

Supplementary Appendix 1. Search strategy for the systematic review and meta-analysis

COVID-19 AND (ACEI or ARB)

Pubmed

#1. COVID-19

((((novel[Title/Abstract]) AND ((corona[Title/Abstract]) AND virus[Title/Abstract]) OR (coronavirus[Title/Abstract]))) OR ((COVID[Title/Abstract]) OR (COVID-19[Title/Abstract]) OR (nCoV[Title/Abstract]) OR (2019-nCoV[Title/Abstract]) OR (Novel Coronavirus Pneumon.ia[Title/Abstract]) OR (NCP[Title/Abstract]) OR (severe acute respiratory infection[Title/Abstract]) OR (SARI[Title/Abstract]) OR (SARS-CoV-2[Title/Abstract])))

#2. ARB

("Angiotensin Receptor Antagonists"[Mesh]) OR (((angiotensin receptor blocker[Title/Abstract]) OR angiotensin receptor blockers[Title/Abstract]) OR ARB.*[Title/Abstract]) OR (((angiotensin[Title/Abstract]) AND receptor[Title/Abstract]) AND (antagonist.*[Title/Abstract] OR inhibitor.*[Title/Abstract] OR blocker.*[Title/Abstract])) OR (ARB[Title/Abstract])

OR

(olmesartan[Title/Abstract]) OR (valsartan[Title/Abstract]) OR (eprosartan[Title/Abstract]) OR (irbesartan[Title/Abstract]) OR (candesartan[Title/Abstract]) OR (losartan[Title/Abstract]) OR (telmisartan[Title/Abstract]) OR (azilsartan[Title/Abstract]) OR (tasosartan[Title/Abstract]) OR (embusartan[Title/Abstract]) OR (forasartan[Title/Abstract]) OR (milfasartan[Title/Abstract]) OR (sapisartan[Title/Abstract]) OR (zolasartan[Title/Abstract])

#3. ACE inhibitor

("Angiotensin-Converting Enzyme Inhibitors"[Mesh]) OR ((angiotensin converting enzyme inhibitor[Title/Abstract]) OR ACE inhibitor[Title/Abstract]) OR (((angiotensin[Title/Abstract]) AND converting[Title/Abstract]) AND enzyme[Title/Abstract]) AND (antagonist.*[Title/Abstract] OR inhibitor.*[Title/Abstract] OR blocker.*[Title/Abstract]))

OR

(alacepril[Title/Abstract]) OR altiopril[Title/Abstract] OR ancovenin[Title/Abstract] OR benazepril[Title/Abstract] OR captopril[Title/Abstract] OR ceranapril[Title/Abstract] OR ceronapril[Title/Abstract] OR

cilazapril[Title/Abstract] OR deacetylalacepril[Title/Abstract] OR delapril[Title/Abstract] OR enalapril[Title/Abstract] OR epicaptopril[Title/Abstract] OR foroxymithine[Title/Abstract] OR fosinopril[Title/Abstract] OR idrapril[Title/Abstract] OR imidapril[Title/Abstract] OR indolapril[Title/Abstract] OR libenzapril[Title/Abstract] OR lisinopril[Title/Abstract] OR moexipril[Title/Abstract] OR moveltipril[Title/Abstract] OR pentopril[Title/Abstract] OR perindopril[Title/Abstract] OR pivopril[Title/Abstract] OR quinapril[Title/Abstract] OR ramipril[Title/Abstract] OR rentiapril[Title/Abstract] OR nitrosocaptopril[Title/Abstract] OR spirapril[Title/Abstract] OR temocapril[Title/Abstract] OR trandolapril[Title/Abstract] OR utibapril[Title/Abstract] OR zabicipril[Title/Abstract] OR zofenopril[Title/Abstract] OR teprotide[Title/Abstract])

#1 AND (#2 OR #3)

N= 80 (2020.5.4)

EMBASE

#1. COVID-19

'novel':ab,ti AND ('corona':ab,ti AND 'virus':ab,ti OR 'coronavirus':ab,ti OR 'coronavirus pneumonia':ab,ti) OR 'covid':ab,ti OR 'covid 19':ab,ti OR 'ncov':ab,ti OR '2019 ncov':ab,ti OR 'ncp':ab,ti OR 'sari':ab,ti OR 'sars cov 2':ab,ti

#2. ARB

'angiotensin receptor antagonist'/exp

OR

'angiotensin receptor blocker':ti,ab,kw OR 'angiotensin receptor blockers':ti,ab,kw OR arb.*:ti,ab,kw OR (angiotensin:ti,ab,kw AND receptor:ti,ab,kw AND (antagonist.*:ti,ab,kw OR inhibitor.*:ti,ab,kw OR blocker.*:ti,ab,kw)) OR arb:ti,ab,kw

OR

(olmesartan:ti,ab,kw) OR (valsartan:ti,ab,kw) OR (eprosartan:ti,ab,kw) OR (irbesartan:ti,ab,kw) OR (candesartan:ti,ab,kw) OR (losartan:ti,ab,kw) OR (telmisartan:ti,ab,kw) OR (azilsartan:ti,ab,kw) OR (tasosartan:ti,ab,kw) OR (embusartan:ti,ab,kw) OR (forasartan:ti,ab,kw) OR (milfasartan:ti,ab,kw) OR (sapisartan:ti,ab,kw) OR (zolasartan:ti,ab,kw)

#3. ACE inhibitor

'dipeptidyl carboxypeptidase inhibitor'/exp

OR

'angiotensin converting enzyme inhibitor':ti,ab,kw OR 'ace inhibitor':ti,ab,kw OR (angiotensin:ti,ab,kw AND converting:ti,ab,kw AND enzyme:ti,ab,kw AND (antagonist.*:ti,ab,kw OR inhibitor.*:ti,ab,kw OR blocker.*:ti,ab,kw))

OR

(alacepril:ti,ab,kw OR altiopril:ti,ab,kw OR ancovenin:ti,ab,kw OR benazepril:ti,ab,kw OR captopril:ti,ab,kw OR ceranapril:ti,ab,kw OR ceronapril:ti,ab,kw OR cilazapril:ti,ab,kw OR deacetylalacepril:ti,ab,kw OR delapril:ti,ab,kw OR enalapril:ti,ab,kw OR epicaptopril:ti,ab,kw OR foroxymithine:ti,ab,kw OR fosinopril:ti,ab,kw OR idrapril:ti,ab,kw OR imidapril:ti,ab,kw OR indolapril:ti,ab,kw OR libenzapril:ti,ab,kw OR lisinopril:ti,ab,kw OR moexipril:ti,ab,kw OR moveltipril:ti,ab,kw OR pentopril:ti,ab,kw OR perindopril:ti,ab,kw OR pivopril:ti,ab,kw OR quinapril:ti,ab,kw OR ramipril:ti,ab,kw OR rentiapril:ti,ab,kw OR nitrosocaptopril:ti,ab,kw OR spirapril:ti,ab,kw OR temocapril:ti,ab,kw OR trandolapril:ti,ab,kw OR

utibapril:ti,ab,kw OR zabcipril:ti,ab,kw OR zofenopril:ti,ab,kw OR teprotide:ti,ab,kw)

#1 AND (#2 OR #3)

N=99 (2020.5.4)

Cochrane

#1. COVID-19

(novel:ti,ab,kw AND (corona:ti,ab,kw AND virus:ti,ab,kw OR coronavirus:ti,ab,kw OR (coronavirus pneumonia:ti,ab,kw)))

OR

(COVID-19:ti,ab,kw OR SARS-CoV-2:ti,ab,kw)

#2. ARB

MeSH descriptor: [Angiotensin Receptor Antagonists] explode all trees

OR

(angiotensin receptor blocker:ti,ab,kw) OR (angiotensin receptor blockers):ti,ab,kw OR arb.*:ti,ab,kw OR (angiotensin:ti,ab,kw AND receptor:ti,ab,kw AND (antagonist.*:ti,ab,kw OR inhibitor.*:ti,ab,kw OR blocker.*:ti,ab,kw)) OR arb:ti,ab,kw

OR

(olmesartan:ti,ab,kw) OR (valsartan:ti,ab,kw) OR (eprosartan:ti,ab,kw) OR (irbesartan:ti,ab,kw) OR (candesartan:ti,ab,kw) OR (losartan:ti,ab,kw) OR (telmisartan:ti,ab,kw) OR (azilsartan:ti,ab,kw) OR (tasosartan:ti,ab,kw) OR (embusartan:ti,ab,kw) OR (forasartan:ti,ab,kw) OR (milfasartan:ti,ab,kw) OR (sapisartan:ti,ab,kw) OR (zolasartan:ti,ab,kw)

#3. ACE inhibitor

MeSH descriptor: [Angiotensin-Converting Enzyme Inhibitors] explode all trees

OR

(angiotensin converting enzyme inhibitor:ti,ab,kw) OR (ace inhibitor:ti,ab,kw) OR (angiotensin:ti,ab,kw AND converting:ti,ab,kw AND enzyme:ti,ab,kw AND (antagonist.*:ti,ab,kw OR inhibitor.*:ti,ab,kw OR blocker.*:ti,ab,kw))

OR

(alacepril:ti,ab,kw OR altiopril:ti,ab,kw OR ancovenin:ti,ab,kw OR benazepril:ti,ab,kw OR captopril:ti,ab,kw OR ceranapril:ti,ab,kw OR ceronapril:ti,ab,kw OR cilazapril:ti,ab,kw OR deacetylalacepril:ti,ab,kw OR delapril:ti,ab,kw OR enalapril:ti,ab,kw OR epicaptopril:ti,ab,kw OR foroxymithine:ti,ab,kw OR fosinopril:ti,ab,kw OR idrapril:ti,ab,kw OR imidapril:ti,ab,kw OR indolapril:ti,ab,kw OR libenzapril:ti,ab,kw OR lisinopril:ti,ab,kw OR moexipril:ti,ab,kw OR moveltipril:ti,ab,kw OR pentopril:ti,ab,kw OR perindopril:ti,ab,kw

OR pivopril:ti,ab,kw OR quinapril:ti,ab,kw OR ramipril:ti,ab,kw OR rentiapril:ti,ab,kw OR nitrosocaptopril:ti,ab,kw OR spirapril:ti,ab,kw OR temocapril:ti,ab,kw OR trandolapril:ti,ab,kw OR utibapril:ti,ab,kw OR zabicipril:ti,ab,kw OR zofenopril:ti,ab,kw OR teprotide:ti,ab,kw)

#1. AND (#2. OR #3.)

N=0 (2020.5.4)

MedRxiv

(abstract or title "COVID-19" or "SARS-Cov-2" or "nCov" or "coronavirus" (match any words))

AND

(full text or abstract or title "angiotensin" (match all words))

AND

Posted date: Since 2020.01.01

N=216 (2020.5.4)

Social Science Research Network (SSRN)

((COVID-19 AND angiotensin) OR (SARS-Cov-2 AND angiotensin) OR (nCov AND angiotensin) OR (coronavirus AND angiotensin))

AND

Posted date: Since 2020.01.01

N=28 (2020.5.4)

Peer J

((COVID-19 AND angiotensin) OR (SARS-Cov-2 AND angiotensin) OR (nCov AND angiotensin) OR (coronavirus AND angiotensin))

AND

Posted date: Since 2020.01.01

N=5 (2020.5.4)