Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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5%, respectively. The most common types of AEs concomitant with a final outcome were {Death, Other SAE}, {Device Malfunction and/or Pump Thrombosis, Explant: Exchange}, and {Death, Neurological Dysfunction} with support values of 3.6%, 2.9%, and 2.6%, respectively. (See stars in Fig.2).

Conclusion: This analysis revealed a great diversity of combinations of post-LVAD AEs. The most common basket of concomitant events {Bleeding, Other SAE} was only 10% of the 8,603 total baskets (855 count). Unfortunately, Other SAE is very common in the INTERMACS database and not very informative to clinicians. The most common basket that did not include Other SAE, was {Bleeding, Infection} which comprised 5% of the total baskets.

1003

Risk of Stroke in Patients with Left Ventricular Assist Device Who Had Myocardial Recovery
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Purpose: The risk factors and incidence rates of stroke after implantation of left ventricular assist devices (LVAD) are well established. Little is known about the factors associated with stroke after LVAD explantation in patients who have had a myocardial recovery.

Methods: A single center retrospective study conducted between 2014-2019 for patients with myocardial recovery and subsequent LVAD explantation. We studied their demographics, clinical & laboratory data, echocardiographic, and invasive hemodynamic data to explore any possible associative factors predictive of stroke in the future.

Results: A total of 17 patients were identified with myocardial recovery while having an LVAD in place. Group 1 with no stroke (15 patients) and group 2 with stroke (2 patients). The mean age of patient at explant was 52.2 years in group 1 and 51.3 years for group 2, while mean duration of LVAD was 14.8 months for group 1 vs. 18.5 months for group 2. Majority of patients were women (59%) and main cause of heart failure was non ischemic cardiomyopathy (88%). There were 10 HeartMate 2 devices (HM 2), 3 HeartMate 3 (HM 3) devices, and 4 HeartWare (HVAD) Ventricular Assist Devices. There was no statistical difference in term of risk factors (DM, HTN, CAD, arrhythmia, CKD, smoking) between the two groups. However patients who had stroke had a trend of subtherapeutic INR and upreting LDH with infection of the retained pump.

In term of echo data, patient in group 2 had more evidence of RV dysfunction and abnormal inflow cannula position (figure 1).

Conclusion: Traditional risk factors e.g. subtherapeutic INR and prothrombotic states (like infection) along with echocardiographic features e.g. abnormal inflow cannula position and degree of RV dysfunction are among the main reasons for stroke in patients with myocardial recovery while having an LVAD in place.

1004

Clinical Characteristics and Outcomes of Extracorporeal Membrane Oxygenation Support in COVID-19: Retrospective Study of Single Center Experience
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Purpose: The use of extracorporeal membrane oxygenation (ECMO) support is increasingly used in the management of COVID-19-related acute respiratory distress syndrome (ARDS). The effect of ECMO for patients with severe ARDS in the context of COVID-19 is unclear. This study is to summarize the clinical features, and outcomes of patients with severe ARDS due to COVID-19 treated with ECMO. We analyzed the incidence of morbidity including ischemic/hemorrhagic stroke, gastrointestinal bleeding, pump malfunction, oxygenator dysfunction, infection during VV ECMO. We also compared COVID ECMO patients to non COVID-19 ECMO patients.

Methods: This is a retrospective review of an institutional ECMO database. We included consecutive patients from January 2015 through July 2020. 138 patients (mean age, 47.0 ± 14.4 y) with respiratory failure who underwent VV ECMO implantation were included in this study. Patients were stratified into two cohorts: those with COVID-19 or non COVID-19.

Results: Patients with COVID-19 had higher body mass index (33.4 ± 5.9 vs 28.8 ± 8.9, p<0.01), also had lower albumin level (2.7 ± 0.5 vs 3.1 ± 0.7, p<0.01). Patients with COVID-19 demonstrated not significantly lower survival rates (p=0.16). There was also no significant difference between 2 groups in incidence of acute kidney injury (p=0.17), dialysis (p=0.82), tracheostomy, (p=0.22), neurological dysfunction (p=0.19), gastrointestinal bleeding (p=0.42), oxygenator dysfunction (p=0.37), and sepsis (p=0.75). However, ECMO support days were significantly longer in COVID ECMO patients. (29.0 ± 27.5 vs 15.9 ± 19.6 days, p<0.01).

Conclusion: These findings suggest that COVID related ARDS was not associated with a higher postoperative mortality rate than non COVID related ARDS patients, even though support days of ECMO was longer in those groups. ECMO should be considered for patients developing ARDS despite optimised care.

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A Case Series of Black and Hispanic COVID-19 Patients Treated with ECMO
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Purpose: Extracorporeal Membrane Oxygenation (ECMO) has been utilized as salvage therapy in patients with acute respiratory distress syndrome (ARDS) secondary to COVID-19. We aim to present our experience with ECMO in a community hospital for minority patients with COVID-19.

Methods: This is a retrospective analysis of all SARS-CoV2 infected patients who developed ARDS and received ECMO at a tertiary cardiovascular care center between March and August 2020. Patient demographics, data pre- and on-ECMO, hemodynamics, and ventilation parameters were collected. Primary outcome of interest was mortality. Secondary outcomes were length of stay, bleeding requiring transfusion, coagulopathies, infections, and procedural-related complications.

Results: We identified 10 COVID-19 patients with ARDS treated with ECMO. The mean age was 45 years and 70% were male. The racial composition of the patients consisted of Blacks (30%) and Hispanics (70%). Comorbidities included hypertension (40%), diabetes mellitus (50%), and hyperlipidemia (20%). Eight patients were treated with VV-ECMO, and the remaining patients with VA-ECMO. Hospital-acquired infections including ventilator-associated pneumonia and bacteremia were reported in 50% and 30%, respectively. Hemorrhage requiring transfusion was reported in all 10 patients, with 60% of patients having bleeding from a gastrointestinal source. 70% of patients developed thrombocytopenia, and 20% developed a clot within the ECMO circuit. Coagulation disorders reported, included heparin-induced thrombocytopenia (20%), deep vein thrombosis (30%), and pulmonary embolism (20%). 90% of patients died, and 1 patient was discharged to a long-term acute care hospital (See Table 1 for outcomes).

Conclusion: Despite using ECMO as rescue therapy, mortality among COVID-19 patients who developed ARDS and received ECMO at a tertiary cardiovascular care center between March and August 2020. Patient demographics, data pre- and on-ECMO, hemodynamics, and ventilation parameters were collected. Primary outcome of interest was mortality. Secondary outcomes were length of stay, bleeding requiring transfusion, coagulopathies, infections, and procedural-related complications.

Purpose: To assess the performance of several post cardiac surgery vasoplegia definitions in a large, single center continuous-flow left ventricular assist device (CF-LVAD) cohort.

Methods: A single center first-time, CF-LVAD dataset was utilized for this analysis (n=505). Vasoparalytic drips and hemodynamics were collected at the following time points in all subjects with available data: pre-op, immediate post-op, and on post-operative days 1, 2, and 3 (n=325). For each of the four vasoplegia definitions tested (table), infusion requirements for each definition were converted to an equivalent vasoactive inotropes score (VIS). VIS were then calculated for each patient, at each time point, and utilized to determine if vasoplegia criteria were met. To test the association between vasoplegia and post LVAD mortality, logistic regression (60-day death as outcome) and cox regression analyses were performed. To assess for clinical predictors of post-operative vasoplegia, a multivariable logistic regression was performed.

Results: Among the vasoplegia definitions tested, the Patarroyo definition had the strongest association with death at 60 days (OR 3.55, 95% CI 1.48-8.52, p<0.005). This definition was met by 14% of cohort subjects with available data. Variables associated with the development of vasoplegia using this definition in the multivariate models included higher creatinine, longer cardiopulmonary bypass time, prior cardiothoracic surgery and lower INTERMACS profile. Two of the vasoplegia definitions tested (Levin, Unified) had little utility to classify vasoplegia due to the requirement for mean arterial pressure to be less than 50 mm Hg.

Conclusion: Among the post-cardiothoracic surgery vasoplegia definitions tested, the Patarroyo was the most highly associated with early post LVAD mortality in this dataset. Risk factors for vasoplegia were similar to previous published reports. Use of VIS simplified the process of determining vasoplegia infusion criteria.

Table 1  Outcomes

| Outcomes                  | ALL PATIENTS (N=10) | HISPANICS (N=7) | BLACKS (N=3) |
|---------------------------|---------------------|-----------------|--------------|
| Length of Stay, days      | 35 ± 16             | 26 ± 13         | 48 ± 11      |
| Pneumothorax              | 5 (50%)             | 3 (43%)         | 2 (67%)      |
| Hemorrhage requiring transfusion | 10 (100%)         | 7 (100%)        | 3 (100%)     |
| Heparin-induced thrombocytopenia | 2 (20%)          | 0 (0%)          | 2 (67%)      |
| Deep venous thrombosis    | 3 (30%)             | 1 (14%)         | 2 (67%)      |
| Pulmonary embolism        | 2 (20%)             | 0 (0%)          | 2 (67%)      |
| Ventilator-associated pneumonia | 5 (50%)          | 3 (43%)         | 2 (67%)      |
| Bacteremia                | 3 (30%)             | 2 (29%)         | 1 (33%)      |
| Stroke                    | 1 (10%)             | 0 (0%)          | 1 (33%)      |
| Cardiac arrest            | 6 (60%)             | 4 (57%)         | 2 (67%)      |

1006 Risk Factors and Clinical Significance of Vasoplegia after LVAD Implantation

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Purpose: To assess the performance of several post cardiac surgery vasoplegia definitions in a large, single center continuous-flow left ventricular assist device (CF-LVAD) cohort.

Methods: A single center first-time, CF-LVAD dataset was utilized for this analysis (n=505). Vasoparalytic drips and hemodynamics were collected at the following time points in all subjects with available data: pre-op, immediate post-op, and on post-operative days 1, 2, and 3 (n=325). For each of the four vasoplegia definitions tested (table), infusion requirements for each definition were converted to an equivalent vasoactive inotropes score (VIS). VIS were then calculated for each patient, at each time point, and utilized to determine if vasoplegia criteria were met. To test the association between vasoplegia and post LVAD mortality, logistic regression (60-day death as outcome) and cox regression analyses were performed. To assess for clinical predictors of post-operative vasoplegia, a multivariable logistic regression was performed.

Results: Among the vasoplegia definitions tested, the Patarroyo definition had the strongest association with death at 60 days (OR 3.55, 95% CI 1.48-8.52, p<0.005). This definition was met by 14% of cohort subjects with available data. Variables associated with the development of vasoplegia using this definition in the multivariate models included higher creatinine, longer cardiopulmonary bypass time, prior cardiothoracic surgery and lower INTERMACS profile. Two of the vasoplegia definitions tested (Levin, Unified) had little utility to classify vasoplegia due to the requirement for mean arterial pressure to be less than 50 mm Hg.

Conclusion: Among the post-cardiothoracic surgery vasoplegia definitions tested, the Patarroyo was the most highly associated with early post LVAD mortality in this dataset. Risk factors for vasoplegia were similar to previous published reports. Use of VIS simplified the process of determining vasoplegia infusion criteria.

1007 Corticosteroids as Adjunct Therapy for Refractory Vasoplegia Following Left Ventricular Assist Device Implantation

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Purpose: Post-operative vasoplegia following left ventricular assist device (LVAD) implantation carries high morbidity and mortality. Although clinical studies have shown some benefit in steroid administration in certain post-operative populations, no study has evaluated such in patients with refractory vasoplegia following LVAD implantation.

Methods: This retrospective case series evaluated the use of intravenous corticosteroids among patients with refractory vasoplegia following LVAD implantation. All patients necessitated at least 75% maximum dose of ephinephrine and norepinephrine with increasing requirements within a 48-hour period following surgical implantation to maintain stable hemodynamic profiles. Pre- and post- steroid parameters, including hemodynamics and vasoactive requirements, were compared.

Results: Among six patients included in this cohort, the average age was 54 years, and most had a non-ischemic cardiomyopathy (n=5, 83%). Patients were either INTERMACS 1 (n=2, 33%) or 2 (n=4, 68%) and did not require pressor support at time of surgical implantation. Vasoactive requirements were substantially lower within 24 hours following steroid administration compared to requirements 24 hours prior, including the use of ephinephrine (5.5 vs 15.5 mcg/min, p<0.01), norepinephrine (4.2 vs...