



Article scientifique

Article

2021

Appendix

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American Society of Hematology living guidelines on the use of anticoagulation for thromboprophylaxis in patients with COVID-19: May 2021 update on the use of intermediate-intensity anticoagulation in critically ill patients

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Cuker, Adam; Tseng, Eric K; Nieuwlaat, Robby; Angchaisuksiri, Pantep; Blair, Clifton; Dane, Kathryn; Davila, Jennifer; DeSancho, Maria T; Diuguid, David; Griffin, Daniel O; Kahn, Susan R; Klok, Frederikus A; Lee, Alfred Ian; Neumann, & Ignacio [and 33 more]

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**Coronavirus and antithrombotics**  
**Search narrative, 20 August 2020 (updated monthly)**

The following databases were searched since **August 2020**:

**Cochrane COVID-19 study register** (includes records from ClinicalTrials.gov, WHO ICTRN, and PubMed)

**EMBASE** (since 1974)

**Epistemonikos COVID-19 Evidence** (includes records from Cochrane Database of Systematic Reviews, Pubmed, EMBASE, CINAHL, PsycINFO, LILACS, Database of reviews of Effects, The Campbell Collaboration online library, JBI Database of Systematic Reviews and Implementation Reports, EPPI-Centre Evidence Library)

**MEDLINE** (since 1946)

**WHO Global Research Database (COVID-19)**

## COCHRANE COVID-19

(<https://covid-19.cochrane.org/>)

Revised 26 Feb 2021 to the following strategy:

anticoagula\* or anti-coagula\* or coagulation or thromb\* or antithromb\* or heparin or LMWH\* or dalteparin or enoxaparin or nadroparin or heparinoids or Acenocoumarol or Phenprocoumon or warfarin or ardeparin or tinzaparin or certoparin or reviparin or danaparoid or fluindione or "antivitamin k" or fraxiparin\* or enoxaparin\* or clexane or klexane or lovenox or fragmin or ardeparin\* or normiflo or tinzaparin or logiparin or innohep or certoparin or sandoparin or reviparin or clivarin\* or danaproid or danaparoid or orgaran or antixarin or bemiparin\* or hibor or zibor or ivor or badyket or semuloparin or parnaparin or tedelparin or fluxum or lohepa or lowhepa or parvoparin or seleparin\* or tedelgliparin or lomoparan or orgaran or sulodexide or zivor or embolex or xaparin or clivarine or acenocoumarol or sythrom or sinthrome or bivalirudin or angiomas or anglox or previscan or marcumar or marcoumar or "vitamin K antagonist\*" or coumadin or marevan or Jantoven or Coumadine or waran or rodex or Hepalean or Calcilean or Calciparine or Liquaemin or Liquemin or Multiparin or Novoheparin or Eparina or Hep-lock or Heparinate or Heparinic acid or Panheprin or Hepalean or Heparin Leo or Heparin Lock or fondaparinux.

OR

arixtra or oac or noacs or doac or dabigatran or melagatran or "factor Xa" or "factor 10a" or fXa or xaban\* or apixaban or betrixaban or eribaxaban or otamixaban or razaxaban or rivaroxaban or darexaban or edoxaban or Eliquis or "BMS-562247" or argatroban or Acova or PRT054021 or dabigatran or pradaxa or "BIBR 1048" or "BIBR 953" or "DU-176" or Savaysa or Xarelto or "BAY 59 7939" or "BAY 597939" or argatroban or acova or **Platelet Aggregation Inhibitor\* or antiplatelet or platelet antagoist\* or platelet antiaggregant\* or acetylsalicylic acid or aspirin or cangrelor or kengreal or caplacizumab or cablivi or cilostazol or cilostazole or cilostazolium or pletaal or pletal or clopidogrel or iscover or Plavix or thrombo or zylit or diyradamole or agilease or anginal or apricor or cardioflux or cardoxin or chilcolan or cleridium or corbion or coronairne, or corosan or coroxin or curantyl or dipiridamol or dipyridamine or dipyridamole or dipyridamolium or dipyridan or dipyudamine or gullisotin or justpentin or kurantil or natyl or peridamol or permiltin or persantin or persantine or piroan or pasugrel or effient or ticlopidine or panaldine or ticlid or ticlodix or ticlodone or ticlopidine or tiklid or ticagrelor or brilinta or ticagrelor or triflusal or aflen or disgren or frendis or triflusal or triflusalum**

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## Embase <1974 to 2020 August 19>, and OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present

Revised 26 Feb 2021 to the following strategy:

1. exp Coronaviridae/
2. exp Coronaviridae Infections/
3. coronavirus\*.mp. or (COVID or "covid-19" or COVID19 or nCoV or hCoV or 19nCoV or 2019nCoV or 2019-nCoV or SARS-CoV-2 or SARS-CoV or SARSCOV2 or SARSCOV-2 or SARS2 or MERS-CoV).ti,ab,kw.
4. (coronavirus\* or corona virus\* or betacoronavirus\* or OC43 or NL63 or 229E or HKU1 or HCoV\* or ncov\* or covid\* or sars-cov\* or sarscov\* or Sars-coronavirus\* or Severe Acute Respiratory Syndrome Coronavirus\*).mp. or/1-4
5. 5 not (SARS or SARS-CoV or MERS or MERS-CoV or Middle East respiratory syndrome or camel\* or dromedar\* or equine or coronary or coronal or covidence\* or covidien or influenza virus or HIV or bovine or calves or TGEV or feline or porcine or BCoV or PED or PEDV or PDCoV or FIPV or FCoV or SADS-CoV or canine or CCov or zoonotic or avian influenza or H1N1 or H5N1 or H5N6 or IBV or murine corona\*).mp.
7. ((pneumonia or covid\* or coronavirus\* or corona virus\* or ncov\* or 2019-ncov or sars\*).mp. or exp pneumonia/) and (Wuhan or Hubei or China or Chinese).mp.

8. (2019-ncov or ncov19 or ncov-19 or 2019-novel CoV or 19nCoV or sars-cov2 or sars-cov-2 or sarscov2 or sarscov-2 or Sars-coronavirus2 or Sars-coronavirus-2 or SARS-like coronavirus\* or coronavirus-19 or covid19 or covid-19 or covid 2019 or ((novel or new or nouveau or "19" or "2019") adj2 (CoV or nCoV or covid or coronavirus\* or corona virus or Pandemi\*2)) or ((covid or covid19 or covid-19) and pandemic\*2) or (coronavirus\* and pneumonia)).mp.
9. COVID-19.rx,px,ox. or severe acute respiratory syndrome coronavirus 2.os.
10. COVID-19.mp. or severe acute respiratory syndrome coronavirus 2.dj,dq.
11. or/6-10
12. 11 and ((20191\* or 202\*).dp. or 20190101:20301231.(ep). or "2019".yr. or 202\*.yr.)
13. limit 11 to dd=20191101-20301231
14. 13 use oomezd
15. 12 or 14
16. animals/ not humans/
17. nonhuman/
18. exp Animal Experiment/
19. exp Experimental Animal/
20. animal model/
21. exp Rodent/
22. (rat or rats or mouse or mice).ti.
23. 16 or 17 or 18 or 19 or 20 or 21 or 22
24. 15 not 23
25. 24 use oomezd
26. animals/ not humans/
27. exp Animals, Laboratory/
28. exp Animal Experimentation/
29. exp Models, Animal/
30. exp Rodentia/
31. (rat or rats or mouse or mice).ti.
32. or/26-31
33. 15 not 32
34. 33 use ppez
35. 25 or 34
36. exp Heparin/ or heparin\*.mp. or exp heparin derivative/
37. exp Heparin, Low-Molecular-Weight/
38. dalteparin/ or enoxaparin/ or nadroparin/ or heparinoids/ or Acenocoumarol/ or Phenprocoumon/ or warfarin/ or ardeparin/ or tinzaparin/ or certoparin/ or reviparin/ or danaparoid/ or bemiparin/ or fluindione/ or antivitamin k/ or warfarin/ or fondaparinux/
39. (LMWH or LMWHs or low molecular weight heparin or nadroparin or fraxiparin\* or enoxaparin\* or clexane or klexane or lovenox or dalteparin or fragmin or ardeparin\* or normiflo or tinzaparin or logiparin or innohep or certoparin or sandoparin or reviparin or clivarin\* or danaproid or danaparoid or organan or antixarin or bemiparin\* or hibor or zibor or ivor or badyket or semuloparin or parnaparin or tedelparin or fluxum or lohepa or lowhepa or parvoparin or seleparin\* or tedelgliparin or lomoparin or organan or sulodexide or zivor or embolex or xaparin or clivarine or acenocoumarol or sythrome or sinthrome or bemiparin or bivalirudin or angiomas or anglox or fluindione or previscan or phenprocoumon or marcumar or marcoumar or "vitamin K antagonist\*" or warfarin or coumadin or marevan or Jantoven or Coumadine or waran or rodex or fondaparinux ro arixtra).mp.
40. (FR-860 or FR 860 or FR860 or PK-10,169 or PK 10,169 or PK10,169 or PK-10169 or PK 10169 or PK10169 or EMT-967 or EMT 967 or EMT967 or EMT-966 or EMT 966 or EMT966 or CY 216 or CY-216 or CY216 or LMF CY-216 or LMF CY 216 or LMF CY216).mp.
41. (FR-860 or FR 860 or FR860 or PK-10,169 or PK 10,169 or PK10,169 or PK-10169 or PK 10169 or PK10169 or EMT-967 or EMT 967 or EMT967 or EMT-966 or EMT 966 or EMT966 or CY 216 or CY-216 or CY216 or LMF CY-216 or LMF CY 216 or LMF CY216).mp.
42. or/36-41
43. exp Heparin/ or "Heparin, Low-Molecular-Weight"/
44. (un?fract\* adj heparin).mp.
45. UFH.mp.
46. ((sodium or alpha) adj1 heparin).mp.
47. (Hepalean or Calcilean or Calciparine or Liquaemin or Liquemin or Multiparin or Novoheparin or Eparina or Hep-lock or Heparinate or Heparinic acid or Panheprin or Hepalean or Heparin Leo or Heparin Lock).mp.
48. or/43-47
49. 42 or 48
50. 34 and 49
51. 25 and 49
52. 50 or 51
53. remove duplicates from 52

54. Rivaroxaban/
55. factor Xa Inhibitors/
56. Factor Xa/ or antithrombins/ or Dabigatran/
57. (thrombin and inhib\*).mp.
58. (oac or noacs or doac).mp.
59. (dabigatran or melagatran or factor Xa or factor 10a or fXa or xaban\* or apixaban or betrixaban or eribaxaban or otamixaban or razaxaban or rivaroxaban or darexaban or edoxaban or Eliquis or "BMS-562247" or argatroban or Acova or PRT054021 or dabigatran or pradaxa or "BIBR 1048" or "BIBR 953" or "DU-176" or Savaysa or Xarelto or "BAY 59 7939" or "BAY 597939" or argatroban or acova).mp.
60. or/54-59
61. 34 and 60
62. Factor Xa Inhibitors.mp. or exp blood clotting factor 10a inhibitor/
63. Factor Xa.mp. or exp blood clotting factor 10a/
64. Antithrombins.mp. or exp antithrombin/
65. exp dabigatran/ or Dabigatran.mp.
66. factor 10a.mp.
67. fxa.mp.
68. xaban\*.mp.
69. (apixaban or Eliquis or "BMS-562247").mp. or exp apixaban/
70. (betrixaban or PRT054021).mp. or exp betrixaban/
71. eribaxaban.mp. or exp eribaxaban/
72. otamixaban.mp. or exp otamixaban/
73. razaxaban.mp. or exp razaxaban/
74. (rivaroxaban or Xarelto or "BAY 59 7939" or "BAY 597939").mp. or exp rivaroxaban/
75. darexaban.mp. or exp darexaban/
76. (edoxaban or "DU-176" or Savaysa).mp. or exp edoxaban/
77. melagatran.mp. or exp melagatran/
78. (dabigatran or Pradaxa or "BIBR 1048" or "BIBR 953").mp. or exp dabigatran/
79. (argatroban or acova).mp. or argatroban/
80. (noacs or oac or doac).mp.
81. (thrombin and inhib\*).mp.
82. or/62-81
83. 25 and 82
84. 61 or 83
85. remove duplicates from 84
86. exp Platelet Aggregation Inhibitors/
87. antiplatelet.mp. or (platelet adj2 (inhibit\* or antagonist\* or antiaggregant\*)).ti,ab,kw.
88. (acetylsalicylic acid or aspirin or cangrelor or kengreal or caplacizumab or cablivi or cilostazol or cilostazole or cilostazolium or pletaal or pletal or clopidogrel or iscover or Plavix or thrombo or zylit or diyridamole or agilease or anginal or apricor or cardioflux or cardoxin or chilcolan or cleridium or corbion or coronairne, or corosan or coroxin or curantyl or dipiridamol or dipyridamine or dipyridamole or dipyridamolium or dipyridan or dipyudamine or gullisotin or justperten or kurantil or natyl or peridamol or permiltin or persantin or persantine or piroan or pasugrel or effient or ticlopidine or panaldine or ticlid or ticlodix or ticlone or ticlopidine or tiklid or ticagrelor or brilinta or ticagrelor or triflusal or aflen or disgren or frendis or triflusal or triflusalum).ti,ab,kw.
89. or/86-88
90. 34 and 89
91. exp Anti-thrombocytic agent/
92. antiplatelet.mp. or (platelet adj2 (inhibit\* or antagonist\* or antiaggregant\*)).ti,ab,kf.
93. (acetylsalicylic acid or aspirin or cangrelor or kengreal or caplacizumab or cablivi or cilostazol or cilostazole or cilostazolium or pletaal or pletal or clopidogrel or iscover or Plavix or thrombo or zylit or diyridamole or agilease or anginal or apricor or cardioflux or cardoxin or chilcolan or cleridium or corbion or coronairne, or corosan or coroxin or curantyl or dipiridamol or dipyridamine or dipyridamole or dipyridamolium or dipyridan or dipyudamine or gullisotin or justperten or kurantil or natyl or peridamol or permiltin or persantin or persantine or piroan or pasugrel or effient or ticlopidine or panaldine or ticlid or ticlodix or ticlone or ticlopidine or tiklid or ticagrelor or brilinta or ticagrelor or triflusal or aflen or disgren or frendis or triflusal or triflusalum).ti,ab,kf.
94. or/91-93
95. 25 and 94
96. 90 or 95
97. 52 or 61 or 83 or 96

## Epistemonikos COVID-19 Evidence

Prevention or treatment AND Antithrombotic agents

WHO COVID-19 Database (20 August 2020)

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov>)

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(Medline, Embase, and preprint servers excluded)

tw:(anticoagula\* OR anti-coagula\* OR coagulation OR thromb\* OR antithromb\* OR heparin OR lmwh\* OR dalteparin OR enoxaparin OR nadroparin OR heparinoids OR acenocoumarol OR phenprocoumon OR warfarin OR ardeparin OR tinzaparin OR certoparin OR reviparin OR danaparoid OR fluindione OR "antivitamin k" OR fraxiparin\* OR enoxaparin\* OR clexane OR klexane OR lovenox OR fragmin OR ardeparin\* OR normiflo OR tinzaparin OR logiparin OR innohep OR certoparin OR sandoparin OR reviparin OR clivarin\* OR danaproid OR danaparoid OR orgaran OR antixarin OR bemiparin\* OR hibor OR zibor OR ivor OR badyket OR semuloparin OR parnaparin OR tedelparin OR fluxum OR lohepa OR lowhepa OR parvoparin OR seleparin\* OR tedelgliparin OR lomoparan OR orgaran OR sulodexide OR zivor OR emborex OR xaparin OR clivarine OR acenocoumarol OR sythrom OR sinthrome OR bivalirudin OR angiomas OR anglox OR previscan OR marcumar OR marcoumar OR "vitamin K antagonist\*" OR coumadin OR marevan OR jantoven OR coumadine OR waran OR rodex OR hepalean OR calcilean OR calciparine OR liquaemin OR liquemin OR multiparin OR novoheparin OR eparina OR hep-lock OR heparinate OR heparinic acid OR panheprin OR hepalean OR heparin leo OR heparin lock OR fondaparinux.or arixtra OR oac OR noacs OR doac OR dabigatran OR melagatran OR "factor xa" OR "factor 10a" OR fxa OR xaban\* OR apixaban OR betrixaban OR eribaxaban OR otamixaban OR razaxaban OR rivaroxaban OR darexaban OR edoxaban OR eliquis OR "BMS-562247" OR argatroban OR acova OR prt054021 OR dabigatran OR pradaxa OR "BIBR 1048" OR "BIBR 953" OR "DU-176" OR savaysa OR xarelto OR "BAY 59 7939" OR "BAY 597939" OR argatroban OR acova or **"Platelet Aggregation Inhibitor\*" or "antiplatelet or platelet antagnoist\*" or "platelet antiaggregant\*" or "acetylsalicylic acid" or aspirin or cangrelor or kengreal or caplacizumab or cablivi or cilostazol or cilostazole or cilostazolium or pletaal or pletal or clopidogrel or iscover or Plavix or thrombo or zylit or diyridamole or agilease or anginal or apricor or cardioflux or cardoxin or chilcolan or cleridium or corbion or coronairne, or corosan or coroxin or curantyl or dipiridamol or dipyridamine or dipyridamole or dipyridamolum or dipyridan or dipyudamine or gullisotin or justpertin or kurantil or natyl or peridamol or permiltin or persantin or persantine or piroan or pasugrel or effient or ticlopidine or panaldine or ticlid or ticlodix or ticlodone or ticlopidine or tiklid or ticagrelor or brilinta or ticagrelor or triflusal or aflen or disgren or frendis or triflusal or triflusalum)** AND db:(**"COVIDWHO" OR "ICTRP" OR "CNKI\_Lanzhou" OR "ELSEVIER" OR "LILACS" OR "GREY-COVIDWHO" OR "WPRIM" OR "SciFinder" OR "CPlus" OR "Web of Science"**)