Abstract # 1118

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HURLEY MEDICAL CENTER

COVID-19 Therapeutics: Real-World Experience in Flint, Michigan (MI)

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SPARTANS WILL DISCOVER.

INTRODUCTION

- Data on the real-world effectiveness of Remdesivir (RDV) has yielded conflicting results.
- US Food and Drug Administration granted full approval for RDV on 10/22/20. On 11/20/20, the World Health Organization issued a conditional recommendation against its routine administration in hospitalized patients, regardless of disease severity.
- We aimed to examine the association between COVID-19 therapeutics and survival among the recipients.

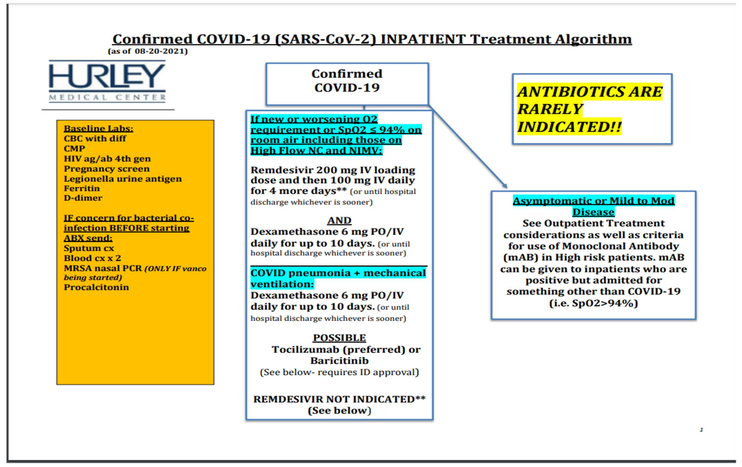
METHODS

- Design: Retrospective cohort study, conducted at Hurley Medical Center - a 443-bed inner city teaching hospital in Flint, MI, 03/2020 – 02/2022.
- Inclusion criteria: Adults (≥ 18 years (yrs) of age) with confirmed SARS-CoV-2 infection, admitted and discharged from our facility from 03/2020 through 02/2022.
- **Primary outcome: Mortality within 3 months from the positive test.**
- Statistical analysis: Mortality predictors were identified using logistic regression

RESULTS

- During the study period, overall crude 90-day mortality rate was 16% (269/1668).
- Supplemental oxygen was required by 1,213 patients and 378 needed ventilatory support.
- Early in the pandemic, 159/1668 patients received Hydroxychloroquine (HCQ).
- Based on institutional protocol, 51% (858/1668) of the patient received RDV (Figure 1).

Figure (Fig) 1. Institutional Protocol



Confirmed COVID-19 (SARS-CoV-2) INPATIENT Treatment Algorithm
(as of 08-20-2021)

HURLEY MEDICAL CENTER

Confirmed COVID-19

ANTIBIOTICS ARE RARELY INDICATED!!

Baseline Labs:
CBC with diff
CMP
HIV ag/ab 4th gen
Pregnancy screen
Legionella urine antigen
Ferritin
D-dimer

IF concern for bacterial co-infection BEFORE starting ABX send:
Sputum cx
Blood cx x 2
MRSA nasal PCR *(ONLY IF vanco being started)*
Procalcitonin

If new or worsening O2 requirement or SpO2 ≤ 94% on room air including those on High Flow NC and NIMV:
Remdesivir 200 mg IV loading dose and then 100 mg IV daily for 4 more days** (or until hospital discharge whichever is sooner)

AND
Dexamethasone 6 mg PO/IV daily for up to 10 days. (or until hospital discharge whichever is sooner)

COVID pneumonia + mechanical ventilation:
Dexamethasone 6 mg PO/IV daily for up to 10 days. (or until hospital discharge whichever is sooner)

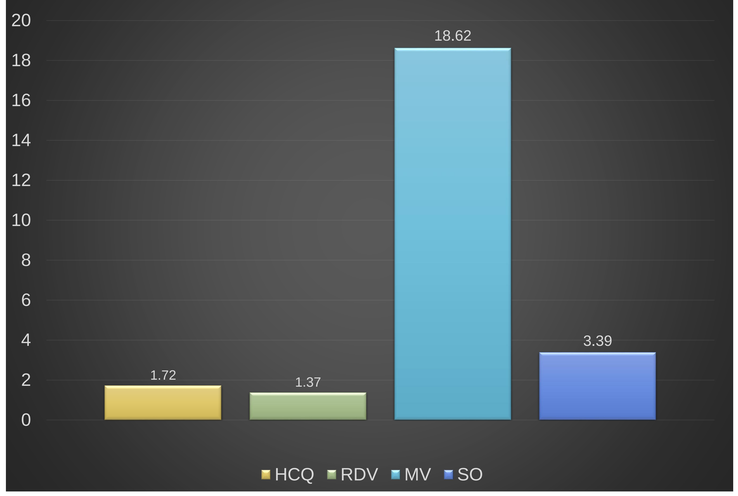
POSSIBLE
Tocilizumab (preferred) or Baricitinib
(See below- requires ID approval)

REMDESIVIR NOT INDICATED
(See below)

Asymptomatic or Mild to Mod Disease
See Outpatient Treatment considerations as well as criteria for use of Monoclonal Antibody (mAB) in High risk patients. mAB can be given to inpatients who are positive but admitted for something other than COVID-19 (i.e. SpO2>94%)

Remdesivir (polymerase inhibitor) ***In vitro evidence of activity against SARS-CoV-2*** ***FDA approved*** **Treatment Criteria:** ● Syndrome consistent with viral respiratory illness • SpO2 ≤94% on RA OR a • new or worsening oxygen requirement ● SARS-CoV-2 by PCR documented infection ● Hospitalized **Exclusion:** **Mechanical ventilation** **Asymptomatic infection** **No need for oxygen or oxygen saturation >94% on RA** **Symptoms >14 days** ***** Consult ID if concern regarding the need for Remdesivir in patients who fall into the Exclusion category***	**Duration: 5 days total** **Adult dosing:** 200 mg IV load, then 100 mg IV q24h **Pediatric dosing:** <40 kg: 5 mg/kg IV load, then 2.5 mg/kg q24h ≥40 kg: 200 mg IV load, then 100 mg IV q24h Daily LFTs are required while on Remdesivir **Use of Remdesivir in pregnant women and children <18 requires adult ID and Peds ID input respectively**	**A/E:** • Increased liver enzymes. • Also potential to have drug-drug interactions with medications metabolized through cytochrome system. Screen for drug interactions with 3A4 inhibitors. Remdesivir is a prodrug that requires CYP3A4 for conversion to active drug. **Caution:** • Avoid use with eGFR <30ml/min, unless potential benefits outweigh potential risks. **Contraindications:** • Hypersensitivity to remdesivir or any component of the formulation • ALT ≥ 5 x ULN

Fig 2. Mortality Risk (adjusted odds ratio)



RESULTS

- After adjusting for age, gender, race and Body Mass Index, HCQ was associated with increased risk of mortality (Odds ratio (OR) 1.72, 95% Confidence Interval (CI) 1.14 – 2.59, p-value 0.010) (Figure 2).
- Mortality in the RDV group was also noted to be higher (162/269) (adjusted OR for mortality 1.37, 95% CI 1.03 – 1.83, p-value 0.032).
- Supplemental oxygen (SO) use was associated with mortality regardless of RDV use (adjusted OR 3.39, 95% CI 2.15 – 5.36, p-value < 0.001).
- RDV showed no mortality benefit in the group requiring mechanical ventilation (MV) (adjusted OR 0.77, 95% CI 0.55 – 1.09, p-value 0.152) (adjusted OR for mortality with MV 18.62, 95% CI 13.02 – 26.63, p-value < 0.001)

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CONCLUSIONS

- This study adds to the growing evidence that more efficacious treatments against COVID-19 respiratory failure are needed once a patient is hospitalized and that antiviral therapies at this late stage may not have the desired effect.
- This study has several limitations including its retrospective nature and that the RDV group was likely sicker with higher disease severity. We also did not assess the effect of combination therapy such as RDV and steroids on mortality. A need for further studies remains.

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