Response to ‘Correspondence on ‘What comes after the lockdown? Clustering of ANCA-associated vasculitis: single-centre observation of a spatiotemporal pattern” by Hakroush and Tampe

In our previous report on anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitis (AAV) during current COVID-19 pandemic, we described our observation of both an incidence-shift with a post-lockdown clustering and an increased incidence rate of AAV diagnoses between February and August 2020 compared with previous years.1

In correspondence to our article, Hakroush et al observed a similar incidence-shift with a post-lockdown increase of AAV diagnoses at their centre. This shift affected patients with less severe symptoms but not critically ill patients requiring intensive-care or intermediate-care treatment. In detail, four patients presented with biopsy-confirmed AAV in the stretch of April–June 2019 (one normal ward, three intensive/intermediate care unit), while only one diagnosis was made in the same period in 2020.2 We agree that containment measures such as a lockdown and reduced attendance of hospitals due to fear of infection may delay diagnosis of less-severely affected patients. In contrast to the observations by Hakroush et al, our patients with new diagnosis and relapse were diagnosed either on the normal ward or in an outpatient setting. Estimation of the exact diagnostic delay in our cohort was not possible due to the retrospective nature of our study and in some patients, assessment of the medical history was impossible (ie, patients with dementia),1 but most patients complained about symptoms indicative of vasculitis 1–2 months before a diagnosis was made.

Moreover, a pure delay in diagnosis does not fully explain the high number of de novo diagnoses we observed during COVID-19 outbreak 2020. Meanwhile, three more patients were diagnosed with AAV at our centre in the month of October, all of whom had symptom onset of vasculitis in August or in the beginning of September (details provided in online supplemental table 1). These cases had their disease onset during a period of low but slightly rising numbers of SARS-CoV-2 infections in Tyrol. Since then, new containment measures were introduced due to a ‘second wave’ of COVID-19 and no new AAV case was detected for the past 6 weeks suggesting an inverse correlation between the incidence of COVID-19 and AAV (see figure 1). With 17 AAV cases (de novo and relapsed) during the 6 months post-lockdown period between May and October 2020 the incidence rate per month is approximately 3.5 times higher compared with the previous 5 years (2.8 cases per month versus 0.8 cases per month, respectively). Although this clustering might be influenced in part by delayed diagnosis, other factors may contribute to this phenomenon as well.

One such phenomenon with an influence on the incidence of AAV is changes in the environment. The role of environmental factors related to catastrophic events such as the cargo aircraft disaster in Amsterdam 1992 or the earthquake in Kobe, Japan 19923 is being discussed to trigger autoimmune diseases such as AAV due to air pollution.1 Containment measures during the first lockdown led to a significant decrease of carbon dioxide levels as there was almost no air traffic in Tyrol and the car traffic was reduced by 70%. Another relevant factor is that containment and related measures increase psychological stress, which has an impact on the onset of autoimmune diseases.4 These associations still remain speculative and finally could not be verified.3-6

We appreciate that other centres share our experience that COVID-19 appears to affect the diagnosis of AAV. Further research is needed to verify if AAV incidences are truly rising or if post-lockdown clusters are merely a sign of deferred diagnoses.

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Contributors PG wrote the first draft of the manuscript. AK revised the manuscript.
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 consent for publication Obtained.
Ethics approval This study was approved by the Medical University Innsbruck (1215/2020).

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► Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/annrheumdis-2020-219696).

To cite Gauckler P, Kronbichler A. Ann Rheum Dis Epub ahead of print: [release include Day Month Year], doi:10.1136/annrheumdis-2020-219696

Received 19 December 2020

Figure 1 Timeline of incident AAV and COVID-19 cases between March and November 2020 in Tyrol, Austria. Incidence of AAV cases diagnosed at our centre (either initial manifestation or disease relapse) per month (blue boxes) are compared on a timeline with active positive SARS-CoV-2 cases in Tyrol, Austria (red curve/area). The underlying graph and respective numbers of active SARS-CoV-2 cases are provided by Amt Der Tiroler Landesregierung, Landes-Einsatzleitung/COVID-19 Dashboard and modified in accordance with ‘Land Tirol—Landes-Einsatzzitung Corona’. AAV, ANCA-associated vasculitis; ANCA; anti-neutrophil cytoplasmic antibody; AT, Austria.
Correspondence response

Accepted 21 December 2020

http://dx.doi.org/10.1136/annrheumdis-2020-219467

Ann Rheum Dis 2021;0:1–2. doi:10.1136/annrheumdis-2020-219696

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