

# Higher IL-9 Level Is Associated with Psoriasis Vulgaris Complicated by Metabolic Syndrome [Letter]

Ali Yalcinkaya\*, Nabil Ansari\*, Vishvan Naidu\*

Faculty of Life Sciences and Medicine, King's College London, London, UK

\*These authors contributed equally to this work

Correspondence: Ali Yalcinkaya, Faculty of Life Sciences and Medicine, King's College London, Great Maze Pond, London, SE1 1UL, United Kingdom, Tel +44 7477285220, Email ali.yalcinkaya@kcl.ac.uk

## Dear editor

We reviewed the research conducted by Yan et al regarding the link between psoriasis vulgaris (PV) and metabolic syndrome (MetS) through interleukin (IL)-9 with great interest.<sup>1</sup> The study found that elevated IL-9 levels were associated with patients with PV complicated by MetS, suggesting a potential relationship between both conditions. While this study has introduced promising insights within the realms of psoriasis and metabolic disorders, we have identified and provided recommendations for improvement.

PV is clinically characterised by the presence of scaly erythematous plaques, which are often raised and pruritic. Areas most commonly affected are the face and extensor surfaces of the knees and elbows, though lesions can also be seen in intertriginous regions.<sup>2</sup> While the article states that the Chinese Dermatology Society guidelines were used to identify and include patients with PV in this study, neither a specific list of symptoms nor a link to the guidelines was provided. Given the evolving nature of diagnostic criteria, this makes it more difficult for researchers to replicate the study and facilitate comparisons across other studies. Greater clarity in this domain will allow for more meaningful meta-analyses and systematic reviews for the synthesis of evidence.

The M5 cytokine cocktail was used as an in vitro psoriasis model in this study. While the role of IL-17A within the cocktail was discussed, a concise overview of the other four components could enhance understanding of the reasoning behind the use of the cocktail. For example, tumour necrosis factor alpha (TNF- $\alpha$ ) and IL-1 are recognised contributors to psoriasis-related inflammation.<sup>3</sup> IL-22 contributes to skin scaling and thickening by inhibiting keratinocyte terminal differentiation, while oncostatin M (OsM) enhances keratinocyte activation.<sup>4</sup> OsM's link to increased sensitivity to interferon gamma (INF- $\gamma$ ) suggests a nexus between the OsM and IFN pathways influencing keratinocyte responses. Briefly outlining the roles of these elements and their relevance to PV symptoms would provide readers with a more comprehensive rationale for selecting the M5 cocktail for in vitro studies.

Regarding confounding variables, the inclusion of socioeconomic status (SES) is crucial. Associations between lower SES and greater severity of PV symptoms have been well documented in the literature. PV exacerbation has been directly linked to increased stress levels and the inability to access expensive and effective treatment options for those with lower SES.<sup>5</sup> The validity of the researchers' findings regarding the elevated IL-9 levels in patients with PV complicated by MetS can be enhanced by accounting for the possible variation in SES between the groups of participants. Consequently, a greater understanding of the dynamic between the potential link between PV and MetS can be established, improving the validity and generalisability of the conclusions drawn from this study.

In conclusion, this study offers crucial insights into the connection between PV and MetS. By elucidating PV diagnosis criteria and emphasizing the role of the M5 cocktail while addressing SES as a confounding factor, the study's conclusions could be fortified. This approach paves the way for a deeper understanding of the PV-MetS relationship's underlying mechanisms in future research.

## Disclosure

The authors report no conflict of interest in this communication.

## References

1. Yan L, Yu C, Zhao Z, Zhang Y, Wang R, Li C. Higher IL-9 level is associated with psoriasis vulgaris complicated by metabolic syndrome. *Clin Cosmet Investig Dermatol*. 2023;16:2297–2307. doi:10.2147/CCID.S422355
2. 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
3. Ovcina-Kurtovic N, Kasumagic-Halilovic E. Serum levels of tumor necrosis factor - alpha in patients with psoriasis. *Mater Sociomed*. 2022;34(1):40–43. doi:10.5455/msm.2022.33.40-43
4. Gazel A, Rosdy M, Bertino B, Tornier C, Sahuc F, Blumenberg M. A characteristic subset of psoriasis-associated genes is induced by oncostatin-M in reconstituted epidermis. *J Invest Dermatol*. 2006;126(12):2647–2657. doi:10.1038/sj.jid.5700461
5. Jung S, Lee SM, Suh D, Shin HT, Suh DC. The association of socioeconomic and clinical characteristics with health-related quality of life in patients with psoriasis: a cross-sectional study. *Health Qual Life Outcomes*. 2018;16(1):180. doi:10.1186/s12955-018-1007-7

Dove Medical Press encourages responsible, free and frank academic debate. The content of the Clinical, Cosmetic and Investigational Dermatology 'letters to the editor' section does not necessarily represent the views of Dove Medical Press, its officers, agents, employees, related entities or the Clinical, Cosmetic and Investigational Dermatology editors. While all reasonable steps have been taken to confirm the content of each letter, Dove Medical Press accepts no liability in respect of the content of any letter, nor is it responsible for the content and accuracy of any letter to the editor.

Clinical, Cosmetic and Investigational Dermatology

Dovepress

### Publish your work in this journal

Clinical, Cosmetic and Investigational Dermatology is an international, peer-reviewed, open access, online journal that focuses on the latest clinical and experimental research in all aspects of skin disease and cosmetic interventions. This journal is indexed on CAS. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/clinical-cosmetic-and-investigational-dermatology-journal>

<https://doi.org/10.2147/CCID.S437849>