



The Efficacy and Safety of Nemolizumab in Patients with Prurigo Nodularis: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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To the Editor,

Recent advancements in the understanding of Prurigo nodularis (PN) immunopathogenesis have led to more treatment choices. Since August 2024, nemolizumab has been approved by the US Food and Drug Administration [1]. We systematically reviewed the efficacy and safety of nemolizumab among existing randomized, double-blinded, and placebo-controlled clinical trials.

We performed every step according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. We searched electronic databases (Embase, Scopus, PubMed, and Cochrane) from their inception to 01 January 2025. The search strategies and methods are provided in Supplementary Figure A1 and Materials (Available via Mendeley at <https://data.mendeley.com/datasets/tghtskv98w/1>). Finally, this study included four studies involving 560 patients in experimental groups and 299 patients in control groups. We summarized the primary and second endpoints

of each study in Supplementary Table 1 (Available via Mendeley at <https://data.mendeley.com/datasets/tghtskv98w/1>).

Overall, compared with placebos, the use of nemolizumab treatment showed a significant improvement in the lesion score and pruritus from week 4: Peak Pruritus Numerical Rating Scale (PP-NRS) improvement ≥ 4 points (odds ratio (OR): 9.27; 95% confidence interval (CI): 5.08–16.90; $P < 0.00001$) and Investigators' Global Assessment score (IGA 0/1) (OR: 3.24; 95% CI: 0.45–23.49; $P = 0.02$) (Figures 1 and 2).

The intense itching associated with PN significantly affects patients' quality of life, leading to sleep disturbances, particularly during the evening [2]. The results of the meta-analysis indicated that nemolizumab has better performance than does the placebo on the Sleep Disturbance Numerical Rating Scale (SD-NRS) (OR: 6.33; 95% CI: 3.51–11.41; $P < 0.00001$). (Supplementary Figure A2, available via Mendeley at <https://data.mendeley.com/datasets/tghtskv98w/1>).

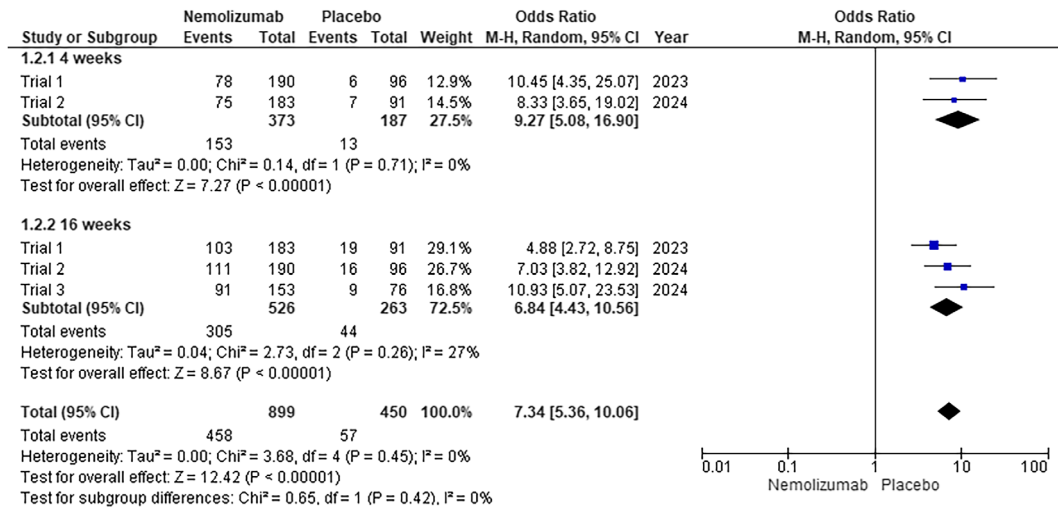


Figure 1. Forest plot of effect of nemolizumab treatment on PP-NRS improvement ≥ 4 points in prurigo nodularis patients.

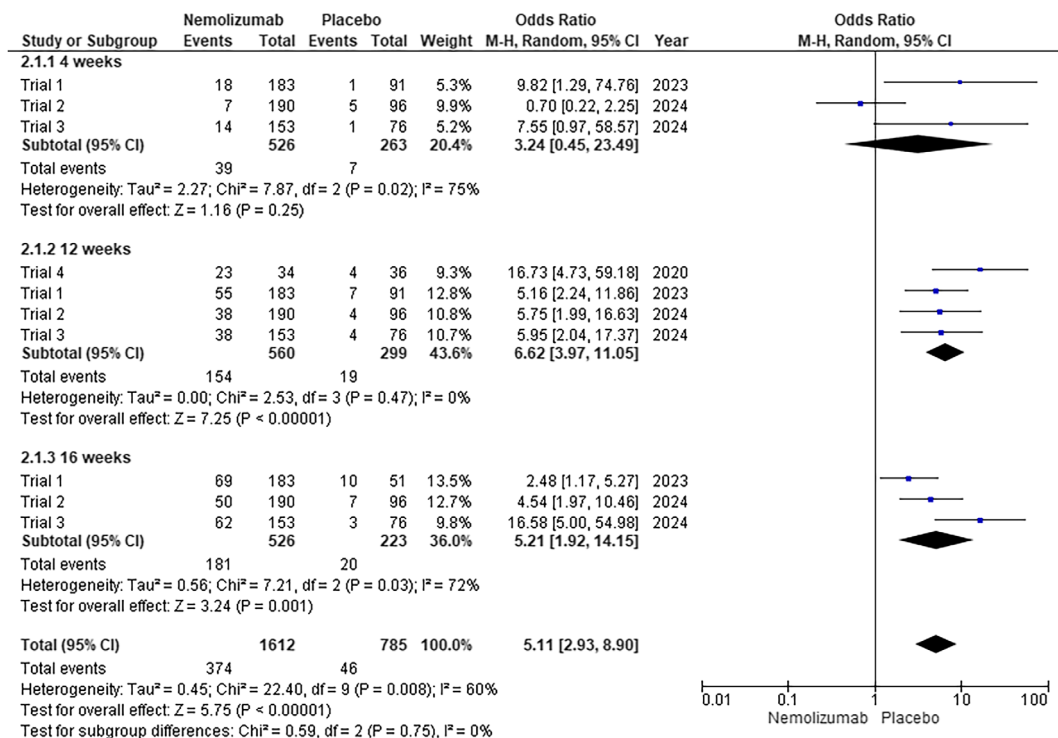


Figure 2. Forest plot of effect of nemolizumab treatment on Investigator's Global Assessment score (IGA 0/1) in prurigo nodularis patients.

The safety profile and efficacy of nemolizumab were similar to dupilumab [3]. Nemolizumab demonstrated the highest risk of AEs, and the incidence was significantly higher than that of the placebo. Twenty-nine patients in the nemolizumab-treated group experienced serious AEs, and 22 of them discontinued the treatment. The most commonly reported serious AEs of nemolizumab were infection (OR: 0.81; 95% CI: 0.53–1.24; $P=0.52$), atopic dermatitis (OR: 2.68; 95% CI: 0.54–13.24; $P=0.21$), peripheral or facial

edema (OR: 1.83; 95% CI: 0.50–6.69; $P=0.70$), and asthma (OR: 1.35; 95% CI: 0.35–5.16; $P=0.77$), all of which were mild-to-moderate in severity (Supplementary Figure A3, available via Mendeley at <https://data.mendeley.com/datasets/tghtskv98w/1>).

In conclusion, this meta-analysis showed that nemolizumab is a promising treatment option for PN. Further studies with long follow-up will be needed to fully elucidate the safety profile of nemolizumab.

References

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