# 274. CORTICOSTEROID USE IN SEVERELY HYPOXEMIC COVID-19 PATIENTS

Omar Rahman[1], Russell Trigonis[2], Mitchell Craft[3], Rachel Kruer[4], Emily Miller[5], Colin Terry[4], Sarah Persaud[2], Rajat Kapoor[5]

1 N/A, 2 Indiana University School of Medicine, Indianapolis, IN, 3 Indiana University Health Methodist Hospital, N/A, 4 Indiana University Health, Indianapolis, IN, 5 Indiana University Health Methodist Hospital, Indianapolis, IN

INTRODUCTION: Novel coronavirus disease 2019

(COVID-19) associated severe hypoxemic respiratory failure is mediated by severe inflammation that may be mitigated by administration of corticosteroids. Our aim was to evaluate pattern and effects of corticosteroid use in these patients during an initial surge of the pandemic.

METHODS: An observational study of COVID-19 patients between March 1 and April 27, 2020 was conducted

at a tertiary care academic hospital in Indianapolis, IN. Comparison of patients who received corticosteroids plus standard care to standard care only was done. Corticosteroid type, dose and timing of administration were analyzed. Outcome measures included number of patients requiring intubation, duration of mechanical ventilation, length of ICU stay and inpatient mortality. Descriptive statistics outlined the type, timing and duration of administration of corticosteroids during severe COVID-19. Clinical course and laboratory metrics were compared between patient cohorts.

RESULTS: 626 patients tested positive for severe respiratory syndrome coronavirus-2 RNA by PCR during the specified time period. 136 COVID-19 patients admitted to the ICU were included in the analysis, and 72 (53%) received corticosteroids. Groups had similar demographics: age (60.5 vs. 65; p=0.083), sex (47% male vs. 39% female; p=0.338) and comorbidities. Corticosteroid group had increased severity of illness: PaO2/FiO2 ratios (113 vs. 130; p=0 .014) and SOFA scores (8 vs. 5.5; p<0.001). There was no difference in overall mortality (21% vs. 30%; p=0.234) or proportion of patients intubated (78 vs. 64%; p=0.078). There was no mortality difference among intubated patients (27% vs. 15%; p=0.151) however, there were no deaths among patients who were not intubated and received corticosteroids (0% vs 57%; p <0.001). Administering corticosteroids early (within 48 hours vs. 2-7 days, vs >7 days) was associated with decrease in proportion of patients intubated (66% vs. 87% vs. 100%; p=0.045), ICU days (6 vs. 16 vs. 18; p<0.001), and ventilator days (3 vs. 12 vs. 14; p<0.001). Methylprednisolone was used in 45% of patients.

CONCLUSIONS: Early administration of corticosteroids in hypoxemic respiratory failure of COVID-19 improves survival in non-intubated patients, decreases ICU stay and may prevent intubation.

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Rahman, O., Trigonis, R., Craft, M., Kruer, R., Miller, E., Terry, C., ... & Kapoor, R. (2021). 274: Corticosteroid Use in Severely Hypoxemic COVID-19 Patients. Critical Care Medicine, 49(1), 124. https://doi.org/10.1097/01.ccm.0000726984.48127.c5