Impact of COVID-19 pandemics on the incidence and mortality in Takotsubo syndrome: a report from Swedish Coronary Angiography and Angioplasty Registry

E. Omerovic1, T. Gudmundsson3, B. Redfors1, O. Angeras1, P. Petursson1, A. Rawshani1, O. Frobert2, J. Alfredsson3, C. Ekenbeck4, L. Henareh5, K. Skoglund1, C. Ljungman1, M. Mohammad6, T. Jernberg4, D. Erlinge6

1Sahlgrenska University Hospital, Gothenburg, Sweden
2Örebro University, Faculty of Health, Dept of Cardiology, Örebro, Sweden
3Linköping University Hospital, Linköping, Sweden
4Danderyd University Hospital, Dept of Cardiology, Stockholm, Sweden
5Karolinska University Hospital, Dept of Cardiology, Stockholm, Sweden
6Skane University Hospital, Lund, Sweden

Funding Acknowledgements: Type of funding sources: Public grant(s) – National budget only. Main funding source(s): The Swedish Heart and Lung Foundation, the Swedish Research Council, the Swedish state under the agreement between the Swedish government and the county councils (the ALF-agreement)

Background: The COVID-19 pandemic resulted in severe psychological, social, and economic stress. Countries applied different anti-pandemic strategies that substantially impacted citizens’ psychosocial stress and health. Takotsubo syndrome (TS) is frequently triggered by emotional stress. Previous studies from the USA have reported a severalfold increase in TS incidence during pandemics.

Purpose: To determine the incidence and outcomes of TS in Sweden before (2015-March 2020) and during (April 2020-December 2022) the pandemic.

Methods: We assessed the incidence rate ratio (IRR) for all patients with TS referred for coronary angiography in Sweden using the nationwide Swedish Coronary Angiography and Angioplasty Registry. Incidence rate ratios (IRRs) before and during the pandemic were calculated with Poisson regression adjusted for age and sex. We evaluated mortality with multivariable Cox proportional hazards regression, which accounted for clustering of patients within hospitals. The following variables were used for adjustment: age, sex, diabetes, smoking status, hypertension, hyperlipidemia, previous myocardial infarction, and Killip class.

Results: We identified 3,180 patients (2,128 [76.0%] women) hospitalized with TS during the study period; 2,189 (69%) pre-pandemic and 991 (31%) during the pandemic. The average age was 68.3 ± 11.2 years. The median follow-up time was 1250 days (IQR 562-1995). The crude all-cause mortality rate was 2.57% at 30 days and 15.5% after long-term follow-up. The incidence of TS was 11% lower during the pandemic compared with the pre-pandemic period (IRR 0.90, 95% CI 0.83-0.98, P=0.009, Fig. 1). We found no difference in 30-day mortality (adjusted HR 1.12, 95% CI 0.69-1.78, P=0.642) or long-term mortality (adjusted HR 0.96, 95% CI 0.73-1.28, P=0.816) among patients with TS between the pre-pandemic and pandemic periods. When only data after 2016 are used, we found no difference in TS incidence (IRR 1.00, 95% CI 0.92-1.08, P=1.00).

Conclusions: In this observational study, the incidence of TS was lower during than before the pandemic but mortality was unchanged. The lower incidence of TS could be related to the specific anti-pandemic strategies applied at the national level in Sweden.