

with peak d-dimer level >5 mcg/mL, anticoagulation use was associated with lower mortality after controlling for the d-dimer level (OR 0.11, 95% CI 0.02–0.68, p=0.017) and this association remained significant after adjusting for age, sex, and hypertension (OR 0.11, 95% CI 0.01–0.86, p=0.035).

Conclusion: In hospitalized COVID-19 patients with a d-dimer level higher than 5 mcg/mL, anticoagulation use was independently associated with lower mortality.

Disclosures: All Authors: No reported disclosures

76. Effect of Early Administration of Systemic Corticosteroids on Outcomes in Patients with COVID-19 Pneumonia

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Session: O-14. COVID-19 Therapies

Background: Systemic corticosteroids (steroids) have been empirically used in acute respiratory distress syndrome, an entity also present in coronavirus disease 19 (COVID-19). Early steroids administration could accelerate resolution of symptoms and reduce intensive care unit (ICU) stay in these patients, but practice varies widely as evidence is scant.

Methods: We reviewed the records of 498 adults admitted to Stony Brook University Hospital, NY, from 3/1 to 4/15, 2020 with COVID-19 requiring high-flow O₂ (non-rebreather mask, Venturi mask with FiO₂ >50%, or high-flow nasal cannula). We excluded those (N=29) who received mechanical ventilation (MV) or died within 24h of admission. We followed patients until death or discharge. We compared outcomes between patients who received early steroids (i.e. prior to MV) and those who did not. We used adjusted Cox models to evaluate the composite of death or need for MV. We also evaluated healthcare resources utilization.

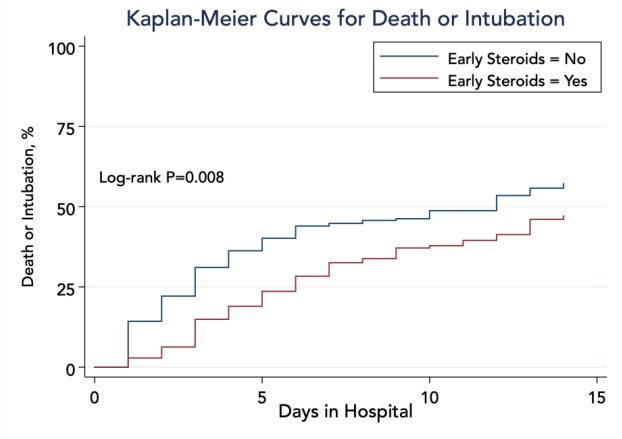
Results: Of 469 patients, 175 (37.3%) received steroids while on high flow O₂. **Table 1** summarizes the baseline characteristics. Patients who received steroids were more likely to have asthma, had slightly longer duration of symptoms, lower O₂ saturation, higher NT-proBNP and lower IL-6 levels at baseline. In total, 228 patients (48.6%) reached the composite endpoint (123 died and 105 received MV). By 7 days, 32.5% of patients who received steroids died or were intubated vs. 44.8% of those who did not (log-rank P=0.008), **Figure 1**. In models adjusted for race, age, sex, comorbidities, baseline O₂ saturation and procalcitonin, steroids reduced risk for death or MV by 44% (hazard ratio [HR] 0.56; 95%CI 0.42–0.76; P< 0.001). The effect was time-dependent with initial HR 0.34 (95%CI 0.21–0.56; P< 0.001) and daily attenuation by 10.2% (95%CI 1.7%–19.4%; P=0.017). Mortality at 7 and 14 days did not differ between groups (8.1% vs. 8.3% and 19.1% vs. 21.0%, respectively, log-rank P=0.75). Among discharged patients, length of hospital stay was longer, but ICU stay was shorter with steroids, **Table 2**.

Table 1: Patient Characteristics According to Use of Early Steroids

Table 1: Patient Characteristics According to Use of Early Steroids (N=469)

Characteristic	Received Early Steroids (N=175)	Did Not Receive Early Steroids (N=294)	P value
Age, years	62 (52 – 72)	61 (48 – 74)	0.493
Female	58 (33.1%)	108 (36.7%)	0.485
Race			
White	94 (53.7%)	155 (52.7%)	
Black	8 (4.6%)	23 (7.8%)	0.670
Asian	11 (6.3%)	18 (6.1%)	
Hispanic	56 (32.0%)	102 (34.7%)	0.226
Body mass index, kg/m ²	29.7 (26.5 – 34.4)	29.1 (26.0 – 33.5)	0.604
Duration of symptoms, days	7 (4 – 10)	6.5 (3 – 8)	0.020
O ₂ saturation, %	90 (85 – 93)	91 (88 – 93)	0.002
Temperature, °C	38 (37.4 – 38.9)	38.2 (37.5 – 39)	0.343
Hypertension	101 (57.7%)	164 (55.8%)	0.701
Diabetes	58 (33.2%)	97 (33.0%)	0.947
Coronary artery disease	27 (15.4%)	44 (15.0%)	0.895
Atrial fibrillation	18 (10.3%)	40 (13.6%)	0.314
Chronic lung disease	20 (11.4%)	29 (9.9%)	0.640
Chronic kidney disease	14 (8.0%)	34 (11.6%)	0.270
Congestive heart failure	20 (11.4%)	25 (8.5%)	0.332
Asthma	21 (12.0%)	15 (5.1%)	0.011
Immunocompromised	12 (6.9%)	23 (7.8%)	0.856
Statins	64 (36.6%)	116 (39.5%)	0.557
ACE inhibitors	29 (16.6%)	45 (15.3%)	0.794
Angiotensin receptor blockers	32 (18.3%)	41 (13.9%)	0.236
NT-proBNP, pg/mL	266 (84 – 1145)	161 (42 – 857)	0.043
Troponin, ng/mL	0.01 (0.01 – 0.01)	0.01 (0.01 – 0.01)	0.361
Creatine phosphokinase, IU/L	198 (81 – 459)	156 (74 – 364)	0.555
ESR, mm/h	53 (33 – 80)	57 (31 – 79)	0.663
C-reactive protein, mg/dL	12.6 (7.0 – 21.7)	11.3 (5.8 – 18.3)	0.053
D-dimer, ng/mL	379 (258 – 730)	347 (237 – 753)	0.307
Procalcitonin, ng/mL	0.24 (0.14 – 0.53)	0.2 (0.12 – 0.49)	0.265
Ferritin, ng/mL	963 (501 – 1530)	901 (472 – 1534)	0.607
Lactate dehydrogenase, IU/L	415 (330 – 553)	397 (295 – 528)	0.096
Interleukin-6, pg/mL	54.2 (19.0 – 106.7)	68.3 (35.8 – 113.9)	0.028
Lymphocyte count, K/uL	0.81 (0.57 – 1.07)	0.82 (0.55 – 1.15)	0.650
Creatinine, mg/dL	0.94 (0.75 – 1.26)	0.975 (0.77 – 1.31)	0.370
Alanine transaminase, IU/L	34 (20 – 60)	34 (21 – 53)	0.414
Aspartate aminotransferase, U/L	47 (33 – 76)	45 (31 – 64)	0.153
International normalized ratio	1.2 (1.1 – 1.3)	1.2 (1.1 – 1.3)	0.883
Corrected QT on ECG, ms	436 (419 – 457)	438 (418 – 461)	0.632

Values are N (%) or median (25th, 75th percentile). Methylprednisolone was the primary steroid agent used in 147 (84.0%) of patients, followed by hydrocortisone (N=12, 6.9%), prednisone (N=12, 6.9%), and dexamethasone (N=4, 2.3%). ACE: angiotensin converting enzyme; ESR: erythrocyte sedimentation rate; NT-proBNP: N-terminal pro-B-type natriuretic peptide



Healthcare Resources Utilization According to Use of Early Steroids Among Discharged Patients

Table 2: Healthcare Resources Utilization According to Use of Early Steroids Among Discharged Patients (N=328)

Outcome	Received Early Steroids (N=114)	Did Not Receive Early Steroids (N=214)	P value
Hospital length of stay, days	14 (10-20)	12 (8-19)	0.030
Admitted to ICU, N (%)	36 (31.2%)	76 (35.5%)	0.54
ICU length of stay, days	10 (4-14)	12 (7-22)	0.021
Mechanical ventilation, N (%)	21 (18.4%)	66 (30.8%)	0.018
Duration of intubation, days	9 (6-13)	11 (7-21)	0.34

Values are N (%) or median (25th, 75th percentile). ICU: intensive care unit

Conclusion: Early administration of steroids reduced primarily the need for MV in our high-risk COVID-19 patients, with shorter ICU utilization, at the expense of longer hospital stay. Further studies are needed to optimize the use of steroids in these patients.

Disclosures: All Authors: No reported disclosures

77. Long Term Care Facility Residents Hospitalized with COVID-19 Infection Present with Atypical Symptoms

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Session: O-15. COVID-19 What to be Aware of: Special and Vulnerable Populations

Background: Fever and cough are frequently reported in COVID-19 infections, although little is known about the subgroup of symptomatic patients who do not manifest these classic symptoms. We aimed to compare clinical manifestations and outcomes for hospitalized COVID-19 patients with typical vs. atypical presentations and identify risk factors for atypical COVID-19 presentations.

Methods: We conducted a retrospective cohort of all patients hospitalized with laboratory-confirmed COVID-19 infections during 3/13- 5/13/2020 at UW Health, a network of 3 acute-care hospitals in Midwest. We defined *atypical* cases as patients hospitalized for COVID-19 related reasons presenting without fever and cough and compared them in univariate analysis with patients manifesting *both* symptoms (controls). We identified independent risk factors for atypical COVID-19 presentations by logistic regression.

Results: Among the 163 patients hospitalized during the 60-day study frame, 39 (24%) had atypical presentations. Table 1 shows demographic, clinical manifestations, and outcomes of atypical vs. typical cases. On univariate analysis, atypical cases were more likely to be older, reside in a long-term-care facility (LTCF), have underlying diabetes mellitus, stroke, cardiac disease, and deny myalgias or dyspnea, despite having no significant difference in the prevalence of hypoxia or radiological lung infiltrates. Atypical cases also had a significantly higher Beta-Natriuretic Peptide and lower C-Reactive-Protein, although other inflammatory markers were not significantly different. They were less likely to be admitted to the ICU, and more likely to die within 30 days, as older patients with respiratory failure and multiple comorbidities opted for comfort measures and less aggressive care. On multivariate analysis, LTCF residence was the only independent predictor for atypical status (Table 2).