



Supplementary Figure 1 Meta-analysis of effect of LPV/r and arbidol on COVID-19

Supplementary Table 1 Characteristics of included trials

Author	Country	Intervention/ Control medicine	Dose	Primary outcomes	Intervention/ Control patients	Study design	Quality
Chen J et al ¹⁶	China	HCQ/standard	400mg/day, five days	Negative conversion rate at 7 days and mortality at 14 days	15/15	RCT	
Chen Z et al ¹⁷	China	HCQ/standard	400mg/day, five days	Time to clinical recovery, radiological result and adverse reaction at day 5	31/31	RCT	
Magagnoli et al ¹⁸	USA	HCQ+AZ/HCQ/standard		Mortality and need for mechanical ventilation	113/97/158	Retrospective cohort study	8
Mahévas et al ¹⁹	France	HCQ/standard	600mg/day, two days	Transfer to intensive unit within 7 days and overall death	84/97	Retrospective cohort study	9
Tang W et al ²⁰	China	HCQ/standard	1200mg/day for 3days 800mg/day for 2-3 weeks	Negative conversion rate at 28 days	75/75	RCT	
Mallat et al ²¹	UAE	HCQ/standard		Time to viral clearance	21/13	Retrospective cohort study	8
Geleris et al ²²	USA	HCQ/standard	1200 mg on day 1, then 400 mg daily for 5 days	Time from study baseline to intubation or death	811/635	Prospective cohort study	8
Yu B et al ²³	China	HCQ/standard	400mg/day for 7–10 days	Fatality of patients, and inflammatory cytokine levels	48/502	Retrospective cohort study	8
Sbidian et al ²⁴	France	HCQ+AZI/HCQ	HCQ 600 mg on day 1, then 400 mg/day,9 days. AZI 500 mg on day 1, then 250 mg/day, 4 days	All-cause 28-day mortality	623/227/3792	Retrospective cohort study	9
Singh et al ²⁵	USA	HCQ/standard		Mortality and need for mechanical ventilation	1125/2247	Retrospective cohort study	6
Ip et al ²⁶	USA	HCQ/standard		Death	1914/598	Retrospective cohort study	8

Chen X et al ³¹	China	LPV/r/Arbidol/ standard		Time to viral clearance/clearance rate at 14 days/time to clearance since admission	60/37/121	Retrospective cohort study	8
Cao B et al ³⁰	China	LPV/r/standard	800mg and 200mg/day, 14 days	Time to clinical recovery	99/100	RCT	
Li et al ²⁸	China	LPV/r/Arbidol/ standard	Lopinavir 400mg/day boosted by ritonavir 100mg/day/Arbidol 600mg/day, 7-14 days	Time to viral clearance/ Negative conversion rate at day 7 and 14	34/35/17	RCT	
Yan et al ²⁹	China	LPV/r/standard	800mg and 200mg/day, 10 days or more	Time to viral clearance	78/42	Retrospective cohort study	7
Ye et al ³²	China	LPV/r/standard	800mg and 200mg/day	Body temperature/blood routine/ALT,AST index/ every other day	42/5	Retrospective cohort study	8
Zhu Z et al ²⁷	China	LPV/r/Arbidol	800mg and 200mg/day; 600mg/day, 7days	Negative conversion rate at day 7 and 14 and adverse reactions	34/16	Retrospective cohort study	8
LV et al ³³	China	Lianhuaqingwen /standard	3 bags/day, 10 days	Time to clinical recovery and clinical recovery rate	63/38	Retrospective cohort study	7
Yao et al ³⁴	China	Lianhuaqingwen /standard	3 bags/day, 10 days	Time to clinical recovery and clinical recovery rate	21/21	Retrospective cohort study	7
Xia et al ³⁵	China	CM/ standard		Time to clinical recovery and clinical recovery rate, mortality	34/18	Retrospective cohort study	7
Chendb et al ³⁶	China	Lianhuaqingwen /standard	3 bags/day, 10 days	Time to clinical recovery and clinical recovery rate, CT improvement rate	51/51	Retrospective cohort study	7
Zhang et al ³⁷	China	Xuebijing/ standard	100ml/day, 7days	Negative conversion rate and CT absorption rate at day 7	22/22	Retrospective cohort study	8
Li K et al ³⁸	China	Qingfeipaidu decoction/standard	400ml/day, 3 days per treatment	Time to clinical recovery and clinical recovery rate	30/30	Retrospective cohort study	7

Xiao et al ³⁹	China	Shufengjiere capsule/ Arbidol	6240mg/day, 2 weeks	Improvement of clinical conditions, blood routine and chest CT	100/100	Prospective Case-control study	7
Duan et al ⁴⁰	China	Jinhua qinggan Granules/ standard	6 bags/day, 5days	Improvement of clinical conditions, TCM syndrome scale score, Hospitalization rate, Hamilton Anxiety Scale,	82/41	RCT	
Fu et al ⁴¹	China	Toujie Quwen Granules/ Arbidol and Ambroxol	Twice/ day, 15days Arbidol 600mg/day, 10days; Ambroxol 90mg/day, 5days	TCM syndrome score, white blood cells, Lymphocytes number, CRP, T cells distribution	37/36	Prospective Case-control study	7
Yu et al ⁴²	China	Lianhuaqingwen Capsule/ Arbidol	18g/day, 7 days 600mg/day, 7 days	TCM syndrome score, white blood cells, PCT, CRP, chest CT	148/147	Prospective Case-control study	7
Fu et al ⁴⁴	China	Toujie Quwen Granules/Arbidol	Twice/ day, 15days Arbidol 600mg/day, 10days, Ambroxol 90mg/day, 5days	TCM syndrome score, white blood cells, Lymphocytes number, CRP, T cells distribution, Chest CT	32/33	Prospective Case-control study	7
Sun et al ⁴³	China	Lianhua Qingke Granules/ standard	3 bags/day, 14 days	Cough disappearance	25/32	RCT	
Liao et al ⁴⁵	China	Chinese herbs/ standard	1 week	Clinical improvement, adverse events	35/35	RCT	
Shao et al ⁵⁶	China	IVIG/ standard		Mortality at day 28 and 60	174/151	Retrospective cohort study	9
Xie et al ⁵⁷	China	IVIG <48h/ IVIG>48h	800mg and 200mg/day, 10 days or more	Mortality at day 28	Total 58	Retrospective cohort study	8
Duan et al ⁴⁸	China	CP	200ml	Safety of CP transfusion	10	CCT (non-control)	11
Shen et al ⁴⁹	China	CP	Between 1–20days	Change of body temperature, SOFA score, viral load, serum antibody titer, biochemical index, resolve of ARDS	5	Case series	14

Ahn et al ⁵⁰	Korea	CP	500ml on day 10 500ml on day 6	Improvement of clinical conditions	2	Case series	8
Ye et al ⁵¹	China	CP		Improvement of clinical conditions and chest CT	6	Case series	9
Zhang B et al ⁵²	China	CP	200-400ml	Improvement of clinical conditions	4	Case series	8
Liu et al ⁵³	USA	CP/standard	500ml/day, 1 day, 7 days and 14 days	Supplemental oxygen requirements and survival rate	39/230	Retrospective cohort study	8
Li et al ⁵⁴	China	CP/standard	4 to 13 mL/kg of recipient body weight	Time to clinical improvement within 28 days	52/51	RCT	
Zeng et al ⁵⁵	China	CP/standard	300ml	Improvement of clinical conditions and viral clearance	6/15	Retrospective cohort study	9
Wang et al ⁴⁶	China	Remdesivir/ standard	200mlgon day1 followed by 100g on day2-10	Time to clinical improvement up to day 28	158/79	RCT	
Beigel et al ⁴⁷		Remdesivir/placebo	200 mg on day 1 Then 100 mg for 9 days	Time to recovery	541/522	Retrospective cohort study	8

Supplementary Table 2 Quality assessment of included RCTs

Study	Random sequence generation	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Selective reporting	Other bias
Chen J et al ¹⁶	Unclear	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk
Chen Z et al ¹⁷	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Unclear
Tang Wet al ²⁰	Low risk	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk
Cao B et al ³⁰	Low risk	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk
Li et al ²⁸	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Wang et al ³⁴	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Duan et al ⁴⁰	Low risk	Low risk	Low risk	Unclear	Low risk	Low risk	Low risk
Sun et al ⁴³	Low risk	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk
Liao et al ⁴⁵	Unclear	Unclear	Unclear	Unclear	Low risk	Low risk	Low risk
Li et al ⁵⁴	Low risk	Low risk	Unclear	Unclear	Low risk	Low risk	Low risk