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## Complex Clinical Cases

### NOSOCOMIAL COVID-19 INFECTION IN AN LVAD PATIENT

Poster Contributions

Monday, May 17, 2021, 10:45 a.m.-11:30 a.m.

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Session Title: Complex Clinical Cases: MD/PhD 7

Abstract Category: MD/PhD: Coronavirus Disease (COVID-19)

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**Background:** COVID-19 infection in an LVAD patients presents a unique challenge due to the patient's altered immunity. We describe a case of nosocomial COVID-19 infection in an LVAD patient and its management.

**Case:** 78 year old male with HF<sub>r</sub>EF with HeartMate II LVAD was admitted for evaluation of elevated LDH of 878 u/L and an undetectable haptoglobin. Patient received tPA for pump thrombosis and later underwent pump exchange via the subcostal approach. One week post surgery he developed a fever of 101.6 F. Blood Cultures yielded no growth, urine analysis was unremarkable. Chest x-ray showed right lobe opacity. A COVID-19 nasopharyngeal swab done was positive. At the time of diagnosis of viral pneumonia, white blood cell count was 3.13 K/uL, ferritin was 1655 ng/mL and procalcitonin was 0.13 ng/mL. Patient required 2 liters supplemental oxygen. Infectious disease team was consulted for management of COVID -19 Pneumonia, and the patient was started on dexamethasone for 10 days, and remdesivir for 5 days. Patient made a complete recovery and was discharged home. At the time of discharge his ferritin was 703 ng/mL and LDH was 255 u/L.

**Decision-making:** Patients with LVAD have an altered immunological response, with loss of Th1 cytokine producing CD4 T-cells and increased apoptosis of CD4 and CD8 T cells leading to defects in cellular immunity and an increased severity of infections. In addition, thrombosis is a common challenge faced in LVAD patients that can be exacerbated by COVID-19. Data is scant regarding the outcome of LVAD patients with COVID-19. Timely use of dexamethasone and remdesivir, and ensuring appropriate anticoagulation is the basis of management of mild-to-moderate COVID-19 infection. The unpredictability of COVID-19 infection in this functionally immuno-compromised population requires stringent precautionary measures to prevent undue exposure of LVAD patients from asymptomatic carriers.

**Conclusion:** Adherence to infection control practices, limiting visitors and using electronic means of communication with families can prevent nosocomial COVID-19 infection in hospitalized LVAD patients. Timely diagnosis and involvement of infectious disease team may prevent a fulminant course.