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.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

dilatation; 2 among them mandated additional cautery usage. 2 cases underwent polypectomy, further 4 subjects needed bronchial stent placement. 5 (21%) recipients were discharged with Tracheostomy while rest were successfully decannulated in the ward.

Conclusion: We observed a high incidence of airway complications in post lung transplant for COVID-19 ARDS related fibrosis. Early detection, timely management and serial follow up is of paramount importance in this subset of patients.

(291)

CARE Score on Chest Radiograph at Diagnosis Predicts Early and Late Outcomes Among Lung Transplant Patients with COVID-19

Q.M. Halverson, K. Batra, L.D. Mahan, M.R. Mohanka, A. Lawrence, J. Joerns, S. Bollineni, V. Kaza, I. Timofte, C.D. Kershaw, L.S. Terada, F. Torres and A. Banga. University of Texas Southwestern, Dallas, TX.

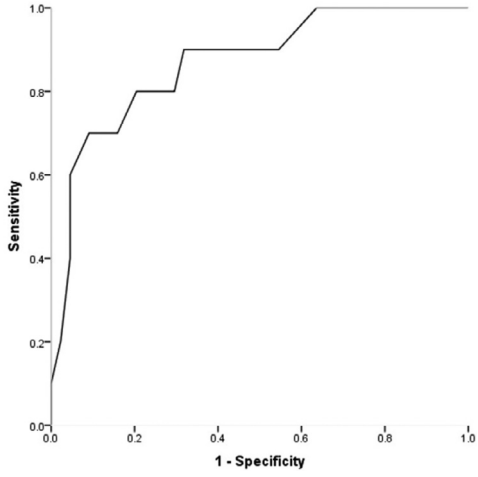
Purpose: To assess the ability of an objective radiographic scoring system to predict outcomes among lung transplant (LT) patients with Coronavirus disease 2019 (COVID-19).

Methods: We included all LT patients diagnosed with COVID-19 during a one-year period (March 2020 to Feb 2021; n=54; median age: 60, 20-73 years; M:F 37:17) in our program. Patient characteristics and laboratory values during the acute illness were reviewed. Chest radiographs at time of COVID-19 diagnosis were scored by extent of ground-glass opacity and consolidation using the CARE score (0-18 for each lung). The CARE score was calculated using only the allograft in single LT and the average of both lungs in bilateral LT. Primary outcome was six-month survival after COVID-19. Hospital complications and one-month survival were secondary outcomes.

Results: A minority of patients had a clear allograft (CARE=0, n=12, 22.2%) at presentation. The median score was 2 (interquartile range 0.5-4.625), indicating mild abnormalities. Demographics, underlying diagnosis, comorbidities, symptoms, and spirometry changes were not associated with the baseline CARE score. Baseline CARE score >5 was strongly associated with development of respiratory failure (91.7% vs 35.7%; OR, 95% CI: 19.8, 2.3-168.7; p=0.001), ICU admission (p<0.001), need for ventilator support (p<0.001), and one-month mortality (41.7% vs 2.4%; OR, 95% CI: 29.4, 2.96-333.3; p=0.001). Overall six-month survival was 81.5%. The CARE score was significantly higher among non-survivors (7.7±4.1 vs 2.2±2.7; p=0.002). Patients with a CARE score>5 at diagnosis were significantly less likely to survive at six-month follow-up (41.7%. vs 92.3%; p<0.001). The CARE score had an excellent area under the curve (86.8%, 74.4%-99.2%; p<0.001) on the Receiver operating characteristic curve for predicting six-month survival after COVID-19.

Conclusion: The CARE score at time of COVID-19 diagnosis provides useful prognostic information among patients with LT.

Figure



(292)

Autoantibodies and Severity of COVID-19 in Lung Transplant Recipients

V. Kaza,[1] L. Mahan,[2] A. Banga,[3] M. Mohanka,[4] S. Bollineni,[2] A. Lawrence,[2] J. Joerns,[2] F. Torres,[2] I. Timofte,[2] C. Lacelle,[2] R. La Hoz,[2] J. Galli,[2] J. Kozlitina,[2] C. Zhu,[2] and Q. Li.[2] [1]UT SW Med Ctr 5353 Harry Hines Blvd, Coppell, TX; [2]UTSW, Dallas, TX; [3]UT Southwestern Med Ctr, 5353 Harry Hines Blvd, TX; and the [4]UTSW, UTSW, Dallas, TX.

Purpose: COVID-19 in lung transplant recipients (LTR) results in case-fatality rate of 10-46%. Disease severity is variable and it is unclear why certain groups of patients develop severe disease. Recent report suggests that 10% of patients with life threatening COVID-19 have auto-antibodies (AAbs) against type 1 interferons (IFN-1) but very few describe their impact in LTR. We therefore sought to identify AAbs in LTR with COVID-19 by using a customized proteomic microarray (CPM) bearing 120 antigens.

Methods: We retrieved samples collected for routine care within 3 months prior to and after diagnosis of COVID-19 of 13 LTR. IgA and IgG AAbs were analyzed using CPM. Predefined antibody score (ab-score) was used for downstream analysis. COVID severity was defined as per center for disease control guidelines. Changes in ab-scores from pre- to post-COVID were assessed via Wilcoxon signed-rank tests; association between continuous variables and AAbs using Spearman's correlation. Linear mixed-effects models were used to analyze the association between changes in AAbs pre- to post-COVID and COVID severity.

Results: Among 13 LTR COVID severity was moderate (n=6), severe (n=4) and critical (n=3). Levels of 76 IgA antibodies and 9 IgG antibodies increased between pre and post covid samples (FDR adjusted p<0.05). In exploratory analysis, antibody response over time for one IgA antibody (IgA Nucleosome) and four IgG AAbs correlated with higher COVID severity (unadjusted p<0.05). IFN lambda is an antiviral cytokine and AAbs to it correlated with COVID severity (p=0.031). Such AAbs are shown to block the ability to block SARS-CoV-2 in vitro. No significant differences were observed in antibody response in the groups who were alive (n=9) versus deceased (n=4) and three inflammatory markers, ferritin, D dimer and absolute lymphocyte count.

Conclusion: Change in antibody response of five AAbs correlated with COVID severity in a small group of LTR. The results of this study are considered exploratory and need further validation.