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Supplement

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Supplemental Table 1. Risk of bias assessment.

		Representativeness	Selection	Ascertainment	Demonstration	Comparability	Assessment	Follow-up length	Follow-up adequacy
1	Tang (Mar 2020)	⊕	⊕	⊕	⊖	⊕	⊕	⊕	⊕
2	Ranucci (Apr 2020)	⊖	?	⊕	⊕	?	⊕	⊕	⊕
3	Panigada (Apr 2020)	⊖	?	⊕	⊕	?	⊕	?	?
4	Fogarty (Apr 2020)	⊕	⊕	⊕	⊕	⊕	⊕	⊖	⊖
5	Cui (Apr 2020)	⊖	⊕	⊕	⊕	⊕	⊕	?	?
6	Liu (May 2020)	⊕	?	⊕	⊕	?	⊕	?	?
7	Zhang (May 2020)	⊕	?	⊕	⊕	?	⊖	?	?
8	Middeldorp (May 2020)	⊖	?	⊖	⊕	?	⊖	⊖	⊖
9	Longchamp (May 2020)	⊖	?	⊕	⊕	?	⊖	⊕	⊕
10	Santoliquido (Jun 2020)	⊖	?	⊕	⊕	?	⊖	?	?
11	Helms (Jun 2020)	⊕	⊕	⊕	⊕	⊕	⊖	⊕	⊕
12	Llitjos (Jul 2020)	⊕	?	⊕	⊕	?	⊕	⊕	⊕
13	Klok (Jul 2020)	⊕	?	⊕	⊕	?	⊖	⊕	⊕
14	Liao (Jul 2020)	⊖	?	⊕	⊕	?	⊖	⊕	⊕
15	Alsamkari (Jul 2020)	⊕	⊕	⊕	⊕	?	⊕	⊕	⊕
16	Lachant (Jul 2020)	⊕	?	⊕	⊖	?	⊕	?	?
17	Nougier (Jul 2020)	⊕	?	⊕	⊕	?	⊕	⊕	⊕
18	Stefely (Aug 2020)	⊖	⊖	⊕	⊕	⊕	⊕	?	?
19	Martín-Rojas (Aug 2020)	⊕	?	⊕	⊕	?	⊕	?	?
20	Rauch (Aug 2020)	⊕	?	⊕	⊕	?	⊖	⊕	⊕
21	Alsamkari (Aug 2020)	⊖	⊖	⊕	⊕	⊕	⊕	?	?
22	Blasi (Aug 2020)	⊕	⊕	⊕	⊕	⊕	⊕	?	?
23	Demelo-Rodriguez (Aug 2020)	⊖	⊕	⊕	⊕	⊕	⊕	?	?
24	Fu (Aug 2020)	⊕	?	⊕	⊕	?	⊕	⊕	⊕
25	Lodigiani (Aug 2020)	⊕	?	⊕	⊕	?	⊖	⊕	⊕
26	Hottz (Sep 2020)	⊕	⊕	⊕	⊕	⊖	⊕	⊕	⊕
27	Shah (Sep 2020)	⊕	⊕	⊕	⊕	⊖	⊕	⊖	⊕
28	Yuriditsky (Sep 2020)	⊕	?	⊕	⊕	?	⊕	?	?
29	Maatman (Sep 2020)	⊕	?	⊕	⊖	?	⊕	?	?
30	Luan (Nov 2020)	⊖	?	⊕	⊕	?	⊕	?	?

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⊕ Low risk of bias ? Unclear risk of bias ⊖ High risk of bias

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		Representativeness	Selection	Ascertainment	Demonstration	Comparability	Assessment	Follow-up length	Follow-up adequacy
31	Dujardin (Dec 2020)	+	+	+	+	+	−	?	?
32	Hoechter (Dec 2020)	+	+	+	−	+	+	?	?
33	Pavoni (Dec 2020)	−	?	+	−	?	+	?	?
34	Pizzi (Dec 2020)	+	+	+	−	+	+	?	?
35	Von Meijenfeldt (Dec 2021)	+	+	+	+	+	+	?	?
36	Friedrich (Dec 2020)	−	?	+	−	?	+	+	+
37	Gibson (Dec 2020)	+	?	+	+	?	−	?	?
38	Tan (Jan 2021)	+	+	+	−	+	+	?	?
39	Roh (Jan 2021)	−	+	+	+	+	+	?	?
40	Ierardi (Jan 2021)	+	+	+	+	+	+	+	+
41	Planquette (Jan 2021)	−	+	+	−	+	+	−	−
42	Li (Feb 2021)	−	+	+	−	+	+	?	?
43	Rashidi (Feb 2021)	−	+	+	+	+	−	+	+
44	Guervilly (Feb 2021)	+	+	+	+	−	+	?	?
45	Campello (Feb 2021)	−	−	+	+	+	+	?	?
46	Sadeghipour (Mar 2021)	+	+	+	+	+	−	+	+
47	Alabyad (Mar 2021)	+	?	+	+	?	+	+	+
48	Bachler (Mar 2021)	−	−	+	−	−	−	?	?
49	Petito (Mar 2021)	−	+	+	+	+	+	?	?
50	Creel-Bulos (Mar 2021)	−	+	+	−	+	−	?	?
51	Chandel (Mar 2021)	−	?	+	−	?	−	?	?
52	De la Morena-Barrio (Apr 2021)	+	+	+	−	−	+	?	?
53	Mirsadraee (May 2021)	+	?	+	−	?	+	?	?
54	Xu (May 2021)	−	?	+	−	?	+	?	?
55	Pieralli (May 2021)	+	+	+	+	+	−	?	?
56	Short (May 2021)	+	?	+	+	?	+	+	+
57	Engelen (Jun 2021)	−	?	+	+	?	+	+	+
58	Tacquard (Jun 2021)	−	?	+	−	?	+	−	+
59	Brosnahan (Jul 2021)	+	+	+	−	+	+	?	?
60	Doyle (Jul 2021)	+	+	+	−	+	+	+	−

+ Low risk of bias ? Unclear risk of bias − High risk of bias

Domains

Representativeness	Representativeness of the exposed cohort
Selection	Selection of the non exposed cohort
Ascertainment	Ascertainment of exposure
Demonstration	Demonstration that outcome of interest was not present at start of study
Comparability	Comparability
Assessment	Assessment of outcome
Follow-up length	Was follow-up long enough for outcomes to occur
Follow-up adequacy	Adequacy of follow up of cohorts

Supplemental Table 2. Study data.

	Study	Country	Patients	Age	Males	ICU	Deaths	VTE	DVT	PE	PT (s)	aPTT (s)	Platelets (10^9/L)	Fibrinogen (mg/dL)	D-dimer (ug/L)
1	Tang (Mar 2020)	China	449	65.1	268	449	134				15.2		215		1,940
2	Ranucci (Apr 2020)	Italy	16	61	15	16	7					36.4	271	794	3,500
3	Panigada (Apr 2020)	Italy	24	56		24							348	680	4,877
4	Fogarty (Apr 2020)	Ireland	83	62	55	23	13				12.9	31	196	470	7,320
5	Cui (Apr 2020)	China	81	59.9	37	81	8	20			15.6	36.7	247		5,200
6	Liu (May 2020)	China	383	46	162		49						174	290	4,000
7	Zhang (May 2020)	China	143	63	74	15	32	67	66	1	13.6	34.8	221		2,700
8	Middeldorp (May 2020)	Netherlands	198	61	130	75		39	26	13			251		
9	Longchamp (May 2020)	Switzerland	25	68	16	25	5	8	6	5				640	2,071
10	Santoliquido (Jun 2020)	Italy	84	67.6	61		8	10	10		11.4		218	560	6,009
11	Helms (Jun 2020)	France	150	63	122	150	13	3	3				200	699	2,270
12	Llitjos (Jul 2020)	France	26	68	20	26	3	6		6			234	700	1,750
13	Klok (Jul 2020)	Netherlands	184	64	139	184	23	26	1	25					
14	Liao (Jul 2020)	China	380	64	206	86	53				16.6	38.8	105	396	7,240
15	Alsamkari (Jul 2020)	US	400	65	93	144	29	19	10	10	13.9	34.3	188	579	8,910
16	Lachant (Jul 2020)	US	107	78	44	17	10	27				35.2	203		1,400
17	Nougier (Jul 2020)	France	78	62	51	48								610	3,456
18	Stefely (Aug 2020)	United States	102	61	68		22	23			15.1	38.1	275	763	2,849
19	Martín-Rojas (Aug 2020)	Spain	206	59.9	18	26	18	18	10	8	12.8	31.3	189	514.42	646
20	Rauch (Aug 2020)	France	243	63.9	155	75	32	26	4	22			228	610	1,000
21	Alsamkari (Aug 2020)	United States	115	61		110	24	26	10	10					3,179
22	Blasi (Aug 2020)	Spain	66	64	39	12	8				15.6	33.7	196	393	2,535
23	Demelo-Rodriguez (Aug 2020)	Spain	156	68.1	102	16		23	23				264.5		2,148
24	Fu (Aug 2020)	China	75	46.6	45	16					12.2	24.5	178.7	430	2,100
25	Lodigiani (Aug 2020)	Italy	388	66	264	48	92	16	6						3,137
26	Hottz (Sep 2020)	Brazil	52	57	17	35	17						193	545	4,205
27	Shah (Sep 2020)	UK	187	57	124	187	59	42		42	12.4		241	700	2,857
28	Yuriditsky (Sep 2020)	United States	64	64	46	64	19	20	19	1			244	669	2,374
29	Maatman (Sep 2020)	United States	109	61	62	109	27	31	26	1					
30	Luan (Nov 2020)	China	117	61.9	62	35	2	61			12.1	37.3	177	429	4,100
31	Dujardin (Dec 2020)	Netherlands	127	62	98	127		53	11	9	11.3	27.4	237	770	2,310
32	Hoechter (Dec 2020)	Germany	36	64	28	22						29	227	709	2,400
33	Pavoni (Dec 2020)	Italy	42	64.3	27	42	16	16	13	3		32.2	317.5	895.7	1,556
34	Pizzi (Dec 2020)	Italy	162	68.3	95			7	5	2			213.4	684.9	2,185.9
35	Von Meijenfeldt (Dec 2021)	Sweden	102	60	65	12	11	4	3	1	15.3		231	627	1,110
36	Friedrich (Dec 2020)	Switzerland	31	60	21	22	5	5	4	1				640	5,100
37	Gibson (Dec 2020)	United States	72	64	57	72	17	12	12					578	2,512
38	Tan (Jan 2021)	Singapore	182	37	133	9	2				10.85	36.85		456	845
39	Roh (Jan 2021)	United States	30	63	15	30		10	5	5	15.4		255		1,140
40	Ierardi (Jan 2021)	Italy	263	63	205		41		67					536	1,332
41	Planquette (Jan 2021)	France	1,042	63	615	312	45	64	5	59			227	660	2,605
42	Li (Feb 2021)	China	2,779	66	45	64		104	88	16			205.5	412	2,070
43	Rashidi (Feb 2021)	Iran	1,529	56	832	1,529	51	52							
44	Guervilly (Feb 2021)	France	38	56	23	38	4	10	8	2				656	
45	Campello (Feb 2021)	Italy	89	68.4	23	30	8	17				28.1	213.1	505	243
46	Sadeghipour (Mar 2021)	Iran	562	50-71	325	562	236	19	12	7	13.7	32	239		1,037
47	Alabyad (Mar 2021)	United States	276	59	146	158	31	32	24	8					3,000

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	Study	Country	Patients	Age	Males	ICU	Deaths	VTE	DVT	PE	PT (s)	aPTT (s)	Platelets (10^9/L)	Fibrinogen (mg/dL)	D-dimer (ug/L)
48	Bachler (Mar 2021)	Austria	20	61.5	14	20	4			1			274	674	4,860
49	Petito (Mar 2021)	Italy	36	70.6	20	6		9	3	6			218.5	371.6	1,634
50	Creel-Bulos (Mar 2021)	United States	38	63	24	38		10	7	3			291		5,758
51	Chandel (Mar 2021)	United States	24	46	20		5	11	9	2				543.5	3,500
52	De la Morena-Barrio (Apr 2021)	Spain	127	60	72	39	10	5		5			194.9	514	
53	Mirsadraee (May 2021)	United Kingdom	72	52	53	72	17	15	15		14	38	270	640	7,606
54	Xu (May 2021)	China	1,131	64	690		7	9		4	13.6	38.5	220		870
55	Pieralli (May 2021)	Italy	227	72	129				31	9		36.6	220	599	1,865
56	Short (May 2021)	United States	3,418	62	2,170	3,418	1,180								
57	Engelen (Jun 2021)	Belgium	146	58	91	57		2	1	1			206		1,593
58	Tacquard (Jun 2021)	France	538	63	389	538	108	82	18	64			226	690	1,560
59	Brosnahan (Jul 2021)	United States	48	58	33			46	19	27			276.5		4,084
60	Doyle (Jul 2021)	UK	131	46	38	51		47	20	27			238	710	9,100

Abbreviations: aPTT, activated partial thromboplastin time; DVT, deep vein thrombosis; ICU, intensive care unit; PE, pulmonary embolism; PT, prothrombin time; VTE, venous thromboembolism.

Supplemental Table 3. Anticoagulation practice for COVID-19 patients in all 62 studies 2020–2021.

	Studies	Anticoagulation; type, dose, and duration
1	Tang (Mar 2020)	99 patients received heparin treatment for at least seven days, in which 94 received LMWH (40–60 mg enoxaparin/d) and five received unfractionated heparin (10,000–15,000 U/d), no anticoagulants other than heparin had been used for 7 days or longer in these patients.
2	Ranucci (Apr 2020)	16 patients received a complete anticoagulation profile upon ICU admission in the intensive care unit. Ten patients were followed in the subsequent seven days, after increasing the dose of LMWH, antithrombin levels correction, and clopidogrel in selected cases. After increasing the anticoagulation regimen, there were no observed major thromboembolic events.
3	Panigada (Apr 2020)	Most patients were on prophylaxis with LMWH or unfractionated heparin.
4	Fogarty (Apr 2020)	All hospitalized patients received weight- and renally appropriate doses of LMWH thromboprophylaxis unless contra-indicated as part of standard of care [enoxaparin 20 mg daily if <50 kg; enoxaparin 40 mg daily if 50–100 kg; 40 mg BID if 101–150 kg; 60 mg BID if >150 kg
5	Cui (Apr 2020)	No preventive anticoagulant was administered. Anticoagulant therapy monitored by level of D-dimer.
6	Liu (May 2020)	Not reported
7	Zhang (May 2020)	53 patients were given DVT prophylaxis, and 59 patients received LMWH
8	Middeldorp (May 2020)	Thrombosis prophylaxis was part of standard of care in all COVID-19 patients. Ward patients received thrombosis prophylaxis with nadroparin 2,850 IU once daily or 5,700 IU for patients with a body weight of ≥100 kg. From April 3 onwards, patients in ICU received a double dose of nadroparin compared with patients on the wards, which was nadroparin 2,850 IU twice daily for patients with a body weight <100 kg and 5,700 IU twice daily for those ≥100 kg.
9	Longchamp (May 2020)	All patients since admission were prescribed a thromboprophylaxis regimen, either with continuous intravenous heparin infusion (15,000 IU/24h, or 20,000 IU/24h for patients >100 kg), or once daily subcutaneous enoxaparin injections (40 mg, or 60 mg for patients >100 kg). The dose of prophylactic heparin administered was higher than current guidelines because of the perceived higher risk of VTE.
10	Santoliquido (Jun 2020)	All patients received a prophylactic dose of anticoagulant (either enoxaparin 40 mg once daily or fondaparinux 2.5 mg daily) since the first day of hospitalization)
11	Helms (Jun 2020)	Prophylactic dosing was 4,000 UI/day for LMWH or if contraindicated, unfractioned heparin at 5–8 U/kg/h.
12	Llitjos (Jul 2020)	Anticoagulation dose was left to the discretion of the treating physician based on the individual risk of thrombosis, and patients were classified as treated with prophylactic anticoagulation or therapeutic anticoagulation. Patients treated with therapeutic anticoagulation received either LMWH or unfractionated heparin with anti-Xa monitoring, with therapeutic levels of 0.3–0.7 U/mL anti-Xa activity.
13	Klok (Jul 2020)	All patients received at least standard-dose thromboprophylaxis. Study findings reinforce the recommendation to apply pharmacological thrombosis prophylaxis in all COVID-19 patients admitted to the ICU and strong suggest of increasing prophylaxis towards high prophylactic doses, even in the absence of randomized evidence.
14	Liao (Jul 2020)	Due to the retrospective nature of this study, researchers had little information about the use of LMWH in the cohort, partly because of inadequate awareness of routine thromboprophylaxis at the early stages of the pandemic. When and how to give such treatment was decided by treating doctors in different designated hospitals.
15	Alsamkari (Jul 2020)	All but one of the patients were receiving anticoagulation with standard prophylactic doses of unfractionated heparin or LMWH at the time of the event; one patient was receiving a therapeutic dose of apixaban at the time of the event.
16	Lachant (Jul 2020)	All patients received therapeutic anticoagulation (warfarin, enoxaparin, direct oral anticoagulants) regardless of indication for at least one month before SARS-CoV2 diagnosis.
17	Nougier (Jul 2020)	16 patients who had a sufficient volume of frozen plasma available with a mean anti-Xa activity of 0.35±0.20 U/mL received high-dose prophylaxis (enoxaparin 40 mg BID).
18	Stefely (Aug 2020)	59 patients received prophylactic SQ heparin or enoxaparin, 26 patients received therapeutic heparin or enoxaparin, and six patients received another dose of heparin or enoxaparin.
19	Martín-Rojas (Aug 2020)	200 patients (97.1%), received Enoxaparin 40 mg/d or bemiparin 3,500 UI/d while six (2.9%) received therapeutic doses of anticoagulation.
20	Rauch (Aug 2020)	Patients admitted while treated with DOAC or VKA were switched to curative heparin therapy. Ward patients received thromboprophylaxis with enoxaparin 4,000 or 6,000 IU daily. ICU patients received enoxaparin or unfractionated heparin according to their renal status and the need for invasive procedures.
21	Alsamkari (Aug 2020)	37 patients (32.1%) were receiving therapeutic anticoagulation, 77 patients (67.0%) were receiving prophylactic anticoagulation, and one patient (0.9%) was not receiving pharmacologic thromboprophylaxis.
22	Blasi (Aug 2020)	Standard LMWH enoxaparin.
23	Demelo-Rodriguez (Aug 2020)	Enoxaparin 40 mg per day or bemiparin 3,500 UI per day.
24	Fu (Aug 2020)	Most patients (86.7%) were treated with antibiotics, and 25 patients received moderate-dose methylprednisolone for a brief period. For 16 hyperfibrinogenemia patients combined with an elevated risk of thrombosis, LMWH was used to prevent potential DVT.
25	Lodigiani (Aug 2020)	All ICU patients received thromboprophylaxis with LMWH: the dosage was weight-adjusted in 17 patients and therapeutic in two patients on ambulatory treatment with DOAC.
26	Hottz (Sep 2020)	Antithrombotic prophylaxis with 40 to 60 mg of enoxaparin per day. The SARS-CoV-2 control participants were not under anti-inflammatory or antiplatelet drugs for at least 2 weeks.

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	Study	Anticoagulation; type, dose, and duration
27	Shah (Sep 2020)	All ICU admissions received standard weight-based LMWH thromboprophylaxis.
28	Yuriditsky (Sep 2020)	86% were on full-dose systemic anticoagulation with the remaining 14% receiving thromboprophylaxis-dose anticoagulation.
29	Maatman (Sep 2020)	The median time to routine chemical VTE prophylaxis was hospital day 0 (IQR 0–1 d) and included subcutaneous heparin every 8 hours (*n*=61, 56%), enoxaparin daily (*n*=26, 24%), or enoxaparin every 12 hours (*n*=14, 13%). Seven patients (6%) were treated with full anticoagulation immediately upon admission for existing medical comorbidities (*n*=4, 4%) or VTE diagnosed at presentation (*n*=2, 2%).
30	Luan (Nov 2020)	No anticoagulation reported.
31	Dujardin (Dec 2020)	Double dose of nadroparin, which was nadroparin 2,850 IU BID for patients with a body weight <100 kg and 3,800 or 5,700 IU BID for those ≥100 kg
32	Hoechter (Dec 2020)	Standard prophylactic anticoagulant treatment.
33	Pavoni (Dec 2020)	On ICU admission, patients with D-dimer <3,000 ng/mL (Group 1) received enoxaparin 4,000 UI (6,000 UI, if BMI>35) subcutaneously BID and patients with D-dimer ≥3,000 ng/mL (Group 2) received enoxaparin 100 UI/kg every 12 h. Aspirin was administered to all patients daily.
34	Pizzi (Dec 2020)	Prophylaxis with LMWH was routinely prescribed.
35	Von Meijenfeldt (Dec 2021)	The majority of patients (62%) admitted to the general ward received standard prophylactic LMWH (4,500 IU daily), 14 patients (16%) received double standard prophylactic doses of LMWH (4,500 IU twice daily), and four patients (4%) received oral anticoagulants. All patients admitted to higher-level care units received anticoagulation (2 received 4,500 IU LMWH once daily, and 10 received 4,500 IU LMWH twice daily).
36	Friedrich (Dec 2020)	As antithrombotic drug, unfractionated heparin was administered in all but two patients (6%) who received LMWH. Two (6%) patients were switched from unfractionated heparin to argatroban when a heparin-induced thrombocytopenia was suspected.
37	Gibson (Dec 2020)	Several patients required extremely high doses of unfractionated heparin (>20,000 U/hr IV) or had subtherapeutic anti-Xa concentrations on therapeutic enoxaparin (1 mg/kg every 12hr). Four of the patients in this cohort were switched to argatroban: three due to recurrent clotting of hemodialysis filters and one due to persistent low anti-Xa despite increased enoxaparin dosage.
38	Tan (Jan 2021)	Patients in HDU were only on mechanical thromboprophylaxis (TED stockings). Patients in ICU were started on prophylactic subcutaneous enoxaparin 40 mg daily (20 mg daily for patients with renal failure) unless contraindicated, together with pneumatic calf pumps.
39	Roh (Jan 2021)	All COVID-19 patients at the time of ROTEM testing were on thromboprophylaxis using either heparin or enoxaparin.
40	Ierardi (Jan 2021)	All patients, from admission and at least until the day LEDUS was performed, were per hospital protocol treated with prophylactic doses of weight-adjusted enoxaparin (100 IU/kg daily, the dose being halved in severe chronic kidney disease).
41	Planquette (Jan 2021)	Prophylactic anticoagulation by LMWH (enoxaparin 4,000 IU) or unfractionated heparin in case of glomerular filtration rate <30 mL/min.
42	Li (Feb 2021)	LMWH was most commonly prescribed (95.8%), usually 4,000 IU per day.
43	Rashidi (Feb 2021)	1,490 patients received VTE prophylaxis (enoxaparin 40–60 mg/daily, unfractionated heparin 5000 IU QID)
44	Guervilly (Feb 2021)	Heparin (preventive dose), *n*=34; heparin (treatment dose), *n*=47.
45	Campello (Feb 2021)	ICU patients received thromboprophylaxis with intermediate sub-therapeutic dose enoxaparin (11 received 4,000 IU daily, and five received 6,000 IU daily).
46	Sadeghipour (Mar 2021)	The primary anticoagulant agent was enoxaparin. Unfractionated heparin was used in the case of severe kidney insufficiency. For patients who weighed less than 120 kg and had a creatinine clearance greater than 30 mL/min, enoxaparin 1 mg/kg daily was assigned as intermediate-dose anticoagulation. Enoxaparin 40 mg daily was the control group standard-dose prophylactic anticoagulation regimen.
47	Alabyad (Mar 2021)	All patients were placed on prophylactic or therapeutic doses of anticoagulation therapy according to local guidelines.
48	Bachler (Mar 2021)	16 patients received anticoagulation with enoxaparin (LMWH), at a median dose of 80 (60-100) mg daily with corresponding peak plasma levels of 0.30 (0.23–0.32) IU mL. Target anti-Xa levels were set at 0.3–0.5 IU mL, and patients who reached these levels received a medium LMWH dose of 100 (80–100) mg daily, whereas patients who did not reach this target level also received 100 (80–120) mg daily.
49	Petito (Mar 2021)	Six patients received prophylactic LMWH (*n*=3 for both standard and intermediate-dose), and two receiving therapeutic-dose LMWH treatment (one for atrial fibrillation and one for a previous pulmonary embolism).
50	Creel-Bulos (Mar 2021)	A three-tier approach was implemented. Tier 1 consisted of conventional VTE prophylaxis medication and dosing. Tier 2 utilized more aggressive therapeutic anticoagulation measures, such as a low standard heparin infusion. Tier 3 was reserved for those patients with suspected/known VTE or multisystem organ failure with concern for microvascular thrombi etiology and consisted of high-dose therapeutic anticoagulation.
51	Chandel (Mar 2021)	All patients received therapeutic anticoagulation per institutional ECMO protocol with occasional cross-over between specific anticoagulants.
52	De la Morena-Barrio (Apr 2021)	28 patients received no antithrombotic therapy, 83 patients received prophylactic LMWH (enoxaparin), and 16 patients received intermediate/treatment dose LMWH (enoxaparin).
53	Mirsadraee (May 2021)	All but one patient received thromboprophylaxis or therapeutic anticoagulation.

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	Study	Anticoagulation; type, dose, and duration
54	Xu (May 2021)	55 patients (4.9%) received prophylactic anticoagulation, and 17 (1.5%) received plasma transfusion. 39 of these patients received LMWH (5,000 U daily, SQ injection), ten received enoxaparin (4,000 IU daily, SQ injection) and six received warfarin (2.5mg daily, oral administration).
55	Pieralli (May 2021)	All patients received anticoagulation (enoxaparin 95.6%) at the following doses: low 57.3%, intermediate 22.9%, high 19.8%.
56	Short (May 2021)	Patients received combination therapeutic anticoagulation prior to hospital admission or 2 days after ICU admission.
57	Engelen (Jun 2021)	During hospitalization, patients received enoxaparin with a prophylactic (0.5 mg/kg daily, ward) or intermediate (0.5 mg/kg BID, ICU) dosing regimen. Of 146 patients, 41 (28%) received thromboprophylaxis with prophylactic dose of enoxaparin (0.5 mg/kg once daily) for a median of 14 (IQR 10–23.5) days after hospital discharge.
58	Tacquard (Jun 2021)	All patients received pharmacologic thromboprophylaxis for at least one period of evaluation. Pharmacologic thromboprophylaxis was prescribed according to national guidelines and local protocols of each ICU. Standard prophylaxis initially was recommended using either LMWH or unfractionated heparin with dosage adjustments for overweight and obese patients.
59	Brosnahan (Jul 2021)	Patients were either receiving DOAC or warfarin before admission.
60	Doyle (Jul 2021)	For anticoagulation during ECMO, IV unfractionated heparin infusion was used with 50 IU/kg as a bolus at the time of cannulation with 2,500 units in the priming fluid for the circuit. Patients were also prescribed pharmacological thromboprophylaxis with LMWH SQ.

Abbreviations: BMI, body mass index; DOAC, direct oral anticoagulant use; DVT, deep vein thrombosis; ECMO, extracorporeal membrane oxygenation; HDU, high-dependency unit; ICU, intensive care unit; IQR, interquartile range; LEDUS, lower extremity duplex ultrasound; LMWH, low-molecular-weight heparin; ROTEM, rotational thromboelastometry; TED, thromboembolic deterrent; VKA, vitamin K antagonists; VTE, venous thromboembolism.

Supplemental Table 4. Newcastle-Ottawa Scale for risk of bias assessment tool.

Selection

1. Representativeness of the exposed cohort
   (a) Truly representative of the average patient (*e.g.*, severity of illness, comorbidities) in the community
   (b) Somewhat representative of the average patient (*e.g.*, severity of illness, comorbidities) in the community
   (c) Selected group of users (*e.g.* HIV+, pregnant, elderly, significant physical disabilities)
   (d) No description of the derivation of the cohort
2. Selection of the non-exposed cohort
   (a) Drawn from the same community as the exposed cohort
   (b) Drawn from a different source
   (c) No description of the derivation of the non-exposed cohort
3. Ascertainment of exposure
   (a) Secure record (*e.g.*, medical records)
   (b) Structured interview
   (c) Written self-report
   (d) No description
4. Demonstration that outcome of interest was not present at start of study
   (a) Yes
   (b) No

Comparability

1. Comparability of cohorts on the basis of the design or analysis
   (a) Study controls for SES (or some reasonable proxy of SES), age, race, gender
   (b) Study controls for any additional factor (this criteria could be modified to indicate specific control for a second important factor)
   (c) Inadequate degree of control

Outcome

1. Assessment of outcome
   (a) Independent or blind assessment stated in the paper, or confirmation of the outcome by reference to secure records (X-rays, medical records, *etc.*)
   (b) Record linkage (*e.g.*, identified through ICD codes on database records)
   (c) Self-report (*i.e.*, no reference to original medical records or X-rays to confirm the outcome)
   (d) No description
2. Was follow-up long enough for outcomes to occur?
   (a) Yes (select an adequate follow up period for outcome of interest)
   (c) No
3. Adequacy of follow-up of cohorts
   (a) Complete follow-up—all subjects accounted for

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(b) Subjects lost to follow-up unlikely to introduce bias—small number lost (LESS than 20% follow-up, or description provided of those lost)
(c) Follow-up rate MORE than 20% and no description of those lost
(d) No statement

Abbreviations: ICD, International Classification of Diseases; SES, socioeconomic status.