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ASSESSING OUTCOME PREDICTORS OF COVID-19 REQUIRES A MULTICENTRE, PROSPECTIVE DESIGN AND INCLUSION OF ALL DETERMINANTS

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LETTER TO THE EDITOR

We read with interest Dokic et al's article about a retrospective, cross-sectional study on the outcome predictors of SARS-CoV-2 infections (SC2Is) in 1237 patients hospitalised for COVID-19 between November 2020 to March 2021 in 7 tertiary centres [1]. It turned out that arterial hypertension and diabetes were the most common comorbidities [1]. However, the strongest predictors of mortality were renal insufficiency, age, male gender, and number of comorbidities [1]. The study is impressive, but some points require discussion.

First, the design was retrospective implying that the data used could no longer be verified for accuracy, missing data could no longer be supplemented, and desirable additional data could no longer be generated. We should know how missing data were handled, particularly whether patients with missing data were excluded from the analysis or not. The number and type of missing data largely determines the reliability of the results and their interpretation. The quality of the results is only as good as the quality of the electronically stored data.

Second, the diagnosis of SC2I was made by PCR in only 67.3% of patients [1]. In the remainder, the diagnosis SC2I was made through antigen tests or based on the clinical presentation. Antigen tests have the disadvantage that they are less accurate than PCR tests due to the increased likelihood of false negative results [2]. Under no circumstances is it acceptable to diagnose SC2I based on clinical presentation alone. SC2I can mimic other viral or bacterial lung infections, making it imperative to diagnose COVID-19 using RT-PCR alone.

Third, several factors affecting the course and mortality of SC2I were not included in the analysis. These include chronic alcoholism, smoking, superinfections, immunological disorders, psychiatric disease, and the number and type of co-medications administered during hospitalisation. Various medications are known to have side effects, which is why it is imperative to consider them as factors influencing mortality and include them in the analysis.

Fourth, it is unclear why patients admitted to the ICU were not included in the analysis. Patients with SC2I requiring ICU admission are usually severely ill and have a high risk of morbidity and mortality. It would therefore, have been imperative to include these patients in the analysis. Otherwise the results and their interpretation will be massively distorted.

Fifth, it is unclear what happened to the 16% of patients for whom the diagnosis of SC2I was not confirmed according to their electronic records. We should know whether these patients were still included or excluded from the analysis.

Fifteen percent of patients had neurological sequelae. We should know how many of these patients already had neurological disease before admission for SC2I and how many

developed neurological complications during hospitalisation.

In summary, the diagnosis SC2I should be made exclusively through the use of RT-PCR. An international, prospective, multicentre design is needed to assess the outcome predictors of SC2Is. Comorbidities can influence the outcome of SC2Is, but the full range of possible predictors must be considered and included in the analysis before final conclusions can be drawn.

Statement of Ethics

The study was approved by the institutional review board.

Data availability statement

Data that support the findings of the study are available from the corresponding author.

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Author contribution:

JF: design, literature search, discussion, first draft, critical comments, final approval.

SZ: literature search, discussion, critical comments, final approval

Disclosures

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Compliance with Ethics Guidelines

This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

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