

DR. MÁRIO MORAIS-ALMEIDA (Orcid ID : 0000-0003-1837-2980)

Article type : Correspondence

Update on asthma prevalence in severe COVID-19 patients

Mário Morais-Almeida^{1,2,*}, Miguel T. Barbosa,^{1,*} Cláudia S. Sousa,¹ Rita Aguiar,¹ Jean Bousquet^{3,4}

¹Allergy Centre, CUF Descobertas Hospital, Lisbon, Portugal.

²Portuguese Association of Asthmatics (APA), Porto, Portugal.

³Charité, Universitätsmedizin Berlin, Humboldt-Universität zu Berlin, and Berlin Institute of Health, Comprehensive Allergy Center, Department of Dermatology and Allergy, Berlin, Germany.

⁴MACVIA-France, Montpellier, France.

*Both authors contributed equally to this paper

To the Editor,

We carefully read the recently published research letter “Is asthma protective of COVID-19?” by Carli et al.¹ with great interest. Important topics for asthma patients during the coronavirus disease 2019 (COVID-19) pandemic were discussed, including that until recently there was limited evidence that patients with chronic respiratory disorders are at lower risk of being infected with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) or becoming severely ill.

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/ALL.14482](https://doi.org/10.1111/ALL.14482)

This article is protected by copyright. All rights reserved

Only taking into account previous reports from China and Italy, where asthma was underrepresented in COVID-19 patients, the authors acknowledge the heterogeneous condition that is asthma, suggesting that T2-immunity, interferon-mediated immune responses and increased number of eosinophils in the airways could have a protective effect against COVID-19 severity.¹

The epidemiology of COVID-19 is changing rapidly with new data. More recent reports from the United States of America and from several European countries, in particular the United Kingdom (UK), states a higher asthma prevalence in patients with COVID-19, suggesting that asthma is more common in COVID-19 patients than it was previously reported in Asia and in the first European surveys.² Data from the UK Biobank, a large prospective case-control study, found an asthma prevalence of 17,9% in 605 COVID-19 hospitalized patients, mostly of them adults, surpassing the prevalence of asthma in the general population.³

In the OpenSAFELY Collaborative Study (UK), a significant increased risk of severe COVID-19 disease and mortality rate was found in patients with asthma, particularly in patients with recent oral corticosteroids (OCS) use.⁴ These findings indicate an increased asthma severity and/or poor control, and in accordance with data from previous coronavirus outbreaks, that the use of systemic corticosteroids can be associated with a higher viral load.⁵

We agree with Carli et al¹ that further studies focused on asthma and its different phenotypes are needed to improve our understanding of the association between asthma and COVID-19 severity.⁶ Factors as co-viral infections, that were quite low in the first Chinese and Italian reports, or different exposures to allergens or irritants, as tobacco smoke, can justify some of the differences found in asthma prevalence between the available case-series.

Based on current recommendations, it is crucial that patients with asthma do not stop their controller medication, which may lead to a higher risk of asthma exacerbations, emergency room visits, hospitalization, and increased use of OCS.

In conclusion, according to the available data, patients with asthma must still be included in the high-risk COVID-19 groups and further research is warranted to improve our understanding of the relationship between asthma and COVID-19.

References

1. Carli G, Cecchi L, Stebbing J, Parronchi P, Farsi A. Is asthma protective of COVID-19? *Allergy*. 2020 Jun 1. doi: 10.1111/all.14426.
2. Morais-Almeida M, Pité H, Aguiar R, Ansotegui I, Bousquet J. Asthma and the COVID-19 pandemic: literature review. *Int Arch Allergy Immunol*. 2020 Jun 9:1-9. doi: 10.1159/000509057.
3. Khawaja AP, Warwick AN, Hysi PG, et al. Associations with COVID-19 hospitalisation amongst 406,793 adults: the UK Biobank prospective cohort study. 2020 May 11. medRxiv preprint doi: <https://doi.org/10.1101/2020.05.06.20092957>.
4. Williamson E, Walker AJ, Bhaskaran K, Bacon S, Bates C, Morton CE; The OpenSAFELY Collaborative. OpenSAFELY: factors associated with COVID-19-related hospital death in the linked electronic health records of 17 million adult NHS patients. 2020 May 7. medRxiv preprint doi: <https://doi.org/10.1101/2020.05.06.20092999>.
5. Lee N, Allen Chan KC, Hui DS, et al. Effects of early corticosteroid treatment on plasma SARS-associated Coronavirus RNA concentrations in adult patients. *J Clin Virol*. 2004;31(4):304-309.
6. Morais-Almeida M, Bousquet J. COVID-19 and asthma: To have or not to have T2 inflammation makes a difference? *Pulmonology*. 2020 May 19:S2531-0437(20)30104-5. doi: 10.1016/j.pulmoe.2020.05.003.

Corresponding author: Mário Morais-Almeida, Allergy Centre, CUF Descobertas Hospital, 1998-018 Lisboa, Portugal. E-mail: mmoraisalmeida@netcabo.pt. Telephone: +351917232267.

Conflict of interest: None declared.

Support: No funding was received in the publication of this letter.

Author's contributions: MMA and MTB performed data analysis and drafted the manuscript. CSS, RA and JB provided critical review. All authors approved the final draft of the manuscript.

Acknowledgements

Dr. Morais-Almeida has nothing to disclose.

Dr. Barbosa has nothing to disclose.

Dr. Sousa has nothing to disclose.

Dr. Aguiar has nothing to disclose.

Dr. Bousquet has nothing to disclose.