

CASE REPORT

Open Access



# Pityriasis Rosea-Like Eruption following anti-fatigue traditional herbs: *Aconitum carmichaelii* Debx and *Panax Ginseng* suspected

Xueyan Zeng<sup>1,2†</sup>, Xin Zhou<sup>1,2†</sup>, Aiping Zhang<sup>1,2†</sup>, Yanqin Zhu<sup>1,2†</sup>, Bin Lu<sup>1,2†</sup>, Feiqin Zhu<sup>4</sup>, Mengqi Wu<sup>1,2</sup> and Riyang Lin<sup>1,2,3\*</sup>

## Abstract

Traditional herbs have a history of clinical use in anti-fatigue. However, several adverse effects of herbs have been identified. Pityriasis rosea-like eruption (PR-LE) is a rare cutaneous complication of herbs. To the best of our knowledge, there have been few reports of PR-LE following herbs. Here, we described a case of PR-LE that developed 6 days after taking anti-fatigue herbs. After the 17 days of stopping *Aconitum carmichaelii* Debx and *Panax Ginseng*, it notably faded. So, when anti-fatigue herbs being authorized for fatigue use, monitoring for potential adverse effects is necessary.

**Keywords** Adverse effect, Traditional Chinese medicine, Pityriasis Rosea-like eruption, Anti-fatigue, Case report

## Introduction

Pityriasis rosea-like eruption (PR-LE) is a cutaneous complication associated with a number of medications and vaccinations. PR-LE is characterized by mildly inflamed, oval, papulosquamous lesions in the proximal regions of the trunk and extremities. Fatigue is a common psychophysiology disease, which is complex and involves multiple factors [1–3]. Traditional herbs have a long history of clinical use in anti-fatigue and are believed to have a well-defined efficacy and excellent safety [4]. However, it cannot be denied that traditional herbs can sometimes cause some adverse reactions, and the adverse effects of anti-fatigue herbs have not been fully characterized yet. Here, we report a case of PR-LE in a patient following anti-fatigue herbs.

<sup>†</sup>Xueyan Zeng, Xin Zhou, Aiping Zhang, Yanqin Zhu and Bin Lu contributed equally to this work and should be considered co-first authors.

\*Correspondence:

Riyang Lin

Lin\_ri\_yang@126.com

<sup>1</sup>Department of Traditional Chinese Medicine, Hangzhou Hospital of Traditional Chinese Medicine, Hangzhou City, Zhejiang Province 310007, China

<sup>2</sup>Zhejiang Chinese Medical University, Hangzhou City, Zhejiang Province 310053, China

<sup>3</sup>Key Laboratory of Kidney Disease Prevention and Control Technology, Hangzhou City, Zhejiang Province 310007, China

<sup>4</sup>Zhuji Fourth People's Hospital, Zhuji city, Zhejiang Province, China



## Case description

A 26-year-old female patient with fatigue attended the Hangzhou Hospital of Traditional Chinese Medicine on 18 September 2022. The patient was treated with Traditional herbs: *Aconitum carmichaelii* Debx(root), *Panax Ginseng*(root), *Cassia bark tree* Twig, *Chinese Goldthread Rhizome*(root), *White Peony Root*, *Liquorice Root*, *Fresh Ginger*(root). These herbs were boiled with water into 400 ml decoctions by the patient herself and then taken orally twice a day. The fatigue was significantly reduced within 1 week. However, this patient presented with an extremely itchy exanthem and oval erythematous lesion appeared on the neck and face since 24 September 2022 (Fig. 1-a). Rashes on the neck and face developed further and involved the abdomen (Fig. 1-b, e), then the patient came to a follow-up visit on 27th September 2022. There was no accompanying systemic symptom. The patient denied any history of allergies, recent infections, drug exposure or changes in lifestyle or diet, as well as similar skin rashes in personal or family history. So, Pityriasis rosea-like eruption was suspected. But the patient refused to take dermatological examination or any

antihistamine or corticosteroid neither orally nor topically. *Aconitum carmichaelii* Debx and *Panax Ginseng* were discontinued, but the other herbs were retained to continue the treatment. Raised rash on the neck slowly flattens out after 6 days (Fig. 1-c). Eventually, 17days after stopping the use of *Panax Ginseng* and *Aconitum carmichaelii* Debx, the patient's rash subsided significantly (Fig. 1-d, f). Moreover, the patient reported that the skin was in better condition than before the rash appeared.

## Discussion

Pityriasis rosea is an acute, self-limiting skin disease that resolves spontaneously. The exact cause of pityriasis rosea is elusive, and a number of infectious and non-infectious causes have now been proposed, including viral pathogens, vaccines and drugs. According to relevant reports, Drug-induced PR-LE accounts for 2% of all cutaneous adverse drug reactions [5]. Common causes of drug-induced PR-LE include angiotensin-converting enzyme inhibitors, non-steroidal anti-inflammatory drugs, and gold. It often presents with diffuse and confluent severely pruritic dusky-red erythematous lesions in the absence of



**Fig. 1** The photos and timeline of the Pityriasis Rosea-Like Eruption case

herald patch [6]. Involvement of the oral mucosa has also been reported in as many as 50% of all cases [6].

Fatigue is a long protracted chronic disease that cannot be easily cured within a short time [7]. Given aging of the global population and the accelerating pace of life, fatigue incidences are increasing annually [8]. Fatigue is an early signal of related diseases but can also be the sequelae of multiple complex diseases. The World Health Organization (WHO) has declared that fatigue is a major risk factor for human life and health [9]. The COVID-19 pandemic aggravated the risk of fatigue [10, 11]. A large study involving more than 40,000 COVID-19 patients confirmed that a majority of cases (>80%) presented at least one symptom 4 weeks after being diagnosed [12]. Among the symptoms, fatigue was the most common, occurring in up to 58% of patients. Currently, fatigue patients often require long-term treatment, the adverse effects associated with long-term administration of drugs cannot be ignored [13].

*Aconitum Carmichaelii Debx* significantly improve cardiac function, relieve pathological fatigue, and excite the nervous system, which is commonly used to treat heart failure and depression [14, 15]. *Aconitum Carmichaelii Debx* has a satisfactory effect on depression-like behavior of cancer related fatigue, which was related to the inhibition of neuroinflammation [16]. In many countries, especially East Asian countries such as China, Korea, and Japan, people believe that *Panax Ginseng* is the king of herbs because of its long history and various pharmacological activities. Nowadays, *Panax Ginseng* is received increasing attention as a kind of anti-fatigue product with obvious efficacy and fewer side effects [17–19]. *Panax Ginseng-Aconitum Carmichaelii Debx* herbal pair, is a classic traditional Chinese medicine (TCM) combination which has been widely used to treat fatigue and weakness [20].

In this case, the patient developed a rash six days after using a herbal tonic that included *Panax ginseng* and *Aconitum carmichaelii Debx*. However, at the same time, the patient felt that her fatigue was significantly better than before. Therefore, she considered the herbs are useful and wished to continue taking the herbal treatment. In traditional Chinese medicine theory, *Aconitum carmichaelii Debx* (which named *Fuzi* in Chinese) and *Panax Ginseng* (which named *Renshen* in Chinese) can warm yang and benefit qi, but too much yang and qi can turn into a fire-heat evil, which can cause rashes, fever and other illnesses. That's why we considered stopping these two herbs after the rash appeared. Surprisingly, on the 17th day after stopping the two herbs, the rash subsided significantly, confirming our suspicions.

To the best of our knowledge, few herb-induced PR-LE has been reported. Here, we report the first case of PR-LE when taking *Aconitum carmichaelii Debx* and

*Panax Ginseng*, but recovered after discontinued. PR-LE have similar presentation to pityriasis rosea, but our patient never experienced the prodromal symptoms, which are present approximately in 69% of typical PR [21]. The lesions of our patient were more itchy, diffuse and confluent than typical PR, resolved after *Aconitum carmichaelii Debx* and *Panax Ginseng* were discontinued [22]. The diagnosis is based on clinical and physical examination findings. The patient had no history of food allergies and denied taking other medications. We prescribed 3 g *Aconitum carmichaelii Debx* and 9 g *Panax Ginseng* per day to this patient, both at safe doses [23, 24]. Although the exact pathophysiological mechanisms of PR-LE after herb-taking remain unclear, an autoimmune response is a possible etiological factor, and many studies have shown changes in the autoimmune response in patients with PR-LE [25, 26]. *Aconitum carmichaelii Debx* has been shown to boost autoimmunity, and *Aconitum carmichaelii* polysaccharides can increase white blood cells and lymphocytes, reverse the decreased mRNA expression of NF- $\kappa$ B, IL-6, and iNOS, differentiation of CD4+FOXP3+regulatory T cells as well as protein expression of occludin and zonula occludens [27]. Thus, we speculate that stimulation of the immune system induced by *Aconitum carmichaelii Debx* have contributed to the etiology of PR-LE. However, according to available studies, ginseng significantly decreases the pro-inflammatory cytokine interleukin (IL)-1 and significantly increases the anti-inflammatory cytokine IL-10, suggesting that it has anti-inflammatory effects [28, 29]. So, the possible pathological mechanisms of ginseng-induced PR-LE need to be further researched and investigated.

There are several limitations in this case report. First, our patient was diagnosed based on clinical and physical examination findings, histopathological examination lacked due to refusal of our patient. Second, for medical ethical reasons, we could not reintroduce the patient to these two herbal remedies in order to verify whether similar adverse effects would recur. So, it is not possible to identify either *Aconitum carmichaelii Debx* or *Panax Ginseng* was responsible for PR-LE in this case. Although *Aconitum carmichaelii Debx* seems to have more adverse effects, further studies are necessary. Third, it seems that herb-induced PR-LE recovered within 17 days after discontinuing *Aconitum carmichaelii Debx* and *Panax Ginseng* as our patient refused to use antihistamine or corticosteroid. However, it should be noted that our patient continued to take other herbs (*Cassia bark tree twig*, *Chinese Goldthread Rhizome*, *White paeony root*, *Liquorice root* and *Fresh Ginger*), which may have facilitated her recovery.

## Conclusion

In summary, we have described a rare report of PR-LE, the etiology may be related to either herb-induced stimulation of the immune system, or some rare herb component. Analysis of the case using the Naranjo adverse drug reaction probability scale indicated that *Aconitum Carmichaelii* Debx and *Panax Ginseng* were likely to be the causes of the pityriasis rosea-like eruption (Supplementary material 1). We believe such a case is unique and it has not been reported previously. Fortunately, PR-LE is responsive to discontinuing *Aconitum Carmichaelii* Debx and *Panax Ginseng* without any systemic adverse effects. Our report highlights that the presence of PR-LE is not a contraindication for subsequent anti-fatigue herb treatment. However, when anti-fatigue herb being authorized for fatigue use, monitoring for potential adverse effects (e.g., cutaneous reactions) is necessary.

## Abbreviations

PR-LE Pityriasis rosea like eruption  
TCM Traditional Chinese Medicine

## Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12906-024-04556-5>.

Supplementary Material 1

Supplementary Material 2

## Acknowledgements

We express our gratitude to Chengda Yuan for the excellent technical assistance.

## Author contributions

XZ, FQZ, and RYL examined and followed up the patient; XYZ and YQZ wrote the original draft manuscript; APZ and BL contributed to manuscript editing; APZ, XZ, MQW and RYL contributed to revision of the final manuscript; all authors have read and approved the final manuscript.

## Funding

This work was supported in part by Grants-in-Aid from Zhejiang Provincial Traditional Chinese Medicine Science and Technology Plan (project 2021ZB204), and by Zhejiang Province 2022 national famous old Chinese medicine experts create city studio construction project(CaiFeng Zhu).

## Data availability

All data generated or analyzed during this study are included in this published article.

## Declarations

### Ethics approval and consent to participate

Institutional Review Board approval was not required for this case report, because according to the national guidelines, the article is exempt from ethical committee approval as it is a case report of a patient previously seen.

### Consent for publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor of this journal.

### Competing interests

The authors declare no competing interests.

Received: 4 September 2023 / Accepted: 18 June 2024

Published online: 29 June 2024

## References

1. Azzolino D, Arosio B, Marzetti E, Calvani R, Cesari M. Nutritional status as a mediator of fatigue and its underlying mechanisms in older people. *Nutrients*. 2020;12:444. <https://doi.org/10.3390/nu12020444>.
2. Zielinski MR, Systrom DM, Rose NR. Fatigue, sleep, and autoimmune and related disorders. *Front Immunol*. (1827) 10:10. <https://doi.org/10.3389/fimmu.2019.01827>.
3. Davis JM, Bailey SP. Possible mechanisms of central nervous system fatigue during exercise. *Med Sci Sports Exerc*. 1997;29:45–57. <https://doi.org/10.1097/00005768-199701000-00008>.
4. Wu Y, Ma Y, Cao J, Xie R, Chen F, Hu W, Huang Y. Feasibility study on the use of qi-tonifying medicine compound as an anti-fatigue functional food ingredient based on network pharmacology and molecular docking. *Front Nutr*. 2023;10:1131972. <https://doi.org/10.3389/fnut.2023.1131972>.
5. Atzori L, Pinna AL, Ferreli C, Aste N. Pityriasis Rosea-like adverse reaction: review of the literature and experience of an Italian drug-surveillance center. *Dermatol Online J*. 2006;12:1. <https://doi.org/10.5070/D380D8301D>.
6. Drago F, Ciccarese G, Parodi A. Pityriasis Rosea and pityriasis rosealike eruptions: how to distinguish them? *JAAD Case Rep*. 2018;4:800–1. <https://doi.org/10.1016/j.jdc.2018.04.002>.
7. Lim EJ, Lee JS, Lee EJ, Jeong SJ, Park HY, Ahn YC, et al. Nationwide epidemiological characteristics of chronic fatigue syndrome in South Korea. *J Transl Med*. 2021;19:502. <https://doi.org/10.1186/s12967-021-03170-0>.
8. Yang D, Lian J, Wang L, Liu X, Wang Y, Zhao X, et al. The anti-fatigue and anti-anoxia effects of Tremella extract. *Saudi J Biol Sci*. 2019;26:2052–6. 10.1016/j.sjbs.2019.08.014.
9. Yang X, Li F, Liu Y, Li D, Li J. Study on the correlation between NF- $\kappa$ B and central fatigue. *J Mol Neurosci*. 2021;71:1975–86. <https://doi.org/10.1007/s12031-021-01803-z>.
10. Mehndru S, Merad M. Pathological sequelae of long-haul COVID. *Nat Immunol*. 2022;23:194–202. <https://doi.org/10.1038/s41590-021-01104-y>.
11. Raveendran AV, Jayadevan R, Sashidharan S, Long COVID. An overview. *Diabetes Metab Syndr*. 2021;15:869–75. <https://doi.org/10.1016/j.dsx.2021.04.007>.
12. Lopez-Leon S, Wegman-Ostrosky T, Perelman C, Sepulveda R, Rebolledo PA, Cuapio A, et al. More than 50 long-term effects of COVID-19: a systematic review and meta-analysis. *medRxiv [Preprint]*. 2021. <https://doi.org/10.1101/2021.01.27.21250617>.
13. Hulme K, Safari R, Thomas S, Mercer T, White C, Van der Linden M, et al. Fatigue interventions in long term, physical health conditions: a scoping review of systematic reviews. *PLoS ONE*. 2018;13:e0203367. <https://doi.org/10.1371/journal.pone.0203367>.
14. Wang Y, Peng F, Chen T. The Experiment Research on Zingiberis and Acniti Praeparatae Decoction. *Guizhou Sci*. 2010;28:90–2.
15. Zhang H, Fan W. Clinical significance of the prescription of Ganjiang-Fuzi Decoction in. *Traditional Chin Med J*. 2014;13:16–8.
16. Yang S, Yang Y, Chen C, Wang H, Ai Q, Lin M, Zeng Q, Zhang Y, Gao Y, Li X, Chen N. The Anti-neuroinflammatory Effect of Fuzi and Ganjiang extraction on LPS-Induced BV2 Microglia and its intervention function on Depression-Like Behavior of Cancer-related fatigue model. *Mice Front Pharmacol*. 2021;12:670586. <https://doi.org/10.3389/fphar.2021.670586>. eCollection 2021. PMID: 34122094.
17. Lu G, Liu Z, Wang X, Wang CR. Advances in Panax ginseng. C.A. Meyer as a Herb for Anti-fatigue: an effects and mechanisms Review. *Foods*. 2021;10(5):1030. <https://doi.org/10.3390/foods10051030>.
18. Zhang H, Abid S, Ahn JC, Mathiyalagan R, Kim YJ, Yang DC, Wang YP. Characteristics of Panax ginseng cultivars in Korea and China. *Molecules*. 2020;25(11):2635. <https://doi.org/10.3390/molecules25112635>.
19. Panossian A, et al. Network Pharmacology of Ginseng (Part II): the differential effects of Red Ginseng and Ginsenoside Rg5 in cancer and heart diseases as determined by transcriptomics. *Pharmaceuticals*. 2021a;14:1010. <https://doi.org/10.3390/ph14101010>.
20. Li C-J, Zhai R-R, Zhu X-Y, Guo Z-F, Hua Yang. Discovery of effective combination from Renshen-Fuzi herbal pair against heart failure by spectrum-effect relationship analysis and zebrafish models. *J Ethnopharmacol*. 2023;317:116832. <https://doi.org/10.1016/j.jep.2023.116832>. Online ahead of print.

21. Drago F, Broccolo F, Rebora A. Pityriasis Rosea: an update with a critical appraisal of its possible herpesviral etiology. *J Am Acad Dermatol*. 2009;61:303–18.
22. Pityriasis Rosea: Diagnosis and Treatment. Villalon-Gomez JM. *Am Fam Physician*. 2018. PMID: 29365241.
23. Food and Drug Administration. (2005). Guidance for industry: estimating the maximum safe starting dose in initial clinical trials for therapeutics in adult healthy volunteers. *Cent Drug Evaluation Res (CDER)*, 7(0.001).
24. Ji X, Yang M, Shen G, Or KH, Yim WS, Zuo Z. Safety evaluations of the processed lateral root of *Aconitum carmichaelii* Debx. And its hepatotoxicity mechanisms in rats. *J Ethnopharmacol*. 2023;301:115801. <https://doi.org/10.1016/j.jep.2022.115801>.
25. Chen H, Chen ZG, TENG XH. Study on the immunological etiology of pityriasis rosea[J]. *Hebei Med*. 2013;19(07):1115–7.
26. Durusoy C, Alpsoy E, Yilmaz E. Pityriasis Rosea in a patient with Behçet's disease treated with interferon alpha 2A. *J Dermatol*. 1999;26(4):225–8. <https://doi.org/10.1111/j.1346-8138.1999.tb03461.x>.
27. Tu R, Zhou C, Huang W, Feng Z, Zhao Q, Shi X, Cui L, Chen K. Fuzi polysaccharides improve immunity in immunosuppressed mouse models by regulating gut microbiota composition. *Heliyon*. 2023;9(7):e18244. <https://doi.org/10.1016/j.heliyon.2023.e18244>. eCollection 2023 Jul. PMID: 37519691.
28. Yang L, Huang GY, Wang YG, Han BQ, Zheng B, Zhu JM, Gao S, Gao Y. Efficacy of Renshen (Radix Ginseng) plus Fuzi (Radix Aconiti Lateralis Preparata) on myocardial infarction by enhancing autophagy in rat. *J Tradit Chin Med*. 2021;41(6):909–18. <https://doi.org/10.19852/j.cnki.jtcm.2021.06.009>. PMID: 34111111.
29. Lee J, Cho JY, Kim WK. Anti-inflammation effect of Exercise and Korean Red ginseng in aging model rats with diet-induced atherosclerosis. *Nutr Res Pract*. 2014;8(3):284–91. <https://doi.org/10.4162/nrp.2014.8.3.284>. Epub 2014 May 15. PMID: 24944773.

### Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.