Allergologia et immunopathologia
Sociedad Española de Inmunología Clínica, Alergología y Asma Pediátrica
www.all-imm.com

LETTER TO THE EDITOR

OPEN ACCESS

Critical appraisal of reporting, statistical methodology, and interpretation in a preclinical intranasal curcumin model of allergic rhinitis

Kazim Okan Dolu*

Department of Pediatric Allergy and Immunology, Kanuni Sultan Süleyman Training and Research Hospital, Istanbul, Türkiye

Received 24 January 2026; Accepted 28 January 2026
Available online 1 March 2026

Dear Editor,
I read with great interest the article by Demir et al.[1] entitled "Effectiveness of topical intranasal curcumin in the experimentally induced allergic rhinitis model in rats," which evaluates intranasal curcumin in an ovalbumin-induced allergic rhinitis (AR) rat model. The study provides useful symptom and histopathological observations; however, several issues related to reporting consistency, statistical methodology, and citation accuracy warrant clarification to avoid overinterpretation of the findings.

1. **Discrepancy in group reporting.** The abstract states that forty rats were randomized into "five groups," yet only four groups are listed (Sham, negative control, positive control, and curcumin), and the methods and tables likewise describe a four-group design. Clarifying whether a fifth group existed—and if so, reporting its rationale and data—or correcting the abstract would improve internal consistency and reproducibility.
2. **Statistical constraints for ordinal outcomes.** Several histopathological outcomes are graded as ordered categories (scores 0–3). In the Discussion, the nonsignificant change in vascular congestion is described as being determined by "*t*-test analysis." Because these outcomes are ordinal, parametric tests that assume normally distributed continuous data are generally inappropriate. A brief clarification of the statistical approach (including which tests were used for each endpoint) and consideration of nonparametric or ordinal methods (e.g., Kruskal–Wallis/Mann–Whitney tests or ordinal regression) would strengthen the analytic validity.
3. **Interpretation of IgE results and "comparable efficacy" language.** For serum OVA-specific IgE, the study group reduction versus the AR group is reported as not significant (p=0.81), and no difference is reported between the positive control and study groups (p=0.996). With n=10 per group, nonsignificance should not be interpreted as equivalence. If the intended claim is noninferiority or equivalence to intranasal steroids, this requires an a priori noninferiority/equivalence framework (including margins and appropriate analyses). Otherwise, the discussion would benefit from more cautious wording, emphasizing that the immunologic endpoint did not show a statistically detectable effect in this sample.

***Corresponding author:** Kazim Okan Dolu, Department of Pediatric Allergy and Immunology, Kanuni Sultan Süleyman Training and Research Hospital, Istanbul, Türkiye. *Email address*: okandolu@gmail.com
Comment on: Demir E, Koten M, Usturalı Keskin FE, Eryıldız C, Gülseven Güven S. Effectiveness of topical intranasal curcumin in the experimentally induced allergic rhinitis model in rats. Allergol. Immunopathol. (Madr). 2026;54(1):1-7. https://doi.org/10.15586/aei.v54i1.1468

https://doi.org/10.15586/aei.v54i2.1708

4. **Citation mismatch and potential overstatement of human evidence.** The manuscript states that "a randomized double-blind study of 241 patients" showed symptomatic and airflow improvement with curcumin, citing this as reference 26. However, reference 26 corresponds to an animal study in guinea pigs.[2] The correct reference for the 241-patient randomized, double-blind clinical trial is Wu and Xiao.[3] Correcting this citation is important to prevent inadvertent misattribution of the human evidence base.
5. **Local tolerability considerations.** The Discussion notes a mild increase in goblet cell numbers in the curcumin group, speculating that this could reflect irritation or infection. Given the proposed translational promise of intranasal curcumin, local safety deserves explicit emphasis. It would be helpful to clarify whether any objective signs of infection were observed, and to acknowledge as a limitation that the absence of a "curcumin-only" healthy control group makes it difficult to disentangle potential irritant effects of the formulation from disease-model-related changes.

In summary, the study's symptomatic and histopathological improvements are encouraging, but addressing the above reporting, statistical, and citation issues would improve transparency and ensure that the conclusions remain appropriately calibrated to the presented data.

Thank you for considering these comments.

Sincerely,
Kazim Okan Dolu

Mandatory Disclosure on Use of Artificial Intelligence

The authors declare that no AI-assisted tools were used in the preparation of this manuscript. All references have been manually verified for accuracy and relevance.

Author Contributions

Kazim Okan Dolu did conceptualization, analysis, writing—original draft, and writing—review and editing.

Conflicts of Interest

The author declares no competing interests.

Funding

The author received no specific funding for this work.

References

1. Demir E, Koten M, Usturalı Keskin FE, Eryıldız C, Gülseven Güven S. Effectiveness of topical intranasal curcumin in the experimentally induced allergic rhinitis model in rats. Allergol. Immunopathol. (Madr). 2026 Jan 1;54(1):1–7. https://doi.org/10.15586/aei.v54i1.1468. PMID: 41510916.
2. Thakare VN, Osama MM, Naik SR. Therapeutic potential of curcumin in experimentally induced allergic rhinitis in guinea pigs. Int. Immunopharmacol. 2013 Sep;17(1):18–25. https://doi.org/10.1016/j.intimp.2013.04.025. PMID: 23665314.
3. Wu S and Xiao D. Effect of curcumin on nasal symptoms and airflow in patients with perennial allergic rhinitis. Ann. Allergy Asthma Immunol. 2016 Dec;117(6):697–702.e1. https://doi.org/10.1016/j.anai.2016.09.427. PMID: 27789120.