

Author (ref) Country	N	Median Age	Study Population	Study Design	Clinical Severity (n)	COVID-19 Therapy (n)	Outcomes (n died/ n recovered)
SOT							
Abrishami et al (27) Iran	12	47.5	100% kidney	Case series	Hospitalized (12) ICU (10)	Antiviral (12) HCQ (12) Corticosteroids (12) IVIG (12)	8/4
Ahluwalia et al (28) United States	5	50	100% heart	Case series	Hospitalized (4) ICU (0)	Antiviral (2)	1/4
Ahmad et al (29) United Kingdom	1	53	100% kidney	Case report	Hospitalized (1) ICU (1)	Corticosteroids (1)	0/1
Akalin et al (30) United States	36	60	100% kidney	Case series	Hospitalized (28) ICU (11)	HCQ (24) Azithromycin (13) Corticosteroids (2) Leronlimab (6) Tocilizumab (2)	10/3
Alberici et al (31) Italy	20	59	100% kidney	Observational cohort	Hospitalized (20) ICU (4)	Antiviral (19) HCQ (19) Corticosteroids (20) Tocilizumab (6)	4/16
Arpali et al (32) Turkey	1	28	100% kidney	Case report	Hospitalized (1) ICU (0)	Antiviral (1)	0/1
Banerjee et al (33) United Kingdom	7	54	100% kidney	Retrospective cohort	Hospitalized (5) ICU (2)	Antiviral (1) Corticosteroids (1)	1/6
Bartirolo et al (34) Italy	1	36	100% kidney	Short communicatio n	Hospitalized (1) ICU (0)	Antiviral (1) HCQ (1)	0/1
Becchetti et al (35) Multiple European	57	65	100% liver	Retrospective cohort	Hospitalized (37) ICU (4)	Antiviral (3) HCQ (24) Azithromycin (15) Corticosteroids (19)	9/48

Belli et al (36) Multiple European	103	65	100% liver	Case series	Hospitalized (83) ICU (15)	Antiviral (18) HCQ (68) Azithromycin (34) Corticosteroids (19) Tocilizumab (7)	16/87
Bhoori et al (37) Italy	3	NA	100% liver	case series	Hospitalized (3) ICU (3)	NI	3/0
Bösch et al (38) Germany	7	61.4	28.6% liver, 42.9% kidney, 14.2% heart, 14.2% lung	Case series	Hospitalized (7) ICU (4)	None	0/7
Bossini et al (39) Italy	53	60	100% kidney	Retrospective cohort	Hospitalized (45) ICU (10)	Antiviral (32) HCQ (39) Azithromycin (8) Corticosteroids (45)	15/38
Bush et al (40) United States	1	13	100% kidney	Case report	Hospitalized (1) ICU (0)	None	0/1
Bussalino et al (41) Italy	1	32	100% kidney	Case report	Hospitalized (1) ICU (0)	Antiviral (1) HCQ (1) Corticosteroids (1)	0/1
Chaudhry et al (42) United States	47	61	4.2% liver, 80.9% kidney, 10.6% heart, 8.5% lung*	case control	Hospitalized (35) ICU (13)	HCQ (32) Corticosteroids (23) Tocilizumab (3)	8/39
Chen D et al (43) China	1	29	100% kidney	Case report	Hospitalized (1) ICU (0)	Antiviral (1) IFN-a (1)	NA
Chen TY et al (44) United States	30	56	100% kidney	Retrospective cohort	Hospitalized (30) ICU (NI)	HCQ (3) Azithromycin (30) Corticosteroids (18)	6/24
CUKTP (45) United States	15	51	87% kidney, 13% multiple	Case series	Hospitalized (15) ICU (5)	HCQ (13) Azithromycin (9) Corticosteroid (1) Tocilizumab (1)	2/13
Cravedi et al (46) United States	144	62	100% kidney	Retrospective cohort	Hospitalized (144) ICU (43)	Antiviral (20) HCQ (101)	46/98

						Corticosteroids (95) Tocilizumab (19)	
Crespo et al (47) Spain	16	73.6	100% kidney	Case series	Hospitalized (15) ICU (6)	Antiviral (5) HCQ (13) Corticosteroids (6) Tocilizumab (4)	8/8
Fernández-Ruiz et al (48) Spain	18	71	33% liver, 44% kidney, 22% heart	Case series	Hospitalized (17) ICU (0)	Antiviral (9) HCQ (5) IVIg (2) Tocilizumab (2)	5/13
Fung et al (49) United States	10	56.5	10% liver, 70% kidney, 10% heart, 10% lung	Case series	Hospitalized (7) ICU (3)	Antiviral (3) HCQ (3) Azithromycin (1) Corticosteroid (1) C Plasma (1) Tocilizumab (1)	0/10
Guillen et al (50) Spain	1	50	100% kidney	Case report	Hospitalized (1) ICU (1)	Antiviral (1) HCQ (1) Azithromycin (1) IFN-b (1)	0/1
Hoek et al (51) Netherlands	23	59	4.3% liver, 65.2% kidney, 13% heart, 13% lung, 4.3% multiple	Case series	Hospitalized (19) ICU (2)	HCQ (3) Azithromycin (11)	5/18
Huang JF et al (52) China	1	59	100% liver	Case report	Hospitalized (1) ICU (1)	Antiviral (1) Corticosteroids (1) IVIg (1) IFN α (1)	1/0
Husain et al (53) United States	41	49	100% kidney	Retrospective cohort	Hospitalized (13) ICU (NI)	NI	NI
Jiang et al (54) China	1	70	100% kidney	Case report	Hospitalized (1) ICU (1)	Convalescent plasma (1)	0/1
Kates et al (55) United States	4	60.5	25% liver, 25% kidney, 25% heart, 25% lung	Case series	Hospitalized (2) ICU (0)	Corticosteroids (1)	0/4
Keller et al (56)	1	68	100% lung	Case report	Hospitalized (1)	HCQ (1)	0/1

United States					ICU (1)	Azithromycin (1)	
Ketcham et al (57) United States	13	61 *	77% heart, 23% multiple	Case series	Hospitalized (13) ICU (6)	HCQ (8) Corticosteroids (8) Tocilizumab (3)	2/11
Kolonko et al (58) Poland	4	47	25% liver, 75% kidney	Case series	Hospitalized (4) ICU (NI)	NI	1/3
Lagana et al (59) United States	1	0.5	100% liver	Case report	Hospitalized (1) ICU (0)	HCQ (1)	0/1
Latif et al (60) United States	28	64	100% heart	Case series	Hospitalized (22) ICU (7)	HCQ (18) Corticosteroid (8) Tocilizumab (6)	2/26
Lee BT et al (61) United States	38	66	84% liver, 16% multiple	Case series	Hospitalized (27) ICU (8)	HCQ (18) Azithromycin (18) Corticosteroids (5)	7/31
Lee H et al (62) United States	4	8.71	50% heart, 50% multiple	Case series	Hospitalized (2) ICU (0)	None	0/4
Lima et al (63) United States	5	67	100% heart	Retrospective cohort	Hospitalized (5) ICU (2)	Antiviral (1) HCQ (3) Corticosteroids (1) C Plasma (1) Tocilizumab (1)	0/5
Liu et al (64) China	1	50	100% liver	Case report	Hospitalized (1) ICU (NI)	Antiviral (1) Corticosteroids (1) IVIg (1) IFN α (1)	0/1
Marx et al (65) France	1	58	100% kidney	Letter to the editor	Hospitalized (1) ICU (0)	None	0/1
Mattioli et al (66) Italy	1	62	100% heart	Case report	Hospitalized (1) ICU (0)	HCQ (1) Corticosteroids (1) Tocilizumab (1)	0/1
Mella et al (67) Italy	6	58	100% kidney	Case series	Hospitalized (6) ICU (6)	Antiviral (1) HCQ (6) Corticosteroids (3) IVIg (1) Tocilizumab (6)	4/2
Montagud-Marrahi et al (68)	33	57.3	94% kidney, 6% multiple	Case series	Hospitalized (26) ICU (13)	Antiviral (21) HCQ (22) Azithromycin (24)	2/31

Spain						Corticosteroids (13) Cytokine blockade (18)	
Morand et al (69) France	1	4.6	100% liver	Case report	Hospitalized (1) ICU (0)	None	0/1
Morillas et al (70) United States	5	57	20% liver, 40% kidney, 20% lung, 20% face	Case series	Hospitalized (5) ICU (5)	Antiviral (1) HCQ (3) Azithromycin (3) Corticosteroids (4) Tocilizumab (5)	1/4
Müller et al (71) Austria	1	55	100% liver	Letter to the editor	Hospitalized (1) ICU (0)	None	0/1
Myers et al (72) United States	8	59	100% lung	Case report	Hospitalized (7) ICU (3)	Antiviral (2) Corticosteroids (6) IVIg (4) Cytokine Blockade (3)	2/6
Nair et al (73) United States	10	57	100% kidney	Retrospective cohort	Hospitalized (9) ICU (5)	HCQ (9) Azithromycin (9) Corticosteroids (3)	3/7
Ning et al (74) China	1	29	100% liver	Case report	Hospitalized (1) ICU (0)	Antiviral (1)	0/1
Patrono et al (75) Italy	10	64	100% liver	Short communication	Hospitalized (9) ICU (NI)	Antiviral (2) HCQ (6) Corticosteroids (3)	1/9
Pereira et al (76) United States	90	57	14% liver, 51% kidney, 10% heart, 19% lung, 5% multiple organ	Case series	Hospitalized (68) ICU (23)	Antiviral (2) HCQ (62) Azithromycin (45) Corticosteroid (16) Tocilizumab (14)	16/74
Pérez-Sáez et al (77) Spain	80	NA	100% kidney	Brief communication	Hospitalized (80) ICU (24)	HCQ (79) Azithromycin (59) Corticosteroids (64) IVIg (12) Cytokine blockade (22) IFN α (5)	26/54

Qin et al (78) China	1	37	100% liver	Case report	Hospitalized (1) ICU (NI)	Antiviral (1) IVIG (1)	0/1
Russell et al (79) United States	1	3	100% heart	Case report	Hospitalized (1) ICU (0)	IVIG (1)	0/1
Seminari et al (80) Italy	1	50	100% kidney	Case report	Hospitalized (1) ICU (0)	None	0/1
Silva et al (81) Portugal	5	56	80% kidney, 20% multiple	Case series	Hospitalized (4) ICU (1)	HCQ (3) Corticosteroids (5)	1/4
Thammathiwat et al (82) Thailand	1	58	100% kidney	Case report	Hospitalized (1) ICU (NI)	Antiviral 1 HCQ (1) Azithromycin (1) Corticosteroids (1) IVIG (1) Tocilizumab (1)	0/1
Travi et al (83) Italy	13	59	53.8% liver, 30.8% kidney, 15.4% multiple	Case series	NA	Antiviral (4) HCQ (11) Corticosteroids (4) Tocilizumab (2)	1/12
Tschopp et al (84) Switzerland	21	56	23.8% liver, 47.6% kidney, 4.8% heart, lung 4.8%, 4.8% pancreas, 14.3% multiple	Retrospective cohort	Hospitalized (5) ICU (5)	Antiviral (14) Immune modulation (4)	2/19
Verleden et al (85) Belgium	10	60.5	100% lung	Retrospective cohort	Hospitalized (8) ICU (1)	HCQ (9) Azithromycin (9) Tocilizumab (1)	1/9
Wang et al (86) China	1	49	100% kidney	Case report	Hospitalized (1) ICU (0)	Antiviral (1) Corticosteroids (1) IFN α (1)	0/1
Webb et al (87) United Kingdom	39	NA	100% liver	Case series	NI	NI	9/30

Yi et al (88) United States	21	54.8	14% liver, 57% kidney, 10% lung, 20% multiple	Case series	Hospitalized (14) ICU (7)	Antiviral (2) HCQ (9) Azithromycin (9) Corticosteroid (3) Convalescent plasma (1) Cytokine Blockade (6)	1/20
Zhong et al (89) China	2	42.5	50% liver, 50% kidney	Case report	Hospitalized (2) ICU (1)	Antiviral (3) Corticosteroids (1) IVIG (1) IFN-a (1)	0/2
Zhu et al (90) China	10	49.5	100% kidney	Retrospective cohort	Hospitalized (10) ICU (NI)	Antiviral (9) Corticosteroids (8) IVIG (7)	1/9
HCT							
Foss et al (91) United States	1	47	100% allogeneic	Case report	Hospitalized (1) ICU (0)	HCQ (1) Ruxolitinib (1)	0/1
Huang J et al (92) China	1	51	100% allogeneic	Case report	Hospitalized (1) ICU (1)	Antiviral (1) Corticosteroid (1) IVIG (1)	1/0
Innes et al (93) United Kingdom	1	53	100% allogeneic	Case report	Hospitalized (1) ICU (1)	Tocilizumab (1) Ruxolitinib (1)	0/1
Kanellopoulos et al (94) United Kingdom	7	64	86% allogeneic 14% autologous	Case series	NI	HCQ (1)	2/5
Karataş et al (95) Turkey	1	61	100% autologous	Case report	Hospitalized (1) ICU (0)	HCQ (1) Azithromycin (1) Convalescent plasma (1)	0/1
Lupo- Stanghellini et al (96) Italy	5	NI	NI	Case report	NI	NI	NI
Malard et al (97) France	7	61	29% allogeneic 71% autologous	Retrospective cohort	NI	Antiviral (1) HCQ (1) Cytokine Blockade (2)	1/6

Nazon et al (98) France	1	17	100% allogeneic	Case report	Hospitalized (0) ICU (0)	None	0/1
Niu et al (99) United States	2	60	100% allogeneic	Case report	Hospitalized (2) ICU (1)	IVIG (2) Convalescent plasma (1)	1/1
Saraceni et al (100) Italy	1	59	100% allogeneic	Case report	Hospitalized (1) ICU (1)	Antiviral (1) HCQ (1)	0/1
Vicent et al (101) Spain	8	10.5	100% allogeneic	Case series	Hospitalized (5) ICU (2)	Antiviral (3) HCQ (6) Azithromycin (2) Cytokine Blockade (3)	1/7
Adult Cancer							
Al-Shamsi et al (102) United Arab Emirates	7	52	100% solid tumor	Prospective observational cohort	Hospitalized (2) ICU (2)	NI	1/6
Aries et al (103) United Kingdom	35	69	100% heme malignancy	Retrospective cohort	NI	NI	14/21
Assad et al (104) France	55	58	36% heme malignancy, 64% solid tumor	Retrospective cohort	NI	Antiviral (18)	8/47
Chaidos (105) United Kingdom	2	63	100% heme malignancy	Case report	Hospitalized (2) ICU (1)	Tocilizumab (2)	0/2
Dai et al (106) China	105	64	9% heme malignancy, 91% solid tumor	Retrospective cohort	Hospitalized (105) ICU (19)	Antiviral (75) Corticosteroids (19)	16/89
Dhakal et al (107) USA	7	75	100% heme malignancy	Case series	Hospitalized (5) ICU (4)	HCQ (1) Azithromycin (1)	4/3
Gonzalez-Lugo et al (108) USA	7	76	100% heme malignancy	Case series	Hospitalized (5) ICU (0)	Antiviral (1) HCQ (1)	1/6

Kuderer et al (109) USA	928	66	22% heme malignancy, 78% solid tumor	Retrospective cohort	Hospitalized (NI) ICU (130)	HCQ (278) Azithromycin (278)	121/807
Lee et al (110) United Kingdom	800	69	14% heme malignancy, 86% solid tumor	Prospective observational cohort	Hospitalized (704) ICU (56)	NI	224/576
Li et al (111) China	5	47	100% heme malignancy	Case series	NI	NI	1/4
Liang et al (112) China	18	60	100% solid tumor	Prospective cohort	Hospitalized (NI) ICU (9)	NI	NI
Martin-Moro et al (113) Spain	34	73	100% heme malignancy	Retrospective cohort	Hospitalized (34) ICU (2)	Antiviral (18) HCQ (29) Azithromycin (15) Corticosteroids (19) Tocilizumab (9)	11/23
Mehta et al (114) USA	218	69	25% heme malignancy, 75% solid tumor	Retrospective cohort	Hospitalized (NI) ICU (23)	NI	61/158
Miyashita et al (115) USA	334	NI	100% solid tumor	Retrospective cohort	NI	NI	37/297
Omarini et al (116) Italy	9	73	33% heme malignancy, 67% solid tumor	Case series	Hospitalized (6) ICU (2)	NI	2/7
Ouyang et al (117) China	1	56	100% heme malignancy	Case report	NI	NI	0/1

Robilotti et al (118) USA	423	NI	24% heme malignancy, 76% solid tumor	Retrospective cohort	Hospitalized (168) ICU (48)	NI	39/384
Thibaud et al (119) USA	8	72	100% heme malignancy	Case series	Hospitalized (8) ICU (NI)	HCQ (7) Azithromycin (4) Tocilizumab (1)	2/6
Tian et al (120) China	232	64	100% solid tumor	Retrospective cohort	NI	Antiviral (183) Immunomodulator (86)	46/186
Yang F et al (121) China	52	63	100% solid tumor	Case control	Severe/Critical (37)	NI	11/41
Yang K et al (122) China	205	63	11% heme malignancy, 89% solid tumor	Retrospective cohort	Hospitalized (123) ICU (30)	Antiviral (193) Corticosteroids (62) IVIG (59)	40/165
Yu et al (123) China	12	66	100% solid tumor	Retrospective cohort	Hospitalized (12) ICU (1)	NI	3/9
Zhang H et al (124) China	1	57	100% solid tumor	Case report	Hospitalized (1)	Antiviral (1)	0/1
Zhang L et al (125) China	28	65	100% solid tumor	Retrospective cohort	Hospitalized (28) ICU (10)	Antivirals (71) Corticosteroids (54) IVIG (36)	8/20
Zhang X et al (126) China	1	60	100% heme malignancy	Case report	Hospitalized (1)	Corticosteroids (1) Tocilizumab (1)	0/1
Pediatric Cancer							
St. Jude Registry (127) Global	623	NI	67% heme malignancy, 33% solid tumor	Database	Hospitalized (192) ICU (38)	Antiviral (37) HCQ (28) Azithromycin (53) Convalescent plasma (2)	21/602

General Population							
Pormohammad et al (128) Global	6174 2	48**	General population, inclusive of 2.7% cancer patients	Meta-analysis	Hospitalized (50011) ICU (15806)	NI	3705/58037
Fried et al (130) USA	1172 1	NI	General population hospitalized with COVID-19 in the United States	Meta-analysis	Hospitalized (11721) ICU (2336)	Antiviral (48) HCQ (4232)	2514
Tzotzos et al (131) Global	2486	NI	General population hospitalized with COVID-19	Meta-analysis	Hospitalized (1658) ICU (429)	NI	347