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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.

real RTPCR (24 hrs within HT)upon admission. All pts were looked after by experienced staff who tested negative for SARS-CoV-2, wearing PPE, working in isolation, single room care and visitors were not admitted.

Results: No recipient or donor tested positive for SARS-CoV-2 at any stage in their care. 5 (8%) pts died, >30 days after the procedure, of multiorgan failure; all 5 pts were in INTERMACS II at the time of OHT. All patients were managed with our standard immunosuppression therapy consisting of mycofenolante mofetil and steroids in addition to calcineurin inhibitor (tacrolimus). According to recent results 25 patients (40%) had allograft rejection of ISHLT grade 3a detected by routine endomyocardial biopsies within first 3 months. The highdose steroids therapy was involved and positive response (ISHLT grade 0) was observed. 56 pts had a hospital stay of 30 d or less, 7 pts more than 30 d. Follow up visits were conducted using telemedicine unless it was absolutely necessary to see the pt in hospital. Also, we raised the threshold for endomyocardial biopsies by relying on clinical judgement and stable allograft function.

Conclusion: By creating a robust system of care based on team work, early testing and retesting of patients and staff for SARSCoV2, the use of proper PPE's, adequate isolation and subsequent minimization of contact with pts, we were able to demonstrate that HT in the era of COVID19 pandemic can be performed safely.

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Natriuretic Peptide Levels and Clinical Outcomes among Patients Hospitalized with COVID-19 Infection

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Purpose: There is increasing evidence of adverse cardiovascular morbidity associated with SARS-CoV-2 (COVID-19). Pro-B-type natriuretic peptide (proBNP) is a biomarker of myocardial stress associated with outcomes in various respiratory and cardiac diseases. We hypothesized that proBNP level would be associated with mortality and clinical outcomes in hospitalized COVID-19 patients.

Methods: We performed a retrospective analysis of hospitalized COVID-19 patients (n=1232) using adjusted logistic and linear regression to assess the association of admission proBNP (analyzed by both categorical cutoff >125 pg/mL and continuous log transformed proBNP) with clinical outcomes. Covariates included age, sex, race, body mass index (BMI), hypertension, coronary artery disease (CAD), diabetes, smoking history, and chronic kidney disease stage (Model 1), with Troponin I added in Model 2. We performed survival analysis by a multivariate Cox proportional hazard model, incorporating log transformed proBNP. We additionally treated BMI, a strong potential confounder of both proBNP levels and COVID-19 outcomes, as an ordinal variable ordered across tertiles.

Results: Patients were mean age 62.9±17.6, 53.8% male, and 35.9% Black. Preadmission comorbidities were hypertension (57.1%), diabetes (31.6%), CAD (9.0%) and heart failure (HF, 10.6%). In Model 1 and 2, higher proBNP level was significantly associated with death, new HF, length of stay, ICU duration and need for ventilation among hospitalized COVID-19 patients. This significance persisted after ordinal compression of BMI across tertiles. The adjusted hazard ratio of death for log[proBNP] was 1.56 (95% CI: 1.23-1.97; P<0.0001).

Conclusion: Using a relatively large and racially diverse hospitalized COVID-19 patient cohort, we find that proBNP is associated with adverse clinical outcomes, including mortality and new HF in COVID-19. Further prospective investigation is warranted on the utility of proBNP for clinical prognostication in COVID-19.

	proBNP (>125 pg/mL)		Log transformed proBNP	
	OR or β (95% CI)	P-Value	OR or β (95% CI)	P-Value
Unadjusted				
Death (n=1230)	6.5 (4.1-10.4)	<0.0001	2.4 (2.0-2.9)	<0.0001
New HF (n=1100)	3.3 (1.7-6.4)	<0.0001	2.2 (1.7-2.0)	<0.0001
Ventilator Need (n=1230)	2.4 (1.8-3.3)	<0.0001	1.5 (1.3-1.7)	<0.0001
Length of Stay (n=1230)	146.4 (104.5-188.4)	<0.0001	81.3 (59.3-103.4)	<0.0001
ICU Duration (n=1230)	66.0 (36.4-95.4)	<0.0001	28.7 (13.1-44.2)	0.0003
Ventilator Duration (n=280)	-28.2 (-147.9-91.6)	0.64	-8.8 (-69.5-51.8)	0.77
Model 1				
Death (n=1059)	3.4 (1.6-4.8)	<0.0001	2.1 (1.6-2.7)	<0.0001
New HF (n=957)	1.7 (1.2-6.3)	0.013	3.0 (2.0-4.4)	<0.0001
Ventilator Need (n=1059)	3.4 (2.2-4.8)	<0.0001	1.9 (1.5-2.4)	<0.0001
Length of Stay (n=1059)	111.6 (62.5-160.7)	<0.0001	63.5 (33.7-93.2)	<0.0001
ICU Duration (n=1069)	58.7 (21.4-96.0)	0.002	34.0 (11.4-56.5)	0.003
Ventilator Duration (n=219)	-31.9 (-160.3-96.4)	0.62	-55.3 (-128.4-17.8)	0.14
Model 2				
Death (n=636)	3.4 (4.6-7.3)	0.002	2.0 (1.4-3.0)	<0.0001
New HF (n=578)	1.7 (0.7-4.1)	<0.0001	2.5 (1.5-4.0)	<0.0001
Ventilator Need (n=636)	3.4 (2.1-5.5)	<0.0001	2.1 (1.6-2.8)	<0.0001
Length of Stay (n=636)	104.6 (33.3-175.9)	0.004	77.1 (31.5-122.8)	0.001
ICU Duration (n=636)	50.0 (-2.7-102.6)	0.06	44.8 (11.1-78.4)	0.009
Ventilator Duration (n=150)	-67.8 (-238.8-103.3)	0.44	-53.8 (-157.4-49.9)	0.31

N indicates patients analyzed for indicated model and specified outcome. proBNP: pro-B-type natriuretic peptide, HF: heart failure, ICU: intensive-care unit. Model #1: Adjusted for age, sex, race, BMI, hypertension, coronary artery disease, diabetes mellitus, smoking history, and stage of chronic kidney disease. Model #2: Model #1 adjustments with Troponin I. OR: Odds Ratio. β: Regression coefficient. Logistic regression performed for Death, New HF and Ventilator Need. Linear regression performed for Length of Stay, ICU Duration and Ventilator Duration.

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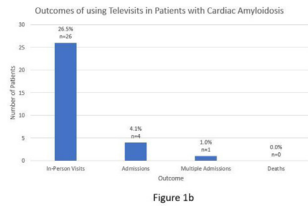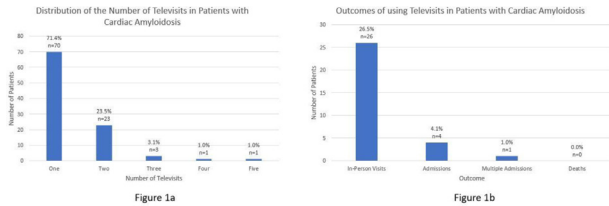### The Utility of Televisits in Patients with Cardiac Amyloidosis during the COVID-19 Pandemic

S. Slomovich, J.A. Fried, K.J. Clerkin, J. Raikhelkar, M.S. Maurer, A.J. Kim, G. Sayer, N. Uriel and J.M. Griffin Medicine, Columbia University Irving Medical Center, New York, NY.

Purpose: In the era of COVID-19, the televisit has become a critical means of providing healthcare for patients unable to attend in-person visits. Transthyretin and light chain amyloidosis are complex diseases, that require frequent and close follow up. The aim of this study was to assess the utility and effectiveness of televisit encounters for patients with cardiac amyloidosis (CA) during the COVID-19 pandemic.

Methods: This was a prospective cohort study of consecutive patients with CA who were evaluated by televisit between March and May, 2020, at a large academic medical center. Patient demographics, baseline medications and details of televisit encounters were collected from electronic medical records. Patients were followed for 3 months from their first televisit for medication changes, in-person clinic visits, hospital admissions, and mortality.

Results: Ninety-eight patients with CA were included. Mean age was 76.5±9.1 yrs and 79 were male (80.6%). The number of televisits per patient is shown in Figure 1a. Over 3-months follow-up, 26 patients (26.5%) were seen for either an in-person clinic visit or right heart catheterization. There were 7 emergency room visits, of which 4 (4.1%) resulted in hospital admission, 1 patient (1.0%) had multiple admissions and no patient died (Figure 1b). None of the hospital admissions occurred within two weeks of a televisit. Hospital admissions were due to heart failure exacerbation, sepsis, acute kidney injury and dehydration secondary to diarrhea. During follow-up, 23 patients (23.5%) had medication adjustments, most commonly changes in diuretic (56.5%) and mineralocorticoid receptor antagonist (56.5%) doses. Two patients were newly initiated on tafamidis, for treatment of transthyretin CA.

Conclusion: The use of televisits for the management of patients with CA is feasible, and the low admission rate indicates that televisits are a safe and effective way to manage CA patients in the outpatient setting.

Distribution of the Number of Televisits in Patients with Cardiac Amyloidosis

Figure 1a

Outcomes of using Televisits in Patients with Cardiac Amyloidosis

Figure 1b

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Incidence and Outcomes of COVID-19 Infection in Heart Transplant Recipients: The USC Experience

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Purpose: Heart transplant recipients may be at increased risk for infection and adverse outcomes from infection with coronavirus (Covid-19). Management of these patients is complex, with no standard of care. We sought to describe the incidence and outcomes of coronavirus infection in this unique population.

Methods: Retrospective review of 225 heart transplant patients at a large academic medical center identified 8 patients with laboratory confirmed Covid-19 infection. Laboratory and clinical data were collected from our institution as well as other local hospitals patients had been treated at. Outcomes were followed from March 15, 2020 to October 15, 2020. All data was deidentified.

Results: In a cohort of 225 heart transplant patients, 8 patients were identified after testing positive for Covid-19 infection. The mean and median age of patients was 49.8 and 42 years respectively. 63% of patients were male, and 37% of patients were female. The median and mean time from transplant to diagnosis was 4.1 and 4.5 years. The rate of infection for recently transplanted patients was 11%. Two patients (25%) had atherosclerosis, three patients (37.5%) had diabetes, and five patients (62.5%) had hypertension. Four of the patients (50%) were asymptomatic, 3 patients (37.5%) had acute hypoxic respiratory failure, and 1 patient (12.5%) had dyspnea not requiring oxygen at time of presentation. Four patients (50%) were admitted for treatment. Two patients were treated with remdesvir, one patient with tocilizumab, and one patient with lenrolimab. Immunosuppressive regimens were altered in five patients with decreased mycophenolate mofetil dosing, two patients with decreased tacrolimus dosing, and one patient with decreased cyclosporine dosing. Two patients (25%) had evidence of graft injury with mean AlloSure (donor derived cell free DNA) of 0.6%, the remainder were within normal limits. Overall our patient experience resulted in zero mortality, and all 4 admitted patients were discharged home safely.

Conclusion: In a single center case series 8 patients were identified with Covid-19 infection. 25% of the patients demonstrated evidence of graft injury, and nearly every patient had their immunosuppressive regimen decreased with 100% survival to date. Further investigation is needed to determine long term outcomes and ideal therapeutic regimen for Covid-19 in this unique population.

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Heart Failure Care Delivery in the COVID19 Era: The Patient's Perspective

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Purpose: The SARS-CoV-2 outbreak changed healthcare and healthcare delivery around the world. Hospital systems saw a dramatic decline in patient volumes both in the inpatient and outpatient settings. Surveying our center's heart failure (HF) clinic population, we aimed to better understand our patients' perception of COVID19, their fears, and care delivery preferences in this new era.

Methods: Consecutive patients with chronic HF presenting to our clinic either in person or virtually were approached to complete a ten question Likert scale survey (Table 1). Acutely decompensated patients and heart transplant recipients were excluded. The survey was anonymous and voluntary.

Results: 109 patients completed the survey. The average age was 62 ± 14 years, 73 (67%) were male and 64 (59%) had a diagnosis of HF with reduced ejection fraction. Overall, our patients were afraid of contracting COVID19 and getting sicker given their underlying cardiac condition but were not hesitant to call the clinic or come to the emergency department with worsening HF symptoms. Patients responded that virtual appointments are less preferable and less effective than in-person visits. Although the difference did not reach statistical significance, female patients and those with HF with preserved ejection fraction were more concerned.

Conclusion: Overall, patients with HF are concerned about their increased risk of contracting COVID19. However, they are not likely to avoid healthcare contact and preferred in-person over virtual visits.

Table 1. Survey questions and responses. 1=strongly disagree, 2=disagree, 3=neither disagree nor agree, 4=agree, 5=strongly agree

	Median	Mode	Standard Deviation
I am scared to contract COVID19	4	4	1.3
I worry that my heart condition makes me more likely to get/contract COVID19	3	4	1.3
I worry that my heart condition makes me more likely to get very sick from COVID19	4	4	1.3
I am less likely to call my cardiology clinic for any reason since COVID19	2	2	0.9
I am less likely to call my cardiology team with symptoms of heart failure since COVID19	2	1	1.0
I am less likely to present to clinic with symptoms of heart failure since COVID19	2	1	0.9
I am less likely to present to the ER with symptoms of heart failure since COVID19	2	1	1.0
I am worried to get admitted to the hospital because of COVID19	2	2	1.3
I prefer virtual cardiology clinic visits over in-person visits	2	2	1.1
Virtual visits are as effective as in-person visits for addressing my heart failure concern	2	2	1.0

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Predictors of Mortality in Patients with Cardiac Arrest Treated with ECPR

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Purpose: Cardiac arrest portends a poor prognosis with survival rates of 10% for out-of hospital cardiac arrest (OHCA) and 25% for in-hospital cardiac arrest (IHCA). Despite resuscitation efforts, only a small proportion of patients survive. Extracorporeal cardiopulmonary resuscitation (eCPR) has the potential to restore circulation in an attempt to improve survival. However, it is essential to balance the potential benefit of eCPR against its futility. This systematic review and meta-analysis aimed to identify factors associated with higher short-term mortality post-eCPR.

Methods: We searched electronic databases for full text or abstracts of observational studies or post-hoc analysis of randomized controlled trials reporting factors associated with short-term mortality after eCPR using multivariable analysis. We included studies on adults aged 18 years or older with IHCA or OHCA, published after 2009. Studies that included post-cardiotomy, septic shock, respiratory failure or refractory cardiogenic shock were excluded. We performed a meta-analysis of the effect of factors associated with