COVID-19 is the most devastating pandemic in recent history leading to utmost economic and social disruption that will likely require decades for recovery. Due to the rapid spread of the virus globally, there have been more than 70,000 publications in the 10 months since January 2020. This is understandable given the need to collaborate globally, and act on our understanding of the virus as soon as possible. However, the immense data urgently generated within this short period of time may have major limitations given that the researchers have been unable to spend the time that it usually requires to carefully design the study protocol, obtain ethics approval, collect and appropriately analyse the data.

The risk of COVID-19 in the large patient population with autoimmune inflammatory rheumatic diseases is also of major interest. Despite the general elevated risk in rheumatological diseases of serious non-COVID-19 infections, either being linked to the underlying diseases, or to the medications with which they are treated, the risk attributable to COVID-19 in these diseases is not straightforward. One reason is the cytokine release syndrome seen in severe COVID-19 infections that is not seen with other infections, and the fact that some medications investigated for its treatment overlap with treatments used in rheumatological diseases. Therefore, rheumatologists have been struggling to know how to advise their patients on whether or not their medications are, themselves, further adding to the risk they already have due to their underlying disease. Thus, in this context, we read the article by Freites Núñez et al in which they investigated the risk factors for hospital admission related to COVID-19 in patients with autoimmune inflammatory rheumatic diseases with great interest. They concluded that increased age and having a systemic autoimmune condition (as opposed to chronic inflammatory arthritis per their classification) increased the risk of hospital admission, whereas disease-modifying antirheumatic drugs were not associated with hospital admission. Although we understand the added challenges posed to research by the pandemic, there are some major limitations of the study that must be addressed or taken into account when interpreting the results.

Our first concern comes with how COVID-19 infectious status was confirmed in the study population. The authors’ primary outcome was admission to hospital with a medical diagnosis of COVID-19 and/or a positive PCR result between 1 March and 15 April compared with outpatients with symptomatic COVID-19 disease. Unfortunately, and understandably, the confirmatory PCR test could not be done for every patient due to the lack of tests or extreme healthcare overload. The authors recognise the fact that almost 20% of admitted patients were not tested with PCR is a major limitation of their study. From our point of view, the bigger concern is the difference in the percentage of testing between the admitted versus non-admitted groups, as the testing was not completed randomly. In their table 1, they report only 25% of the non-admitted patients being tested (all being positive) compared with 81% of admitted patients (76% being positive). Since there is no description of the methodology used to decide how they have selected the patients to be tested or the admission criteria, there might have been a selection bias to test sicker patients and the decision to admit may have been affected by the positive test itself. The degree of confounding should be checked by including ‘being tested for COVID-19’ as one of the variables being investigated in their multivariable analysis. If this is significant then this needs to be adequately adjusted for.

The second concern is the terminology used to describe the study design. It is called an observational longitudinal study in the abstract, then a prospective observational study in the methods. The study onset is reported to be ‘when their health area had the first hospital admission related to COVID-19’. This is somewhat unconventional as, although COVID-19 related research has certainly been expedited in every step, we wonder how the authors were able to enrol even the first admitted patient to a prospective study that requires an ethics approval before recruitment. Also, the study end date is not consistent in the methods, being reported as 15th and 24th of April. Considering the absence of the detailed data on some variables such as the dose of the corticosteroid therapies, the lack of admission and COVID-19 testing criteria, their data resonate more with a retrospective design.

In summary, Freites Núñez et al’s sharing of their observations regarding a vulnerable patient population is certainly useful in the middle of this devastating pandemic, but from our point of view, it is important to recognise these major limitations when interpreting their results.

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Contributors SZA: writing the manuscript; corresponding author. EH and PT: revising the manuscript critically for important intellectual content.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; internally peer reviewed.

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To cite Aydin SZ, Hepworth E, Tugwell P. Ann Rheum Dis Epub ahead of print: [please include Day Month Year]. doi:10.1136/annrheumdis-2020-219542

Received 18 November 2020
Accepted 19 November 2020

http://dx.doi.org/10.1136/annrheumdis-2020-219580
Ann Rheum Dis 2020;0:0. doi:10.1136/annrheumdis-2020-219542

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