

The Ups and Downs of COVID-19: 25-60% in Two Days

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Introduction

Viral myocarditis is well known; however, the use of Remdesivir and steroids has been controversial in COVID-19 patients. We report a case of good clinical response with the use of Remdesivir and steroids in a patient with COVID-19 related myocarditis.

Presentation

- 36-year-old male presented one month prior found to be positive for COVID-19.
- Then involved in a motor vehicle accident one month later.
- Following motor vehicle collision, he started to experience fever, diarrhea, muscles aches, and dyspnea
- COVID-19 was repeated and was positive via nasal PCR. Noted to be hypotensive and tachycardic. Ultimately, admitted due to concern for COVID-19 induced myocarditis.
- Labs on admission (day 1):
 - Echocardiogram: EF of 25-30%
 - D-dimer 1.80 mg/L
 - ESR 63 mm/Hr
 - CRP 26.2 mg/dL
 - BNP 1180 pg/mL
 - Procal 1.18 ng/mL
 - AST 48 U/L, and ALT 182 U/L
 - Troponins 0.17 ng/mL

Hospital Course

- Hospital day 2, febrile at 37.9 Celsius, hypotensive, tachycardic, thrombocytopenic.
 - Concern for sepsis.
 - IV ceftriaxone and azithromycin, stopped after 2 days.
- Hospital day 3, remained in heart failure, febrile, and hypotensive despite antibiotics.
 - IV Remdesivir started resumed for 5 days and Dexamethasone started, discontinued after 1 day.
 - Coxsackie A IgG positive but negative IgM.
- Hospital day 4, no longer tachycardic or hypotensive. IV Dexamethasone discontinued.
 - Echocardiogram showed an EF of 55-60%, good study, normal global left ventricular contractility.
- Hospital day 5, significantly improve.
 - CRP and ESR elevated.
- Hospital Day 6, continued to improve.
- Hospital day 7, greatly improved, discharged.
 - ESR and CRP elevated.
 - Echocardiogram: EF 60-65%, good study, good contractility of left ventricle.
- Follow up 1 month after hospitalization:
 - Echocardiogram: EF 55-60%, normal left ventricle wall motion.
 - Returned to work without complications.

Discussion

- We report a case of good clinical response with the use of Remdesivir and steroids in a patient with COVID-19 related myocarditis.
- Literature review:
 - Reduced EF common in COVID-19 patients, mechanism is unknown.
 - Remdesivir inhibits RNA Polymerase.
 - No studies have shown Remdesivir's effects on improvements in cardiac function.
- Possible Takotsubo Cardiomyopathy; however, in a study conducted by Shaikh et al, median recovery time on average was 25 days with mean early recovery of 7.11 days.
- Treatment of COVID-19 myocarditis is debatable and more large-scale studies need to be conducted to determine Remdesivir's role in effectively treating COVID-19 myocarditis.
- This case shows good clinical response with the use of Remdesivir in a patient with COVID-19 myocarditis.

References

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