

Supplemental Section for **Hydroxychloroquine, Azithromycin and Methylprednisolone and
In Hospital Survival in Severe COVID-19 Pneumonia**

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Table S1. Baseline Demographics Disease Characteristics on Unmatched Population and Propensity Score Matched Population. (17)

Variable	Unmatched No methylprednisolone (N=645)	Unmatched Methylprednisolone (N=476)	P Value	Propensity score matched No methylprednisolone (N = 380)	Propensity Score matched Methylprednisolone (N = 379)	P Value
Age in years	64.00(53.00,79.00)	64.00(56.00,73.00)	0.6620	65.00(54.00,80.00)	64.00(55.00,74.00)	0.1129
Male	411(63.43)	219(46)	0.6079	238(62.6)	244 (64.21)	0.5175
Weight (kg)	81.20(68.70,90.72)	83.90(71.10,99.80)	0.0040	81.67(70.30,95.85)	83.90(71.45,99.80)	0.4270
BMI (kg/m ²)	28.18(24.83,31.65)	29.48(25.94,34.30)	<.0001	29.82(25.51,32.80)	29.69(25.82,34.31)	0.1912
White	336(51.85)	154(32.35)	0.6079	198(52)	193(51)	0.5085
Asian	45(6.94)	31(6.51)	0.6079	20(5.26)	28(7.4)	0.5085
Black	91(14.04)	47(9.87)	0.6079	57(15)	42(11.1)	0.5085
Other	154(23.77)	229(48.11)	0.6079	94(24.7)	96(25)	0.5085
Community	527(81.33)	250(52.52)	<.0001	309(81.3)	220(58)	<.0001
Academic	121(18.67)	174(36.55)	<.0001	74(19.4)	160(42)	<.0001
Nursing Home	125(19.38)	43(9.03)	<.0001	308(81.1)	340(89.7)	0.0002
Former/Current smoker	116(17.98)	96(20.17)	0.0377	77(20.3)	88(23)	0.2334
Never smoker	468(72.56)	276(57.98)	0.0377	280(73.7)	253(66)	0.2334
SOB	412(63.88)	334(70.17)	<.0001	249(65.5)	298(78.63)	<.0001
Cough	417(64.65)	301(63.24)	0.0327	244(64.2)	271(71.5)	0.0303
AMS	109(16.99)	46(9.66)	0.0058	63(16.6)	41(10.8)	0.0032
GI	149(23.1)	88(18.49)	0.4077	76(20)	81(21.37)	0.6545
Anosmia or Ageusia	10(1.55)	9(1.89)	0.4834	6(1.58)	9(2.4)	0.4445
Duration of Symptoms prior to admission	5.00(2.00,7.00)	5.00(3.00,7.00)	0.0165	5.00(2.00,7.00)	5.00(3.00,7.00)	0.0523
Diabetes	214(33.18)	157(32.98)	0.1888	144(37.9)	139(36.6)	0.8221
COPD	27(4.19)	30(6.3)	0.0506	20(5.26)	28(7.37)	0.2360
Asthma	40(6.22)	40(8.4)	0.0569	24(6.27)	37(9.76)	0.0832
Cancer	61(9.46)	49(10.29)	0.2594	43(11.3)	43(11.32)	1.0000
CAD	86(13.33)	67(14.08)	0.2839	50(13.15)	61(16)	0.2594
CVA	28(4.34)	15(3.15)	0.6336	18(4.71)	14(3.69)	0.5887
CHF	51(7.91)	32(6.72)	0.9071	18(4.71)	28(7.37)	1.0000
Arrhythmia	65(10.1)	38(7.98)	0.5967	41(10.79)	30(7.91)	0.2126
Chronic Kidney Disease	40(6.23)	33(6.93)	0.3249	28(7.36)	31(8.16)	0.6862
Rheumatologic Disease	15(2.33)	22(4.62)	0.0159	10(2.63)	19(5.01)	0.0909
qSOFA 0	375(58.14)	225(47.27)	0.2544	224(58.9)	222(58.5)	0.7647
qSOFA 1	199(30.85)	156(32.77)	0.2544	130(34.2)	130(34.3)	0.7647
qSOFA 2	51(7.9)	31(6.51)	0.2544	28(7.36)	26(6.86)	0.7647
qSOFA 3	4(0.64)	2(0.42)	0.2544	1(0.26)	2(0.53)	0.7647
O2 sat < 94%	305(47.3)	225(47.27)	0.0069	216(56.84)	218(57.5)	0.8265
Temperature	99.00(98.00,100.70)	99.30(98.00,100.80)	0.0476	98.80(97.70,100.40)	99.25(98.00,100.65)	0.0027
Heart Rate	95.00(82.00,108.00)	95.00(82.00,108.00)	0.0581	95.00(84.00,108.00)	97.00(86.00,108.00)	0.2467
Respiratory Rate	19.00(18.00,21.00)	20.00(18.00,22.00)	0.0097	19.00(18.00,22.00)	20.00(18.00,22.00)	0.2622
Nasal Cannula	227(35.19)	137(28.78)	0.0005	161(42.36)	132(35)	0.0045
Venti mask	4(.62)	3(0.63)	0.0005	2(.5)	3(0.8)	0.0045
High Flow	8(1.2)	15(3.15)	0.0005	6(1.6)	15(4)	0.0045
CPAP	1(0.15)	2(0.42)	0.0005	1(.26)	2(.5)	0.0045
BPAP	0(0.00)	2(0.42)	0.0005	0(0.00)	2(.5)	0.0045
Invasive Mechanical Ventilation	55(8.5)	138(28.99)	<.0001	35(9.2)	129(34)	<.0001
WBC	6.50(5.00,9.10)	6.50(5.10,9.50)	0.5947	6.60(5.10,9.20)	6.50(5.10,9.55)	0.8365
HGB	13.40(12.00,14.50)	13.50(12.20,14.80)	0.2190	13.40(12.20,14.50)	13.50(12.20,14.70)	0.5022

PLT	200.00(158.00,251.00)	186.00(147.00,251.00)	0.0596	203.00(161.00,259.00)	189.50(147.00,252.00)	0.0238
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ALC	0.90(0.60,1.20)	0.79(0.60,1.10)	0.0007	0.90(0.60,1.30)	0.80(0.60,1.10)	0.0004
IL6	11.50(5.00,34.00)	12.00(5.00,32.00)	0.6607	12.50(5.00,37.50)	12.00(5.00,31.50)	0.8044
CRP	10.91(5.20,20.79)	13.11(7.09,20.20)	0.0444	11.71(5.34,22.10)	13.40(7.10,20.34)	0.3187
D-Dimer	1.01(0.64,2.11)	0.98(0.61,1.89)	0.7909	1.01(0.65,2.07)	0.98(0.61,1.91)	0.8118
Ferritin	641.89(320.65,1453.60)	838.96(430.40,1569.80)	0.0044	727.45(331.61,1470.50)	853.21(444.90,1569.80)	0.0231
Creatinine	1.00(0.80,1.40)	1.01(0.80,1.33)	0.9379	1.01(0.80,1.49)	1.01(0.80,1.35)	0.2327
Troponin	0.03(0.01,0.30)	0.02(0.01,0.09)	0.0516	0.03(0.01,0.30)	0.02(0.01,0.09)	0.1355
BNP	103.70(29.85,701.30)	88.80(26.20,362.00)	0.1702	129.70(40.60,941.10)	85.25(25.60,339.35)	0.0141
Hydroxychloroquine	463(73.73)	333(69.96)	<.0001	270(71.1)	318(84)	<.0001
Azithromycin	438(71.78)	277(58.19)	0.2793	256(67.4)	264(70)	0.1672
Remdesivir	4(0.62)	63(13.24)	0.0061	3(0.78)	10(2.6)	0.0512
Tocilizumab	31(4.8)	11(2.31)	<.0001	14(3.68)	64(16.8)	<.0001
Convalescent Plasma	0(0.00)	4(0.84)	0.0002	0(0.00)	4(1)	0.0015
ECMO	1(0.17)	9(1.9)	0.0011	1(0.26)	9(2.4)	0.0104
Dialysis	19(2.95)	11(2.3)	0.8748	14(3.78)	11(2.9)	0.6853

HR = Hazard Ratio; CI = Confidence Interval; SOB = Shortness of Breath; AMS = Altered Mental Status; GI = Gastrointestinal Symptoms; PTA = Prior to admission; COPD = Chronic Obstructive Disease; CAD = Coronary Artery Disease; CVA = Cerebrovascular Accident; CHF = Congestive Heart Failure; LFTs = elevated liver function tests; qSOFA = Quick Sepsis Related Organ Failure Assessment; HCQ = Hydroxychloroquine; AZ = Azithromycin; MP = Methylprednisolone; HD MP = High Dose Methylprednisolone; LD MP = Low Dose Methylprednisolone; WBC = White Blood Cells; HGB = Hemoglobin; PLT = Platelet; ALC = Absolute Lymphocyte Count; ECMO = Extracorporeal Membrane Oxygenation

Figure S1. Plot of differences Methylprednisolone – No Methylprednisolone in hospitalized COVID-19 patients. The plot shows that the differences were very close to zero as were the Logit propensity scores. (17)

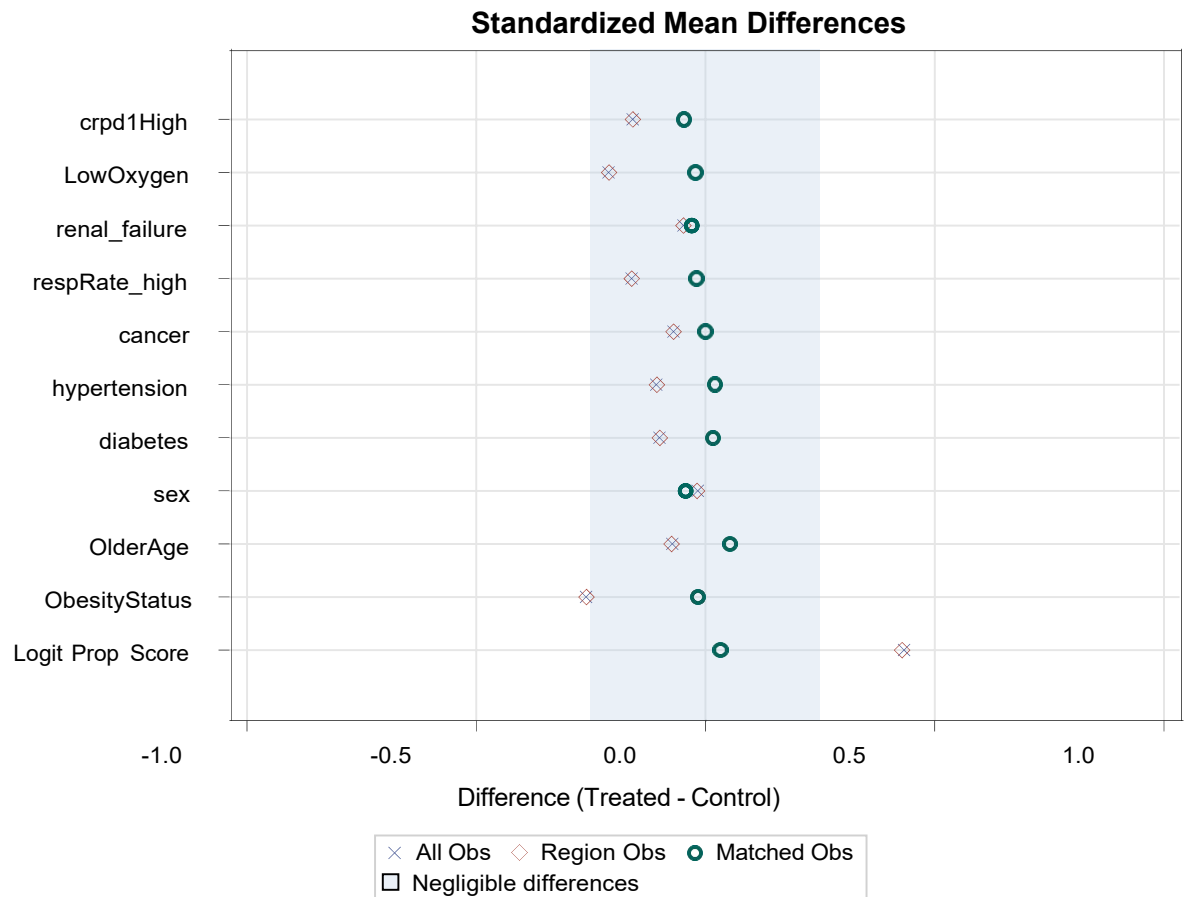


Figure S2 LPS Cloud Plots showing Distributions of Logit of Propensity Scores for MP and NMP treated COVID-19 patients. The propensity matching procedure failed to match only 8 of the methylprednisolone patients with any of patients who did not receive methylprednisolone during their COVID-19 hospitalization. (17)

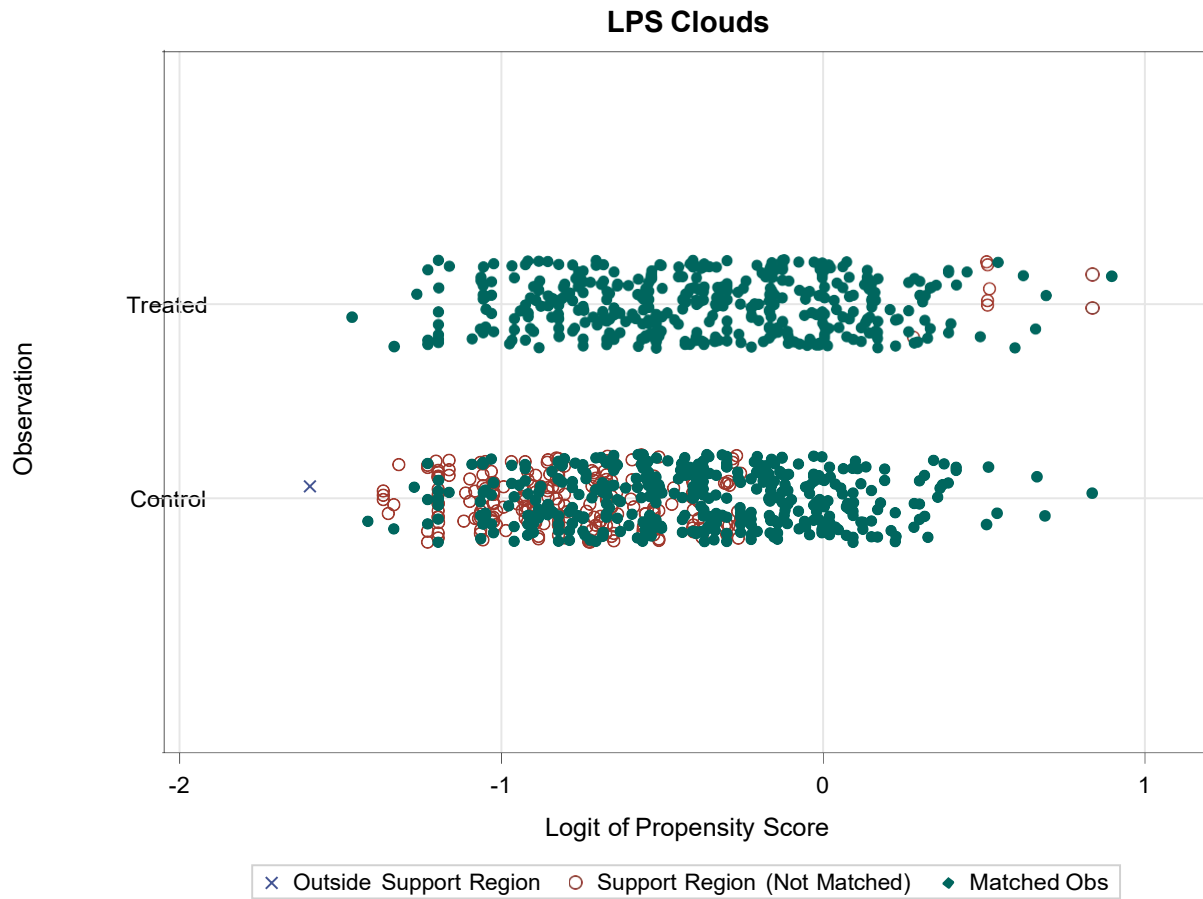


Table S3. Frequencies of Hydroxychloroquine, Azithromycin, and Methylprednisolone

Drug Combination	Frequency	Percent	Cumulative Frequency	Cumulative Percent
No methylprednisolone, No hydroxychloroquine, No azithromycin	58	7.64	58	7.64
hydroxychloroquine	67	8.83	125	16.47
azithromycin	54	7.11	179	23.58
hydroxychloroquine And azithromycin	201	26.48	380	50.07
methylprednisolone	45	5.93	425	55.99
methylprednisolone, hydroxychloroquine	70	9.22	495	65.22
methylprednisolone, azithromycin	16	2.11	511	67.33
methylprednisolone, hydroxychloroquine, and azithromycin	248	32.67	759	100.00