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CORRESPONDENCE

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Reply to: Kow CS et al. Are severe asthma patients at higher risk of developing severe outcomes from COVID-19?

We read with interest the correspondence letter sent by Kow et al[1] and referring to our recently published article about the incidence of CoronaVIrus Disease 19 (COVID-19) in severe asthmatics of our Severe Asthma Network in Italy (SANI) registry.[2] We agree with the authors that several factors, such as the type and the degree of strictness of lockdown measures implemented, and the different distribution of comorbidities, can contribute to different incidences of COVID-19 among severe asthmatics in different countries. Our article is, so far, the published report with the largest number of severe asthmatics (more than 1500), properly diagnosed and managed by reference centres, studied for incidence of COVID-19 which resulted lower than expected, associated with asthma exacerbation only in a minority of patients, and with lower mortality rate compared to the Italian general population. On the other hand, in support of their hypothesis that severe asthma is associated with more severe course of COVID-19, Kow et al cited and commented a retrospective study by Chhiba et al[3] in which patients with COVID-19 were stratified according to the presence of asthma, defined by means of a consistent International Classification of Disease, Tenth Revision (ICD-10) code in the electronic repository of health records; the ICD-10-based classification is a good strategy to mine asthma cases in a retrospective general population study, but it is likely to be affected by a high proportion of misdiagnosed cases, as misdiagnosis has been reported as quite frequent in asthma and chronic obstructive pulmonary disease (COPD).[4] Miscoding and misdiagnosing chronic respiratory diseases may result, as recently described, in underestimation of higher risk of more severe course of COVID-19 in asthmatic patients only when associated with comorbid diagnosis of COPD.[5]

In our cohort, patients had a confirmed diagnosis of severe asthma by reference centres, and the risk of misdiagnosis was therefore minimized. Moreover, Chhiba et al did not found significant difference in risk of hospitalization or mortality due to COVID-19 in patients with or without asthma, even after adjusting for covariates or the level of asthma treatment. Similar findings have been published also by other authors[6,7] strengthening that asthma seems not to be a relevant risk factor for more frequent and worse clinical outcomes of COVID-19. Furthermore, the definition of asthma severity according to the level of anti-asthma therapy (from step 1 to step 5 of Global Initiative for Asthma—GINA guidelines) requires that all patients have been treated with the minimum dose of drugs able to maintain the asthma control, and this is seldom assessed in the general practice.

Notably, we agree with Kow et al that further real-life studies, possibly on well-defined and properly diagnosed patients with asthma, are needed to confirm our and other authors' findings. This will be particularly relevant considering, for example, that a recent large-scale study on patients who underwent severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) testing reported that a particular phenotype of asthma (non-allergic asthma) confers a greater risk of susceptibility to SARS-CoV-2 infection and severe clinical outcomes of COVID-19.[8]

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CONFLICT OF INTERESTS

Enrico Heffler reports participation to advisory boards and personal fees from AstraZeneca, Sanofi, GSK, Novartis, Circassia, Nestlè Purina, Boheringer Ingelheim and Valeas, outside the submitted work. Marco Contoli reports grants from Chiesi, and University of Ferrara—Italy, and personal fees from Chiesi, AstraZeneca, Boehringer Ingelheim, Alk-Abello, GlaxoSmithKline, Novartis and Zambon, outside the submitted work. Alberto Papi reports grants, grants, personal fees and non-financial support from AstraZeneca and Menarini; grants, personal fees, non-financial support and other from Boehringer Ingelheim, Chiesi Farmaceutici and TEVA; personal fees, non-financial support and other from GlaxoSmithKline, Mundipharma, Zambon, Novartis and Sanofi/Regeneron; personal fees from Roche and Edmond Pharma; and grants from Fondazione Maugeri and Fondazione Chiesi, outside the

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