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Abstracts

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Univ.-Prof. Dr. Daniel Scherr

fatigue and cardiopulmonary abnormalities, impaired lung function, reduced GLS and/or diastolic dysfunction were significantly more prevalent in patients presenting with exertional dyspnea. In summary, only mild impairments of cardiopulmonary function could be identified. However, approximately one fifth of all patients showed post infectious changes in chest CT, which do not appear to be functional, and several suspected post infectious changes in cardiac MRI such as myo- and pericarditis in a few cases as well as an accumulation of pericardial effusions.

2-4

Evolution of electrophysiology interventions in Austria 2016–2021: Effect of lockdowns during the COVID-19 pandemic

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Introduction: Catheter ablation is an established interventional therapeutic option for a variety of supraventricular and ventricular arrhythmias. Therefore, number of ablations performed annually increase annually. Additionally, success rates constantly improve in left- and right-atrial- and ventricular arrhythmias. In 2015 we initiated an Austrian Ablation Registry and analyzed the development of procedures during the COVID-19 pandemic based on input from multiple Austrian ablation centers.

Methods: The number and type of electrophysiological interventions if the Austrian Ablation Registry 2016–2021 were analyzed as monthly and weekly totals. In particular, the impact of lockdowns with imposed restrictions on elective procedures in April and November 2020 was addressed.

Results: A total of 17,030 catheter ablation records were entered in Austria between 2016 and 2021. Indications for ablation were 19.6 % AVNRT, 5.2 % WPW, 14.2 % VH flutter, 28.5 % paroxysmal and 11.7 % persistent VH fibrillation, 8.1 % atrial and AV nodal ablations, and 6.9 % ventricular tachycardia (VT). The total number of ablations increased steadily from approximately 122 per month in January 2016 to 321 in June 2021, with seasonal fluctuations. The largest absolute increases were seen in procedures for paroxysmal atrial fibrillation (AF) from 11–29 per month. During the two lockdowns due to the COVID-19 pandemic, there were significant decreases in ablations in April 2020 (251–79) and November 2020 (from 300–210). Ablations for ventricular tachycardia were not affected by these changes. However, the number of procedures per year did not decrease significantly due to national lockdowns by reason of COVID-pandemic.

Conclusion: Since 2016, a steady increase in ablation procedures has been registered in Austria. Pronounced increase was observed in left atrial catheter ablations (paroxysmal and persistent AF), but also in ablations of VT. During the COVID-19 pandemic, the 2 major lockdowns resulted in transient reductions in ablation numbers, but the total number of procedures remained stable in 2020 and 2021.

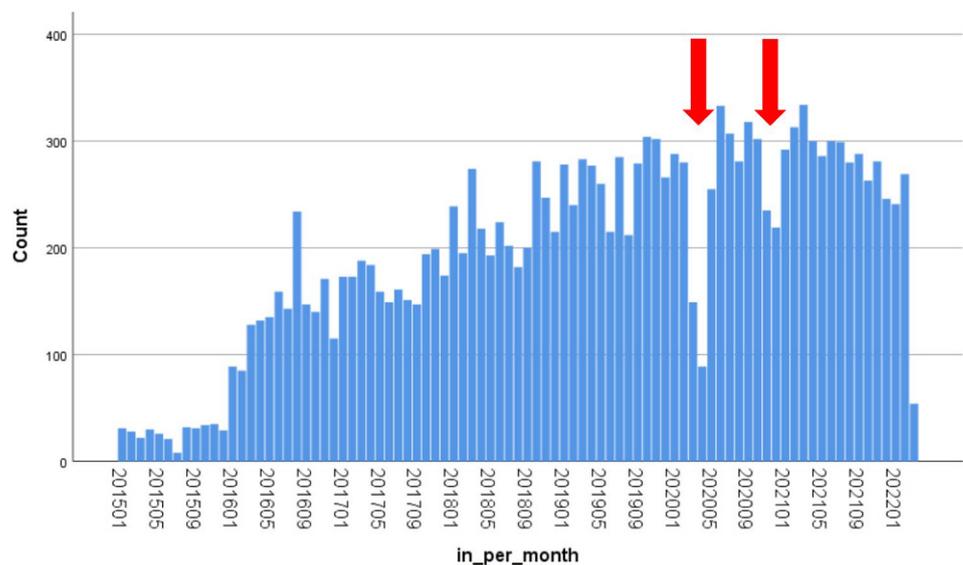


Fig. 1 | 2-4

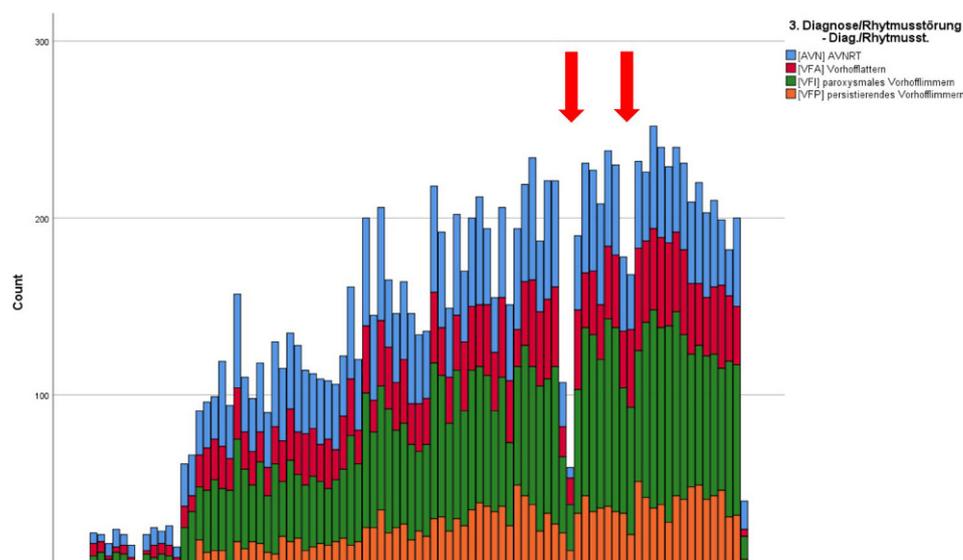


Fig. 2 | 2-4

2-5

Subjective pain perception and anxiety in patients with acute myocardial infarction during COVID-19

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Introduction: Patients often experience the acute phase of a myocardial infarction as a stressful, traumatic, and life-threatening experience, that leads to overall mental distress and severe anxiety [1]. To date, few data has been published on the association between acute myocardial infarction (AMI) related severe anxiety and myocardial infarction related perceived pain. However, previous study results suggest that AMI related anxiety might be associated with the severity of myocardial infarction related perceived pain. Not only acute cardiovascular diseases, but also threatening infectious diseases, are often associated with the development of increased anxiety, panic and phobic fears. This is particularly the case during the current COVID-19 pandemic. Studies have already shown that the COVID-19 pandemic leads not only to higher stress levels, but also to increased anxiety symptoms in the general population [2]. Thus, pre-existing severe COVID-19 related anxiety and pre-existing trait anxiety may further increase stress levels, making AMI more vulnerable to overwhelming myocardial infarction related anxiety, which might further intensify myocardial infarction related pain perception.

Methods: The aim of the study was to investigate the impact of trait anxiety and severe fear of COVID-19 on the perception of pain during the acute event of myocardial infarction. Therefore, differences in myocardial infarction related pain perception should be related not only to acute myocardial infarction related anxiety, but also to pre-existing trait anxiety and to the burden of the COVID-19 pandemic. Patients who experienced low levels of pain at the AMI were compared with those who experienced high levels of pain, regarding differences in state and trait anxiety, as well as in fears of COVID-19. For this, the visual analog scale (VAS) pain scale was used to measure remem-

bered pain intensity in the acute phase of the AMI. Based on the VAS pain scale the participants were divided into low and high AMI related pain groups using the sample's median. The State-Trait-Anxiety Inventory (STAI) was used to assess AMI-related state anxiety as well as pre-existing trait anxiety. Furthermore, health-related questions about COVID-19 were asked to assess the severity of fear of COVID-19.

Results: 130 patients were assessed for mood and anxiety symptoms after admission to the hospital due to AMI. STAI-Trait anxiety scores of AMI patients who experienced more pain were significantly higher than those who experienced the AMI with less pain (t-Test for independent samples: $t(111) = -2.621$, $p = 0.01$). However, there were no significant differences in state anxiety scores when differences in pain were considered (t-Test for independent samples: $t(109) = -0.592$, $p = 0.56$). Furthermore, the statistical analyses revealed significant differences in fears of COVID-19. AMI patients who experienced less pain during AMI showed higher COVID-19 related anxiety scores compared to those who experienced higher pain (t-Test for independent samples: $t(111) = 2.146$, $p = 0.03$). The results indicate significant differences in pre-existing trait anxiety, as well as in fear of COVID-19 when patients experience different levels of pain during the AMI. Patients with higher pain at the time of AMI showed higher pre-existing trait anxiety, but less fear of COVID-19. There were no significantly different state anxiety scores in AMI patients.

Conclusion: In cause of the bidirectional relationship between pain and anxiety it seems even more exciting to discuss the connections in more detail. Our data shows a relationship between increased trait anxiety and increased severity of perceived pain, which is in line with other publications. Higher pain scores are associated with lower COVID-19 anxiety levels. This may support the hypothesis that patients with high COVID-19 related fear are more likely to avoid a hospital even in the acute setting and therefore classify pain as less severe. Another explanation could be that although pre-existing trait anxiety increases pain perception in principle, a severe stress situation caused by fear of COVID-19 could possibly induce so-called stress-induced analgesia. This causes pain to be dampened and one does not perceive it to the normal extent. It has already been demonstrated in borderline patients that in a state of high tension, which (borderline) patients frequently experience as well as extremely unpleasant, pain sensitivity is additionally reduced. Future studies should therefore look more