terms of local treatment, Indigo Naturalis has been widely used in the treatment of psoriasis [21,22]. It effectively treats psoriasis through various mechanisms, including regulating the proliferation and differentiation of keratinocytes, modulating the immune system's inflammatory response, and improving microvascular dilation and proliferation in skin lesions [23]. The topical application of Indigo Naturalis ointment is a novel, safe, and effective treatment approach [24,25]. In this case, a gel containing 5% Indigo Naturalis powder and 95% matrix (consisting of 5% Carbomer and 95% aloe vera gel) was used, which was provided by the herbal pharmacy in our clinic.

TCM has demonstrated its unique advantages in treating psoriasis, including meticulous symptom classification, flexible and versatile treatment concepts, and the proven efficacy and safety of its treatment methods and prescriptions in long-term clinical practice [26]. TCM focuses on relieving symptoms and emphasizes achieving lasting and stable therapeutic effects by regulating visceral function and improving overall constitution [20]. This treatment approach is based on a core principle: skin health directly reflects the balance of internal organs and energy flow within the body. Therefore, it emphasizes comprehensive regulation to achieve treatment goals.

Conclusion

This case study demonstrates the psoriasis outbreak after receiving COVID-related vaccines and the significant improvement achieved through TCM herbal treatment after Western medicine

proved ineffective. It highlights the potential of natural therapies like Chinese herbal medicine in treating skin conditions. TCM targets the skin symptoms and promotes psoriasis remission by adjusting the constitution and restoring internal balance. When conventional treatments fail, TCM offers a safe and affordable alternative for skin diseases.

Acknowledgment

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Ethical Considerations

The authors of this paper confirm no direct financial conflicts. They have not received financial support from pharmaceutical companies or health organizations related to this study; they have no affiliations or involvement with any institutions with financial interests; no personal interests could affect the research content; the research method does not involve patents or proprietary knowledge. Furthermore, this case study is original and has not been published elsewhere, and the data supporting the conclusions will be openly transparent. The authors recognize the importance of disclosing potential conflicts of interest and ensure that the provided information is accurate and based on the best knowledge.

References

1. Armstrong AW, Read C. Pathophysiology, Clinical Presentation, and Treatment of Psoriasis: A Review. *JAMA*. 2020; 323(19): 1945-1960. doi: 10.1001/jama.2020.4006. PMID: 32427307.
2. Wu PC, Huang IH, Wang CW, Tsai CC, Chung WH, Chen CB. New Onset and Exacerbations of Psoriasis Following COVID-19 Vaccines: A Systematic Review. *Am J Clin Dermatol*. 2022; 23(6): 775-799. doi: 10.1007/s40257-022-00721-z. Epub 2022 Sep 1. PMID: 36048409; PMCID: PMC9434078.
3. Ramanunni AK, Wadhwa S, Singh SK, Sharma DS, Khursheed R, Awasthi A. Treatment Strategies Against Psoriasis: Principle, Perspectives and Practices. *Curr Drug Deliv*. 2020; 17(1): 52-73. doi: 10.2174/1567201816666191120120551. PMID: 31752655.
4. Yang D, Guo Y, Wu J, Qin J, Wu J, Lu Y, et al. Chinese herbal medicine Jia Wei Jing Xie Yin (JWJXY) ameliorates psoriasis via suppressing the Th17 cell response. *Ann Transl Med*. 2022; 10(6): 332. doi: 10.21037/atm-22-967. PMID: 35434023; PMCID: PMC9011239.
5. Luo Y, Chen J, Kuai L, Zhang Y, Ding X, Luo Y, et al. Chinese Herbal Medicine for Psoriasis: Evidence From 11 High-Quality Randomized Controlled Trials. *Front Pharmacol*. 2021; 11: 599433. doi: 10.3389/fphar.2020.599433. Erratum in: *Front Pharmacol*. 2021 Mar 31;12:672760. PMID: 33551804; PMCID: PMC7862748.
6. Dou Z, Xia Y, Zhang J, Li Y, Zhang Y, Zhao L, et al. Syndrome Differentiation and Treatment Regularity in Traditional Chinese Medicine for Type 2 Diabetes: A Text Mining Analysis. *Front Endocrinol (Lausanne)*. 2021; 12: 728032. doi: 10.3389/fendo.2021.728032. PMID: 35002950; PMCID: PMC8733618.
7. Seo Young Lee, Yu Min Seo, Eun Su Oh, Dong Lim Ha, Dae Yong Kim, In Soo Jang, et al. A Case Report with Long-term Korean Medical Treatment of Systemic Psoriasis Patient. *Herbal Formula Science*, 2021; 29(4): 311-319.



8. Chun-Ting Liu, Cheng-Chieh Chang, Yao-Hsu Yang, Bei-Yu Wu, Pau-Chung Chen, Shang-Hung Lin, et al. Investigation of Chinese herbal products prescribed to patients with psoriasis of outpatient service from the National Health Insurance Research Database in Taiwan. *Chinese medicine*, 2020; 31(2): 70-85.
9. Carr E, Mahil SK, Brailean A, Dasandi T, Pink AE, Barker JN, et al. Association of Patient Mental Health Status With the Level of Agreement Between Patient and Physician Ratings of Psoriasis Severity. *JAMA Dermatol*. 2021; 157(4): 413-420. doi: 10.1001/jamadermatol.2020.5844. PMID: 33656512; PMCID: PMC7931137.
10. Roszkiewicz M, Dopytalska K, Szymańska E, Jakimiuk A, Walecka I. Environmental risk factors and epigenetic alternations in psoriasis. *Ann Agric Environ Med*. 2020; 27(3): 335-342. doi: 10.26444/aaem/112107. Epub 2019 Nov 12. PMID: 32955211.
11. Vincken NLA, Balak DMW, Knulst AC, Welsing PMJ, van Laar JM. Systemic glucocorticoid use and the occurrence of flares in psoriatic arthritis and psoriasis: a systematic review. *Rheumatology (Oxford)*. 2022; 61(11): 4232-4244. doi: 10.1093/rheumatology/keac129. PMID: 35285486; PMCID: PMC9629346.
12. Kamiya K, Kishimoto M, Sugai J, Komine M, Ohtsuki M. Risk Factors for the Development of Psoriasis. *Int J Mol Sci*. 2019; 20(18): 4347. doi: 10.3390/ijms20184347. PMID: 31491865; PMCID: PMC6769762.
13. Po Hsuan Chiu, Ta-Chen Chen, Hui-Yu Chung, Peng-Yuan Li, Fu-Shih Chen. Traditional Chinese Medicine Herbal Treatment of COVID-19-Related Psoriasis: An Observational Success in Alternative Therapy. *Wor Jour of Medic and Heal Care*. 2024; 2(1): 01-05.
14. Krajewski PK, Matusiak Ł, Szepietowski JC. Psoriasis flare-up associated with second dose of Pfizer-BioNTech BNT16B2b2 COVID-19 mRNA vaccine. *J Eur Acad Dermatol Venereol*. 2021; 35(10): e632-e634. doi: 10.1111/jdv.17449. Epub 2021 Jun 24. PMID: 34131967; PMCID: PMC8447171.
15. Frioui R, Chamli A, Zaouak A, Hlel I, Khanchel F, Fenniche S, et al. A case of new-onset acute generalized pustular psoriasis following Pfizer-BioNTech COVID-19 vaccine. *Dermatol Ther*. 2022; 35(6): e15444. doi: 10.1111/dth.15444. Epub 2022 Apr 6. PMID: 35285114; PMCID: PMC9111558.
16. Dongmei Zhou, Weiwen Chen, Xun Li, Bingxu Deng, Wenjie Xu, Jianhua Qu, et al. Evidence-based practice guideline of Chinese herbal medicine for psoriasis vulgaris (Bai Bi). *European Journal of Integrative Medicine*, 2014; 6(2): 135-146.
17. Li M, Zhu J, Liu X, Dong Z, Tang J, Zhang C, et al. Chaihu-Guizhi-Ganjiang Decoction is more efficacious in treating irritable bowel syndrome than Dicetel according to metabolomics analysis. *Chin Med*. 2022; 17(1): 139. doi: 10.1186/s13020-022-00695-4. PMID: 36517857; PMCID: PMC9749322.
18. Yu Y, L Wang. Study on the Rule of Traditional Chinese Medicine in Treating Psoriasis with Blood Heat Syndrome Based on Data Mining. *MEDS Chinese Medicine*. 2023; 5(2): 42-49.
19. Pietrzak D, Pietrzak A, Krasowska D, Borzęcki A, Franciszkiwicz-Pietrzak K, Polkowska-Pruszyńska B, et al. Digestive system in psoriasis: an update. *Arch Dermatol Res*. 2017; 309(9): 679-693. doi: 10.1007/s00403-017-1775-7. Epub 2017 Sep 13. Erratum in: *Arch Dermatol Res*. 2017 Nov;309(9):695-696. PMID: 28905102; PMCID: PMC5648743.
20. Yingshuai LI, Yan LI. Progress in the study of -deficiency constitution in terms of Traditional Chinese Medicine: a narrative review. *J Tradit Chin Med*. 2023; 43(2): 409-416. doi: 10.19852/j.cnki.jtcm.20221206.001. PMID: 36994531; PMCID: PMC10012185.
21. Lin YK, See LC, Huang YH, Chang YC, Tsou TC, Lin TY, et al. Efficacy and safety of Indigo naturalis extract in oil (Lindioil) in treating nail psoriasis: a randomized, observer-blind, vehicle-controlled trial. *Phytomedicine*. 2014; 21(7): 1015-20. doi: 10.1016/j.phymed.2014.02.013. Epub 2014 Mar 26. PMID: 24680615.
22. Wang P, Gao J, Guo S, Liu H, Cao C, Hong S, et al. Benefits of topical indigo naturalis nanofibrous patch on psoriatic skin: A transdermal strategy for botanicals. *Mater Today Bio*. 2023; 22: 100756. doi: 10.1016/j.mtbio.2023.100756. PMID: 37593218; PMCID: PMC10430593.
23. Zhang Q, Xie J, Li G, Wang F, Lin J, Yang M, et al. Psoriasis treatment using Indigo Naturalis: Progress and strategy. *J Ethnopharmacol*. 2022; 297: 115522. doi: 10.1016/j.jep.2022.115522. Epub 2022 Jul 22. PMID: 35872288.
24. Lin YK, Chang CJ, Chang YC, Wong WR, Chang SC, Pang JH. Clinical assessment of patients with recalcitrant psoriasis in a randomized, observer-blind, vehicle-controlled trial using indigo naturalis. *Arch Dermatol*. 2008; 144(11): 1457-1464. doi: 10.1001/archderm.144.11.1457. PMID: 19015420.
25. Lin YK, Wong WR, Chang YC, Chang CJ, Tsay PK, Chang SC, et al. The efficacy and safety of topically applied indigo naturalis ointment in patients with plaque-type psoriasis. *Dermatology*. 2007; 214(2): 155-161. doi: 10.1159/000098576. PMID: 17341866.
26. Su Y, Qin W, Wu L, Yang B, Wang Q, Kuang H, et al. A review of Chinese medicine for the treatment of psoriasis: principles, methods and analysis. *Chin Med*. 2021; 16(1): 138. doi: 10.1186/s13020-021-00550-y. PMID: 34930402; PMCID: PMC8686297.