

Letter from Austria

The last few years confronted the healthcare system in Austria, as in many countries in the rest of the world, with the greatest healthcare challenge of our generation. More than 2 years after the first confirmed case in Austria (25 February 2020), the current record (7 May 2022) shows 4,306,509 confirmed SARS-CoV-2 cases and 19,950 confirmed deaths associated with SARS-CoV-2 infection.¹ Up to today, more than 18 million vaccination doses were administered in Austria, and 4,966,697 persons are currently fully vaccinated (three doses), which is 55.3% of the total population.²

Austria might have been a central point for the spread of the virus within the early stages of the pandemic in Europe. Several clusters in Iceland, Norway, Denmark and Germany can be traced back to the popular Austrian ski resort of Ischgl.³ Several factors are likely to have favoured this rapid outbreak. Ischgl is a small village in the Austrian Alps with a population of 1564 permanent residents. In winter, however, the village transforms into a ski paradise with more than 22,000 beds for tourists and almost half a million visitors from over 20 different countries each year (Figure 1).⁴ Consequently, there is close contact of numerous people from different regions of Europe within a limited area, which might provide an optimal setting for the rapid spread of the virus. Furthermore, critical voices claim that current knowledge on SARS-CoV-2 and the pandemic would lead to a more rapid lockdown of the affected area today, in order to prevent an uncontrolled spread of the virus throughout Europe by travellers returning from Ischgl.³ However, very little was known about the characteristics of the SARS-CoV-2 at that time, and authorities in many regions were facing difficulties with COVID management. Simultaneously, the same pattern of sudden COVID-19 outbreaks could be observed in many popular tourist areas all over Europe.

In Austria itself, the pandemic brought hospitals to the edge of their capacity limit several times, despite an above-average number of hospital beds per inhabitant compared to the rest of Europe.⁵ Austria went through a series of lockdowns, some with severe exit restrictions, which were undoubtedly essential for the epidemiological control of the pandemic, but might have put an unintentional burden on other parts of the healthcare system.

Especially during the first lockdowns in spring and autumn 2020, hospital facilities were largely switched to emergency mode. In addition to the direct impact of SARS-

CoV-2 infections on morbidity and mortality in Austria, it is now increasingly apparent that collateral damage in non-infectious healthcare areas has occurred. As an example, we would like to point out trends in the treatment of acute coronary syndromes in Austria, where there is now substantial evidence on the impact of the pandemic. Data from a large percutaneous coronary intervention (PCI) centre in Innsbruck, Tyrol, show that at the time of major restrictions in Austria, there was a significant impact on the treatment of patients with acute ST-elevation myocardial infarction, in particular an increase of the total ischaemia time. Due to this delay of prompt revascularization by acute PCI, the subsequent infarct characterization by cardiac MRI showed a significant change in infarct morphology compared with pre-pandemic data. There were increases in infarct size and the proportion of microvascular occlusions, intramyocardial haemorrhage and worsening of functional outcome by means of left ventricular ejection fraction and strain analyses.⁶ From previous data, it is known that these parameters are important for the short- and long-term prognosis of patients after ST-elevation myocardial infarction, hence this is a clear sign of collateral damage.

Early experimental work⁷ led to the development of the hypothesis that the entry of SARS-CoV-2 into human cells depends on angiotensin-converting enzyme 2, which can be mediated by inhibitors of the renin-angiotensin system (RAS). To address this question, the randomized, controlled, open-label ACEI-COVID trial was conducted at 35 centres in Austria and Germany. Compared to two other randomized trials on this topic, ACEI-COVID enrolled much older patients. Discontinuation of RAS inhibition in COVID-19 had no significant effect on the maximum severity of COVID-19, but may improve recovery from disease.⁸ Long-term data suggest an overall neutral effect of RAS inhibition on COVID-19 recovery and post-acute sequelae of COVID-19.⁹

In summary, Austria has come through the acute phases of the pandemic to date reasonably well, due to its healthcare system which is well developed by international standards. Nevertheless, increasing data from various medical specialties indicate a high number of patients who have suffered indirect damage from the pandemic. The consequences of this could be a generally worsened prognosis for patients, as well as a massive burden on the health care and



FIGURE 1 Flims Spitz Mountain ski area near Ischgl, Austria. Source: Image by Hans Braxmeier from Pixabay (<https://pixabay.com/photos/flimspitz-mountain-ski-area-ischgl-356478/>)

social security system in Austria. However, the exact damage will ultimately only be assessed over the course of the next few years and decades.

KEYWORDS

Austria, collateral damage, COVID-19

CONFLICT OF INTEREST

None declared.

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