analysis, with a median of 28.2 ng/ml (inter quartile range: 20.8 ng/ml). The multivariate adjusted time dependent cox model resulted in a HR of 1.02, with p<0.001 for sST2.

Conclusion: sST2 is predictive for all-cause mortality in patients on LVAD support. Therefore, a closer follow-up may be recommended in patients with high sST2 measures. In addition, further research is warranted into the mechanisms of elevated sST2 in LVAD patients and possible targeted interventions to improve prognosis.

(644)

Prognostic Impact of Implantable Cardioverter Defibrillators in Patients with Continuous Flow Left Ventricular Assist Devices

J. Pausch,[1] *J. Mersmann,*[1] *O. Bhadra,*[2] *M. Barten,*[2] *H. Reichenpurner,*[2] *and A. Bernhardt.*[2] [1]*Department of Cardiovascular Surgery, University Heart and Vascular Center Hamburg, Hamburg, Germany; and the* [2]*University Heart and Vascular Center Hamburg, Hamburg, Germany.*

Purpose: Preventative implantation of implantable cardioverter defibrillators (ICD) improves survival of symptomatic heart failure (HF) patients with reduced left ventricular ejection fraction. Nevertheless, the prognostic impact of ICD therapy in continuous flow left ventricular assist device (LVAD) recipients remains controversial.

Methods: 162 consecutive HF patients underwent LVAD implantation at our institution between 2010 and 2019. All patients were evaluated according to the presence (**n=94, ICD-group**) or absence (**n=68, Control-group**) of ICDs prior to LVAD implantation. Apart from clinical baseline and follow-up parameters, adverse events related to ICD therapy and overall survival rates were retrospectively analyzed.

Results: Predominantly male patients (87.0%) with a median age of 57 (48.8-64.0) years were mainly treated with the Medtronic HVAD device (87.0%). Ischemic cardiomyopathy (60.3% vs. 38.3%, p=0.007) and severe HF symptoms (e.g., NYHA-class IV 85.5% vs. 59.6%, p=0.001) were more prevalent within the *Control-group*. Furthermore, the preoperative use of short-term circulatory support devices (e.g., IABP, ECMO, Impella) was higher within the *Control-group* (54.4% vs. 13.8%, p <0.001). Nevertheless, baseline severity of LV and RV dysfunction (LVEF 20%, TAPSE 15mm; p=0.87) was similar. Apart from an increased rate of temporary RVAD implantation within the *Control-group* (45.6% vs. 17.0%; p<0.001), procedural characteristics and 30-day mortality rates were comparable. Furthermore, overall-survival during a median follow-up of 14 (3.0-36.5) months was similar within both study-groups (35.1% *ICD-group* vs. 33.8% *Control-group*; p=0.46). During the first 2 years after LVAD implantation 49 ICD-related adverse events occurred within the *ICD-group*. Thereof, lead-dysfunction occurred in 18 patients and unplanned ICD-reintervention in 10 patients. Furthermore, in 16 patients adequate, but awake shocks occurred, whereas inadequate shocks occurred in 5 patients.

Conclusion: ICD therapy in LVAD recipients was not associated with a survival benefit or reduced morbidity after LVAD implantation. Furthermore, in the majority of LVAD recipients ICD-related adverse events occurred during follow-up. A randomized controlled trial is essential to elucidate the role of ICD therapy in LVAD recipients.

(645)

Independent and Combined Effects of Age and COVID on Patient Outcomes

Y. Ravi,[1] *T.I. Raines,*[2] *L. Copeland,*[3] *S. Zaver,*[4] *H. Zaver,*[4] *M. Vila,*[5] *M. Pacific,*[5] *C. Sai-Sudhakar,*[6] *and C. Calderia.*[5] [1]*University of Connecticut, Farmington, CT;* [2]*College of Medicine, University of Tennessee Health Science Center, Memphis, TN;* [3]*VA Central Western Massachusetts Healthcare System, Leeds, MA;* [4]*University of Tennessee Health Science Center, Memphis, TN;* [5]*Largo Medical Center, Largo, FL; and the* [6]*University of Connecticut, Farmington, TN.*

Purpose: To evaluate the independent effect and interactive effect of age and positive Covid-19 status on patient survival and number of days spent on ECMO.

Methods: Single center data was gathered for patient's currently receiving ECMO treatment. The main effect and interaction effect of patients' age and COVID status was evaluated to investigate the impact of these factors on patient outcomes of discharged deceased and days on ECMO. A logistic regression model of 204 patients was used to evaluate the outcome of discharged deceased, and a Poisson regression model of 129 patients was used to evaluate the outcome of patient days spent on ECMO.

Results: In the logistic regression on discharged deceased adjusting for COVID status (n=204), age was associated with higher odds of death (OR=1.05 per year older, CI95 1.03-1.07). COVID was strongly associated with mortality (OR=4.81, CI95 2.46-9.43). Incorporating an interaction between age and COVID status, being discharged deceased was significantly associated with older age but COVID status and the interaction between COVID and age were not significant predictors of mortality. In the Poisson regression on days on ECMO (n=129), main effects of both age and COVID were noted. In the test of the interaction of age by COVID status, the interaction was also significant as were both main effects.

Conclusion: Both age and positive COVID status were found to be independent risk factors for increased patient mortality, however only age was associated with increased patient mortality when interaction between age and COVID was incorporated. Conversely, older patients with and without COVID exhibited decreased days on ECMO, whereas COVID was associated with a significant increase in days on ECMO.

Outcome: Discharged deceased (n=204)			
Model 1: main effects	**Odds Ratio**	**95% CI**	**Pr**
Age	1.05	1.03–1.07	<.0001
COVID positive	4.81	2.46–9.43	<.0001
Model 2: with interaction			
Age	1.04	1.02–1.07	0.002
COVID positive	2.15	0.22–21.17	0.512
Interaction: age x COVID	1.02	0.97–1.06	0.474

Outcome: Days on ECMO (n=129)			
Model 1: main effects	**Incident Rate Ratio**	**95% CI**	**Pr**
Age	0.98	0.98-0.99	<.0001
COVID positive	3.24	2.91-3.60	<.0001
Model 2: with interaction			
Age	0.99	0.98-0.99	<.0001
COVID positive	4.81	3.27-7.06	<.0001
Interaction: age x COVID	0.99	0.99-1.00	0.036

(646)

Outcomes of Pediatric Patients Supported with Ventricular Assist Devices

H. Fu,[1] *H. Chou,*[2] *S. Huang,*[2] *and Y. Chen.*[2] [1]*Cardiovascular Surgery, National Taiwan University Hospital Hsin-Chu Branch, Hsin-Chu, Taiwan; and the* [2]*Cardiovascular Surgery, National Taiwan University Hospital, Taipei, Taiwan.*

Purpose: There has been a remarkable increase in the number of pediatric ventricular assist devices (VAD) implanted over the past decade. Asian pediatric heart centers had not participated in the multicenter registries of the Western countries. This article aimed to report the outcomes of pediatric VAD in our institution from the Asia-Pacific region.

Methods: Prospectively registered VAD database was reviewed. Data of patients younger than 18 years at the time of VAD implantation were retrieved. The study group enrolled all pediatric patients who underwent VAD implantation between January 2008 and July 2021.

Results: There were 33 patients with diagnosis of acute fulminant myocarditis (N = 9), congenital heart disease (N = 5), dilated cardiomyopathy (N = 16), restrictive cardiomyopathy (N = 2) and chronic rejection with graft failure (N = 1). Paracorporeal continuous-flow pump was the most frequently implanted (N = 27). Most of the devices were