

Angiotensin-converting-enzyme inhibitors and angiotensin II receptor blockers for COVID-19: A living systematic review of randomized clinical trials

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Appendix 1: Included, excluded and ongoing studies

Included studies

No studies were found.

Excluded studies

Epistemonikos ID	Title	Reason for exclusion
51dafa-fcd8246676aac8b2a1f8e1d976a38270c5	[2019 novel coronavirus, angiotensin converting enzyme 2 and cardiovascular drugs].	Wrong study design
b7e9371d6765ab581b77b6b3bc3a940b8ff1df42	[2019 Novel coronavirus, renin-angiotension system imbalance and coronavirus disease 2019].	Wrong study design
d14efca0145d6dde74a9b8b8161ea117ecfab7e	[ACE-inhibitors, angiotensin receptor blockers and severe acute respiratory syndrome caused by coronavirus].	Wrong study design
c840e055144059aaccb4b338a406f056372f6189	[Controversy regarding ACE inhibitors / ARBs in Covid-19].	Wrong study design
a0549f86c092b382f111efe8a59efec0a120471c	[COVID-19 and its relationship with hypertension and cardiovascular disease].	Wrong study design
b6acf950f739ec3faf9b25b346d58c467ec30053	[COVID-19 and kidney disease].	Wrong study design
19698ee0054a0f9a32b87a6db6570ba3d8506bc2	[COVID-19, THE KIDNEY AND HYPERTENSION].	Wrong study design
9ace3e707665589001ecea644fcd977e0099e5c5	[Drugs that aggravate the course of COVID-19: really ?]	Wrong study design
658e355faa7b6157ec55e25e5bb95335af0b80f2	[Hypertension and RAAS inhibition in times of COVID-19 - current recommendations of the European Society of Hypertension.]	Wrong study design
99f6f0c3e9ba4b6d6cbf5398c89926cdff34e0e6	[Hypertension, RAAS blockade and risk in COVID-19 patients].	Wrong study design

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7692736b67ae68202b994149c065851c73c31846	[Inhibitors of RAS Might Be a Good Choice for the Therapy of COVID-19 Pneumonia].	Wrong study design
fd766d3ddc4567e108b25af6b45f3e536799993a	[Inhibitors of RAS Might Be a Good Choice for the Therapy of COVID-19 Pneumonia].	Wrong study design
74248fbc8ec48debd57ef4363fe350b7492ab6c3	[Lessons from SARS: a new potential therapy for acute respiratory distress syndrome (ARDS) with angiotensin converting enzyme 2 (ACE2)].	Wrong study design
4c2d3603ac2d937be4533bc2d2876b85684af99d	[Medication and comedication in COVID-19 patients].	Wrong study design
8e69fcd05b56fb31a59f8f69298d401cac6daab7	[Preliminary clinical study of direct renin inhibitor aliskiren in the treatment of severe COVID-19 patients with hypertension].	Wrong intervention
117af5230854d53176761c6870086691b3d80f08	[Renin-angiotensin system blockers and COVID-19 infection].	Wrong study design
b50de2996a763848ae1990b8332ad133d6581330	[Renin-angiotensin-aldosterone blockers and Covid-19 infection: friends or enemies ?]	Wrong study design
1144e35665d1862a724bbfcff76978e4b6cc022e	[Renin-Angiotensin-System (RAS) and COVID-19 - On The Prescription of RAS Blockers].	Wrong study design
77a9cd2d725be49c9405fbacc6aa3758879554ac	[Role of age, comorbidity and renin- angiotensin-aldosterone system in COVID-19. Effects of ACE inhibitors and angiotensin receptor blockers].	Wrong study design
173f5aebc7fc65f946e05227e3ffd2487e2ddcd1	[Scientific statement on using of renin angiotensin system blockers in patients with cardiovascular disease and COVID-19].	Wrong study design
88d8742e776d0e8ec344b09fe699d622880f1979	[The RAAS and SARS-CoV-2: A riddle to solve].	Wrong study design

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1aca-bcf2b1fcd43861779e311d8724505207878f	2019 novel coronavirus: what is currently known, cardiovascular implications and management.	Wrong study design
894305b677389471088095786a9d6ca1229b8130	2019 novel-coronavirus: Cardiovascular insights about risk factors, myocardial injury, therapy and clinical implications	Wrong study design
dd3e0e8b4f21c9b67a00a2e49256b7976a187ded	A Comprehensive Literature Review on the Clinical Presentation, and Management of the Pandemic Coronavirus Disease 2019 (COVID-19).	Wrong study design
4ff53cc143ef31d9df8884d9544d91bc4fc1159a	A consensus statement on the use of angiotensin receptor blockers and angiotensin converting enzyme inhibitors in relation to COVID-19 (corona virus disease 2019).	Wrong study design
2cecb2777e82bff611494ef649c943ae9e7b2218	A global treatments for coronaviruses including COVID-19.	Wrong study design
92bd255acb9a6f07582773c661d90695e661ff4f	A human neutralizing antibody targets the receptor binding site of SARS-CoV-2.	Wrong study design
e267d737ffec9e65f58496090c59e2d2fd26657c	A hypothesis for pathobiology and treatment of COVID-19: the centrality of ACE1/ACE2 imbalance.	Wrong study design
6acef577c6a0963c7c71425950b1add0c0033d54	A Meta-analysis of the Relationship Between Renin-Angiotensin-Aldosterone System Inhibitors and COVID-19.	Wrong study design
deb4dfa407710411a686de1b82ce426da170d7d9	A Network Medicine Approach to Investigation and Population-based Validation of Disease Manifestations and Drug Repurposing for COVID-19.	Wrong study design

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a5456750f7cd9f9c441fa511fafb2cd4e51956a8	A potential protective role of losartan against coronavirus-induced lung damage.	Wrong study design
4d2a030ef947c41ae9e28abf9bac484b5021b2f6	A systematic review and meta-analysis to evaluate the clinical outcomes in COVID-19 patients on angiotensin-converting enzyme inhibitors or angiotensin receptor blockers.	Wrong study design
311ef551e8a4faef99df4daccf74391cabf2bf0b	A systematic review to evaluate the clinical outcomes in COVID -19 patients on angiotensin converting enzyme inhibitors or angiotensin receptor blockers	Wrong study design
7172f457ead3953cfc6a4e329f8ebf735f2afeb3	A Viewpoint on Angiotensin-Converting Enzyme 2, Anti-Hypertensives and Coronavirus Disease 2019 (COVID-19).	Wrong study design
8f9801ae2d2ec320176db6443ba9525eb1a0b32b	ACE inhibition and cardiometabolic risk factors, lung ACE2 and TMPRSS2 gene expression, and plasma ACE2 levels: a Mendelian randomization study	Wrong study design
69c2278b9c24f939bf7f503c017fa6efb54baa67	ACE Inhibitors and ARBs in Patients with COVID-19: Friend or Foe?	Wrong study design
99ba3e575c1a14527e5528f4db782ae9180b1d4f	ACE inhibitors and COVID-19: We don't know yet.	Wrong study design
d13dc3e6a8e970b972e69959c41b7d82fe34115a	ACE inhibitors/ARB use and COVID-19. Time to change practice or keep gathering data?	Wrong study design
065e8a81c3651fef0868a2e2051e0234bae22d67	ACE2 and COVID-19 and the resulting ARDS.	Wrong study design
4067c593205ae932b07312f86d4d389cc4f832e8	ACE2 and prognosis of COVID-19. Insights from Bartter's and Gitelman's syndromes patients.	Wrong study design

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42552661b2e7566cb82d704b8a98d957bae6ba02	ACE2 as a Therapeutic Target for COVID-19; its Role in Infectious Processes and Regulation by Modulators of the RAAS System.	Wrong study design
ef52203b12a48fa4b1e9097b394d258262048a76	ACE2 the Janus-faced protein - from cardiovascular protection to severe acute respiratory syndrome-coronavirus and COVID-19.	Wrong study design
ba2c1dd9ea9db292fa1d8aa41ff82d79b08db63c	ACE2, COVID-19, and ACE Inhibitor and ARB Use during the Pandemic: The Pediatric Perspective.	Wrong study design
5fc48a6a252404f4bda3264d55eac7db60c6b54e	ACE2, Much More Than Just a Receptor for SARS-COV-2.	Wrong study design
691adf55311463a5a256958a55f62202d21b593e	ACE2, the Receptor that Enables the Infection by SARS-CoV-2: Biochemistry, Structure, Allostery and Evaluation of the Potential Development of ACE2 Modulators.	Wrong study design
85b40529a8142d110930f435b9868c6822ba7170	ACEi and ARB with COVID-19.	Wrong study design
b633c5428f7d2ac8f0c511bb384538703136bdf3	ACEI/ARB Use and Risk of Infection or Severity or Mortality of COVID-19: A Systematic Review and Meta-analysis.	Wrong study design
b9901d9447300bbf9a0146d8850567afca9270a2	ACUTE AORTIC DISSECTION SURGERY IN PATIENT WITH COVID-19.	Wrong study design
fded3f936fe3bfca32880839736aac40b72ef0ba	Acute Kidney Injury in a Case Series of Patients with Confirmed COVID-19 (Coronavirus Disease 2019): Role of Angiotensin-Converting Enzyme 2 and Renin-Angiotensin System Blockade.	Wrong study design

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1d5fbab274a55d13cf42d8ed5bd0d5f830fe23b8	Advanced bioinformatics rapidly identifies existing therapeutics for patients with coronavirus disease-2019 (COVID-19).	Wrong study design
0b84e0055a22045eeb0721e4938358a2d9499590	An immunotherapeutic method for COVID-19 patients: a soluble ACE2-Anti-CD16 VHH to block SARS-CoV-2 Spike protein.	Wrong study design
2613b7005f82e69b56f057c57020ce77074727a1	An update on ACE2 amplification and its therapeutic potential.	Wrong study design
62dff4325b29b345c984808c6d241495129c8180	Angiotensin converting enzyme 2 (ACE2) and COVID-19: using antihypertensive medications, pharmacogenetic considerations.	Wrong study design
d1038e2aed5d247156fb6a62fa0d3369157edd13	Angiotensin Converting Enzyme 2: SARS-CoV-2 Receptor and Regulator of the Renin-Angiotensin System.	Wrong study design
6ed81e30d3f149c69764482901edebc0477c56b7	Angiotensin Converting Enzyme Inhibitors and Angiotensin Receptor Blockers and Outcome of COVID-19: A Systematic Review and Meta-analysis	Wrong study design
f79d5fb95afbadf13c39e362f83ff31ccd1543e5	Angiotensin II Receptors - Impact for COVID-19 Severity.	Wrong study design
4d698ca49bd01138e25de674a17ccf28980531a4	Angiotensin Receptor Blockers and 2019-nCoV.	Wrong study design
fea7e4d4dc4a92a56fd0382229011098608c082c	Angiotensin receptor blockers as tentative SARS-CoV-2 therapeutics.	Wrong study design
5748b36b6bc9b0cbb4a1d900a51078690be01891	Angiotensin receptor blockers for the treatment of covid-19 and its comorbidities.	Wrong study design
5ee2331f7622a991216c359b9bf6a7998bc7d033	Angiotensin-(1-7) and Obesity: Role on cardiorespiratory fitness and COVID-19 implications.	Wrong study design

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3844300acf19aa5ddad6c247dea2a99220e5a801	Angiotensin-(3-4) modulates angiotensin converting enzyme 2 (ACE2) downregulation in proximal tubule cells due to overweight and undernutrition: implications regarding the severity of renal lesions in Covid-19 infection	Wrong study design
68950fe4430d0bea1cb2442dd22efff5d6283cb2	Angiotensin-converting enzyme 2 (ACE2) expression increases with age in patients requiring-mechanical ventilation.	Wrong study design
6dcc74fc2987dde219d3f4de10cab6383b78442	Angiotensin-Converting Enzyme 2 and Antihypertensives (Angiotensin Receptor Blockers and Angiotensin-Converting Enzyme Inhibitors) in Coronavirus Disease 2019	Wrong study design
48b49a3754f38985f5250b6294740469effb4389	Angiotensin-converting enzyme inhibitors and angiotensin receptor blocker in coronavirus disease 2019: Safe and possibly beneficial.	Wrong study design
063e367728e0b05f187219f09c7a253af5df1b1c	Angiotensin-Converting Enzyme Inhibitors and Angiotensin Receptor Blockers in Patients With Coronavirus Disease 2019: Friend or Foe?	Wrong study design
ebe9f3f072a32530c1d3e192af94fc096a1ab6cf	Angiotensin-converting enzyme inhibitors and angiotensin receptor blockers may be harmful in patients with diabetes during COVID-19 pandemic.	Wrong study design
4ef2eada8790fd1f8a1c21e7ae731c983516295a	Angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers and coronavirus.	Wrong study design

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fa344fed20dfbe055037d7599bb4830da3114e29	Angiotensin-converting enzyme inhibitors, angiotensin II type 1 receptor blockers and risk of COVID 19: information from Bartter's and Gitelman's syndromes patients.	Wrong study design
cd982381ad41325ea326a756f0fbf9ba553a89fc	Angiotensin-converting enzyme-2 (ACE2), SARS-CoV-2 and pathophysiology of coronavirus disease 2019 (COVID-19).	Wrong study design
950e3e9ce3fd4ee08e1d216629f5ee48d22ee00d	Angiotensin-converting-enzyme inhibitors (ACE inhibitors) and Angiotensin II receptor blocker (ARB) Use in COVID-19 prevention or treatment: A Paradox.	Wrong study design
7938e4c5a6faa3ab7ed13de1a9fcf3e142e5a565	Angiotensin-converting enzyme inhibitors and angiotensin-receptor blockers are not associated with increased risk of SARS-CoV-2 infection.	Wrong population
79a50b9c070149a8dd8cdaca9780dae60017005	ANNALS EXPRESS: Coronavirus disease 2019 (COVID-19) and the renin-angiotensin system: a closer look at angiotensin-converting enzyme 2 (ACE2).	Wrong study design
da7357f035546f4824995f76cae8e418394db74e	Antagonizing the renin-angiotensin-aldosterone system in the era of COVID-19.	Wrong study design
1f2b8ca30bee7becda1f1c31c63623067d7b3e4e	Anti-RAS drugs and SARS-CoV-2 infection.	Wrong study design
bb8c6dfe0d6a089673dd928ffb0858f491e87695	Antihypertensive medication uses and serum ACE2 levels	Wrong population
ba5907bc7cbe727dd15547f5937df0f639bda86a	Antihypertensive treatment with ACEI/ARB of patients with COVID-19 complicated by hypertension.	Wrong study design

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673faf23a6e89c3189703816439a8b2f7bed3d01	Association Between ACEIs or ARBs Use and Clinical Outcomes in COVID-19 Patients: A Systematic Review and Meta-analysis	Wrong study design
96244b03e261fbb7b90083dd97244a1f652976a9	Association between angiotensin-converting enzyme inhibitors and angiotensin II receptor blockers use and the risk of infection and clinical outcome of COVID-19: a comprehensive systematic review and meta-analysis.	Wrong study design
c2e188a058275ef5ace13342e768d259f8eb1930	Association of previous medications with the risk of COVID-19: a nationwide claims-based study from South Korea	Wrong population
1a8cd76be7b604ca38833b16a40af207bf63aea0	Association of Renin Angiotensin System Blockers with Outcomes in Patients with Covid-19: A Systematic Review and Meta-analysis	Wrong study design
1047aef98486b613b61a0a196954182d6d73c803	Blocking mineralocorticoid receptor with spironolactone may have a wide range of therapeutic actions in severe COVID-19 disease.	Wrong study design
45d405de02b71f1068a6f981170d5411db864088	Blood Targets of Adjuvant Drugs Against COVID19.	Wrong study design
493b8ecd3fb3de383897f41a0472fd2a6f6d01c2	Calcium channel blocker amlodipine besylate is associated with reduced case fatality rate of COVID-19 patients with hypertension	Wrong study design
b0624da2fe91087e0c971ff0643edfed0896a11d	Cardiac patients and COVID-19: What the general practitioner should know	Wrong study design
d61382f494423cc752214e3c879a27334c2738d5	Cardiovascular Disease and Use of Renin-Angiotensin System Inhibitors in COVID-19.	Wrong study design

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0ad463be494a2dec27857959941e28f e65c73816	Cardiovascular disease management during the coronavirus disease 2019 pandemic.	Wrong study design
f69e401f727af8308dcd8b2dd8970e6 497ea9f25	Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19.	Retracted article
a5d8b968b6740e8f8d107148983435 17957af9fa	Cardiovascular manifestations and treatment considerations in covid-19.	Wrong study design
75e0efdc91cbd7ad28ace4fae8ce8f0b 7737bd21	Cardiovascular medications and regulation of COVID-19 receptors expression	Wrong study design
ef130f490189dac71510e6c5d65591d 8ce74942c	Clinical and Genetic Characteristics of Covid-19 Patients from UK Biobank	Wrong population
bf11bbc97cd3bfec26a86a4e9caa8ce 1bf9dea4f	Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study.	Wrong intervention
385ae60eccb4453950e90a8ed94fc13 04cd233ba	Clinical experience with therapeutic dose of Low-Molecular-Weight Heparin.	Wrong study design
017d802e28534e2dbca34128e56f3c9 1b335706b	Clinical impact of renin-angiotensin system inhibitors on in-hospital mortality of patients with hypertension hospitalized for COVID-19.	Wrong study design
8ecce8540fdb75aa0564894494a9638 41842eb54	Clinical Implications of SARS-Cov2 Interaction with Renin Angiotensin System.	Wrong study design
db5209e69b36410082efd2c349db34 d6a488dc25	Clinical presentation and initial management critically ill patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in Brescia, Italy.	Wrong intervention

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e401deb8cfb020f53c3a2953ee326d41fe1ef8ab	Combination of Recombinant Bacterial ACE2 Receptors -Like Enzyme of B38-CAP and Isotretinoin Could be Promising COVID-19 Infection- and Lung Injury Preventing Drug Better Than Recombinant Human ACE2	wrong intervention
78c34849b299aed2e1ccdcf8e528a5f42ba83efe	Comment on "ACE inhibitors and COVID-19: We don't know yet".	Wrong study design
b9559084fc514d3cb85bf8dd6aab158e51288e26	Comparison of renin-angiotensin-aldosterone system inhibitors with other antihypertensives in association with coronavirus disease-19 clinical outcomes: systematic review and meta-analysis	Wrong study design
b91eba75b18bae2b43401a2fa3e56a840d2b0fb0	Comparisons of Staphylococcus aureus infection and other outcomes between users of angiotensin-converting-enzyme inhibitors and angiotensin II receptor blockers: lessons for COVID-19 from a nationwide cohort study.	Wrong population
c30377b9fae543271eb008057afd6e16f67ea1b6	Compliance of Antihypertensive Medication and Risk of Coronavirus Disease 2019: A Cohort Study Using Big Data from the Korean National Health Insurance Service.	Wrong population
040406b6e4f42274b3c6e759a14e1459df8f0272	Computational Design of Peptides to Block Binding of the SARS-CoV-2 Spike Protein to Human ACE2	Wrong study design
70a8b0894ebcf4a4f66e3804f1907a74304baf16	Considerations about the relationship between hypertension and the prognosis of COVID-19	Wrong study design

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67a3d10ada304275894b9962290ba6b56693b351	Contentious Issues and Evolving Concepts in the Clinical Presentation and Management of Patients with COVID-19 Infection with Reference to Use of Therapeutic and Other Drugs used in Co-morbid Diseases (Hypertension, Diabetes etc)	Wrong study design
d5a38bd406dd63ea09027302cf75c3a00cb171e9	Continue ACE inhibitors/ ARB'S till further evidence in Coronavirus disease 2019 (COVID-19).	Wrong study design
a5489c9736d126ec30a581b4f689869ade4aec61	Controversial Relationship between Renin-Angiotensin System Inhibitors and Severity of COVID-19: Announcing a Large Multicentre Case-Control Study in Italy.	Wrong study design
af971cbc013ca89bed585f848143b112018aac94	Controversies of renin-angiotensin system inhibition during the COVID-19 pandemic.	Wrong study design
65850e914a9a0987fbd71506ed6036e4a1766518	Controversy regarding ACE inhibitors / ARBs in COVID-19.	Wrong study design
8c3f6b5a4c8b7258e90092e1306406311bc307b2	Coronavirus Disease 2019 (COVID-19) and Cardiovascular Disease: A Viewpoint on the Potential Influence of Angiotensin-Converting Enzyme Inhibitors/Angiotensin Receptor Blockers on Onset and Severity of Severe Acute Respiratory Syndrome Coronavirus 2 Infection	Wrong study design
bf538797d1960243999b1b71cf271b68698bf952	Coronavirus Disease 2019 (COVID-19) Infection and Renin Angiotensin System Blockers.	Wrong study design
18c126ca7c24f795aabf6e2b0fc7a405762811e6	Coronavirus disease 2019 (COVID-19): angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers and cardiovascular disease.	Wrong study design

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b4c1c73e336b0e437c623cae55b9b471b9de7cb3	Coronavirus Disease 2019 (COVID-19): Do Angiotensin-Converting Enzyme Inhibitors/Angiotensin Receptor Blockers Have a Biphasic Effect?	Wrong study design
a15a4eb7f7b604eab32bb56794d0a35a7bb080a9	Coronavirus Pandemic-Therapy and Vaccines.	Wrong study design
f9ec570dca94dbca767b047bcab61fd058b9a13	Coronavirus: a clinical update of Covid-19.	Wrong study design
3a0f0f34f6a2149af3c10c8644fb5a83c08b0ba5	Correlation between renin-angiotensin system and Severe Acute Respiratory Syndrome Coronavirus 2 infection: What do we know?	Wrong study design
839137b0b86cf17776a72c6dc73d19bc959f1297	Could renin-angiotensin-aldosterone system inhibitors be used for hypertensive patients with coronavirus disease 2019?	Wrong study design
e5e1d99ee2573ce2302c5eb9bee5ac97fe5553ef	Counter-regulatory 'Renin-Angiotensin' System-based Candidate Drugs to Treat COVID-19 Diseases in SARS-CoV-2-infected patients.	Wrong study design
6b360f18fa6fd994bd855b069752fdd2cc6b3217	COVID 19 and heart failure: from infection to inflammation and angiotensin II stimulation. Searching for evidence from a new disease.	Wrong study design
0c2e36bd98058c9f904d8af0984eac6d3eda5b83	COVID-19 - Does This Disease Kill Due to Imbalance of the Renin Angiotensin System (RAS) Caused by Genetic and Gender Differences in the Response to Viral ACE 2 Attack?	Wrong study design
68d4190c2d00204d4adbb75641daae42f5b09ee	COVID-19 and Angiotensin-Converting Enzyme Inhibitor/Angiotensin-Receptor Blocker Therapy.	Wrong study design

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3c5c19906477755db2391b0f98bb4bfd783d851c	COVID-19 and Angiotensin-Converting Enzyme Inhibitors and Angiotensin Receptor Blockers: What Is the Evidence?	Wrong study design
d58a2dacb5ae8b7a40e0d04fb473456273e1a73c	COVID-19 and arterial hypertension: Hypothesis or evidence?	Wrong study design
58041be97e2fec1884f3ee5a0c9e6ce78db84d18	COVID-19 and cardiovascular diseases: viewpoint for older patients.	Wrong study design
bd7a5c79624f7da70c1d71c7417202483908756f	Covid-19 and cardiovascular risk: Susceptibility to infection to SARS-CoV-2, severity and prognosis of Covid-19 and blockade of the renin-angiotensin-aldosterone system. An evidence-based viewpoint.	Wrong study design
b715bf7cd2e68d6a73d2ee72fdf1f34105c24d20	COVID-19 and Diabetes: Knowledge in Progress.	Wrong study design
9c36e2a3c46228bfcc20eacaf54c30d52d529262	COVID-19 and hypertension-evidence and practical management: Guidance from the HOPE Asia Network.	Wrong study design
420b15f92526d232917f55bca701d1c7c0cf1a18	COVID-19 And Older Adults: What We Know.	Wrong study design
7b0085a7a1f333ac7641b884df1d651e570dda63	COVID-19 and RAS: Unravelling an Unclear Relationship.	Wrong study design
a7252cb693ed8d60dedb1b2c6a600b53b68e2507	COVID-19 and Renin Angiotensin Blockers: Current Evidence and Recommendations.	Wrong study design
10566eea559cbab56f1d78231fe7224ae9d939ed	COVID-19 and Renin-Angiotensin system inhibition - role of angiotensin converting enzyme 2 (ACE2) - Is there any scientific evidence for controversy?	Wrong study design

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5b09398bf82991f686b30a0ab90d536ae829b1c1	COVID-19 and the cardiovascular system: implications for risk assessment, diagnosis, and treatment options.	Wrong study design
3bc3c5c3815e46c3819026c2a65a3168d68550d2	COVID-19 and the heart: An update for clinicians.	Wrong study design
c17150b1070026102327d63a92fb388bdba8c3e3	COVID-19 and the RAAS-a potential role for angiotensin II?	Wrong study design
08e435700e12d063f57632a06fcc44fabb760724	COVID-19 and the RAAS.	Wrong study design
fd23e82ad-dfe0c5850700f3d2f4b0448eb7d71c5	COVID-19 and the role of angiotensin-converting enzyme inhibitors and angiotensin receptor blockers	Wrong study design
d5f7d241561fda7beb538c7eff1f1cc8703e92cf	COVID-19 Blood Pressure Endothelium Interaction Study (OBELIX)	Wrong intervention
90fefe9b4b83d4adb0143453cba744b8f78e5ae3	COVID-19 in diabetic patients: related risks and specifics of management.	Wrong study design
1bac43fbd9cedd84acdec3bd4babbfd8addf98d3a	COVID-19 pandemic and therapy with ibuprofen or renin-angiotensin system blockers: no need for interruptions or changes in ongoing chronic treatments.	Wrong study design
b3c3059a42fdec05f355f02e32492b5dff796fe1	COVID-19 Related Lockdown Effects On Chronic Diseases	Wrong population
e53bc6b85af83129b18c9333022d88465cf5c368	COVID-19, ACE -inhibitors and angiotensin receptor blockers-: The need to differentiate between early infection and acute lung injury	Wrong study design
e57d022ef1dbe3ef0a33be0bffbdbb38362c9041	COVID-19, ACE2 and the Cardiovascular Consequences.	Wrong study design
291c9c6f0558c6f74bb6c084f5a4ef59d24e3f08	COVID-19, ACEI/ARBs and gastrointestinal symptoms: the jury is still out on the association.	Wrong study design

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836ce91300cdf749add0a48fe43b028ee89dcc83	COVID-19, Angiotensin Receptor Blockers, and the Brain.	Wrong study design
af301fe046fde59990ef-faf07c7a3af458352d3	COVID-19, hypertension and cardiovascular diseases: Should we change the therapy?	Wrong study design
e94cf111213a5729e02940d383b6017097dab461	COVID-19, Renin-Angiotensin System and Endothelial Dysfunction.	Wrong study design
b3d1663237fd001bcaa6dd61d28ab0ac39d63bda	COVID-19: ACE2centric infective disease?	Wrong study design
8b779937b66a55ac210a5aaab643f326d68b5f75	COVID-19: is there a link between the course of infection and pharmacological agents in diabetes?	Wrong study design
3642c8f60705e87e6f091f1a1ed7d13030306f61	Covid-19: the renin-angiotensin system imbalance hypothesis.	Wrong study design
a0ea531c7578997dd1984d4cfc887203bd411f06	COVID-19: Updated Data and its Relation to the Cardiovascular System.	Wrong study design
c39472fb55da1dd1f3926c45533a791330c1b978	COVID19 inhibitors: A prospective therapeutics.	Wrong study design
8f3f74b1dc65ce23ab66ac832a69fcf89456b8d4	Curative anticoagulation prevents endothelial lesion in COVID-19 patients.	Wrong comparison
0f4872434fe8a9d1056377acedfb8a506bfd7759	Dangers of ACE inhibitor and ARB usage in COVID-19: evaluating the evidence	Wrong study design
06f3f62de34852f0ef65a5ced6a1a4d60f0ca8d1	Decreased Mortality of COVID-19 with Renin-Angiotensin-Aldosterone System Inhibitors Therapy in Patients with Hypertension:A Meta-Analysis.	Wrong study design
e1b3d7d1044254f1779c050ea2a753175962a165	Diabetes and COVID-19: evidence, current status and unanswered research questions.	Wrong study design

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5c83e27ff92804153694dd7ebd7c7aba55b37c6e	Discovery of Drug-like Ligands for the Mac1 Domain of SARS-CoV-2 Nsp3	Wrong study design
3621d4c49614f500b5d1927fd45879c4795f3568	DISEQUILIBRIUM BETWEEN THE CLASSIC RENIN-ANGIOTENSIN SYSTEM AND ITS OPPOSING ARM IN SARS-COV-2 RELATED LUNG INJURY.	Wrong study design
a1b2f5d0fa74f0821f958eb20d2458850b834de9	Do ACE inhibitors and angiotensin receptor antagonists increase the risk of severe COVID-19?	Wrong study design
0cfac32ea5e9344e2994b1725cd14f22883cae49	Do not discontinue ACE inhibitors and sartans! RAS inhibitors could even protect hypertensive patients against severe COVID-19 progressions	Wrong study design
f61f14fdc6aa6497268b662f2f98949aba4bf476	Does the direct renin inhibitor have a role to play in attenuating severity of the outbreak coronavirus disease 2019 (COVID-19)?	Wrong study design
d3212b7510f7bd1684a1b5d82057968e16bb1b7a	Downregulation of ACE2 induces overstimulation of the renin-angiotensin system in COVID-19: should we block the renin-angiotensin system?	Wrong study design
0670c92b515844c19ab8ef04707d32e204c923f7	Drug treatments affecting ACE2 in COVID-19 infection: a systematic review protocol.	Wrong study design
1b547a4b3dfff9abc750fc200c46179972d4b5a3	Drugs acting on renin angiotensin system and use in ill patients with COVID-19.	Wrong study design
25b67a1daa80988d198ff2cea697d43000ba6432	Effect of angiotensin II blockers on the prognosis of COVID-19: a toxicological view.	Wrong study design
81e87c07b4e5dfc3cbefa9f0323d301b55271ce0	Effects of ACEIs and ARBs on Clinical Outcomes in COVID-19 Patients: A Meta-Analysis	Wrong study design

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8b6da29dc6dc642ba4ecc301fbb234a158256812	Effects of Renin-Angiotensin Inhibition on ACE2 and TMPRSS2 Expression: Insights into COVID-19.	Wrong study design
c49fe85113cf4b445af3a65b459ce21d8bdeb613	Effects of Renin-Angiotensin Inhibition on ACE2 and TMPRSS2 Expression: Insights into COVID-19.	Wrong study design
a9837db5841b850ebd7429cc2d9913110bb7ae9c	Estimation of RAAS-Inhibitor effect on the COVID-19 outcome: A Meta-analysis.	Wrong study design
6da1935915462498ba26fef69ee2c5cfd9653cd	Evidence for Use or Disuse of Renin-Angiotensin System Modulators in Patients Having COVID-19 With an Underlying Cardiorenal Disorder.	Wrong study design
1d5b6c6f08077dce4efd05860e3aa5801c614b35	Facts and reflections on COVID-19 and anti-hypertensives drugs.	Wrong study design
e0f2906a4dd1166569aa3f37cdca2f14c7264005	Further developments in the literature on RAAS inhibitors and COVID-19.	Wrong study design
80dcd2fd169dd18e43455c61dc6c311f5e148673	Good or bad: Application of RAAS inhibitors in COVID-19 patients with cardiovascular comorbidities.	Wrong study design
837b7fe496920cb76e3e87df9ab3ce009735a03d	Good things come in threes (and sometimes fours): Update on renin-angiotensin-aldosterone system inhibitors and COVID-19	Wrong study design
a5701119efa49dac8f2249f91471944cf3a4e6e7	Headache medication and the COVID-19 pandemic.	Wrong study design
db40f143d5de1b37f72c1078fb383a466a19166b	Hiding in Plain Sight: an Approach to Treating Patients with Severe COVID-19 Infection.	Wrong study design

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b888e8db8089b1c0b5ea09e245bff54fafaf060a	Hypertension and renin-angiotensin system blockers are not associated with expression of Angiotensin Converting Enzyme 2 (ACE2) in the kidney	Wrong study design
78ef663fe2417633e26a209f5017954c092c9abc	Hypertension prevalence in human Coronavirus: The role of ACE system in infection spread and severity.	Wrong study design
594dc673eafcfbc19f051775862da08b3040f8f2	Hypertension, renin-angiotensin-aldosterone system inhibition, and COVID-19.	Wrong study design
dd28c837c4c2fa2da818a81bb220620559174f8d	Hypertension, the renin-angiotensin system, and the risk of lower respiratory tract infections and lung injury: implications for COVID-19.	Wrong study design
81988e84a51fe51c9f9bbdded742e6ecc9b3126d	Hypothesis: angiotensin-converting enzyme inhibitors and angiotensin receptor blockers may increase the risk of severe COVID-19.	Wrong study design
dbc047620dd88ca6d2b36be4fd85dcb9a7033075	Immunomodulatory therapy for the management of severe COVID-19. Beyond the anti-viral therapy: A comprehensive review.	Wrong study design
f4c96704c8ed6ba660e53deb8ce1984f05e1c71c	Impact of Angiotensin II Type 2 Receptor Agonists Treatment in Patients With COVID 19 (COVID-ARA2)	Wrong comparison
00aafea16571e9355a00ec97b65d6be761bd7fb0	Impact of hospitalised patients with COVID-19 taking Renin-Angiotensin-Aldosterone System inhibitors: a systematic review and meta-analysis	Wrong study design
b6ce3b2319fb183b36c3d362b118b94730216093	Important Steps to Control COVID-19/SARS-CoV-2 Infection.	Wrong study design

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273b1d3531a2b4183264f28b82aac65480a3b01e	Influenza Vaccination, ACEI and ARB in the Evolution of SARS-Covid19 Infection	Wrong comparison
8b48056fcbc21b726f7f4b3140fcd9f1d1fee1a8	Inhibitors of the renin-angiotensin system and SARS-CoV-2 infection.	Wrong study design
cd976a29604c5c1e013dbb99830b73baf87dcf9	Inhibitors of the renin-angiotensin system: The potential role in the pathogenesis of COVID-19.	Wrong study design
830a23a877bca790e88751ccaeb6651889494098	Inhibitors of the Renin-Angiotensin-Aldosterone System and Covid-19.	Wrong study design
770090b8e01a88046b2418556b2bca45a4f6f97a	Interaction between RAAS inhibitors and ACE2 in the context of COVID-19.	Wrong study design
4c1d3bd5219c748bf4b81dd5b99b3fa1f1556d68	Interactions of coronaviruses with ACE2, angiotensin II, and RAS inhibitors-lessons from available evidence and insights into COVID-19.	Wrong study design
3bd4349a6ba5b62cb7a2a25d87b0a7b7d8bb3fb5	Intoxication With Endogenous Angiotensin II: A COVID-19 Hypothesis.	Wrong study design
e84cf3d6db5de0929e861db76e84fa6267186cf9	Is Hypertension a Real Risk Factor for Poor Prognosis in the COVID-19 Pandemic?	Wrong study design
5c21f92e87e6c621f54b1b3f5fd38beb134a54b	Is the use of RAS inhibitors safe in the current era of COVID-19 pandemic?	Wrong study design
ace012922a457250c87c011e7bdda7a118157da	Is There an Association Between COVID-19 Mortality and the Renin-Angiotensin System-a Call for Epidemiologic Investigations.	Wrong study design
e3fc094e2fe02b2408eba87e1275dcea86647f1	Is there enough evidence to discontinue the renin-angiotensin system inhibitors in patients with COVID-19?	Wrong study design

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203e6e50c331e2a436ec950f6940b5b a6d8140a5	Issues of Cardiovascular Risk Management in People With Diabetes in the COVID-19 Era.	Wrong study design
5c26507ce73a1f3c6293f654637dd7a 1a0772c56	JAK Inhibition as a New Treatment Strategy for Patients with COVID-19.	Wrong study design
708e113c1197347f81fc7842d9ae610 80f5c578a	Keep Taking Your ACE Inhibitors and ARBs During the COVID 19 Pandemic.	Wrong study design
6a8e607c53267856cfdae290216d66d 82adf669f	Kidney and Lung ACE2 expression after an ACE inhibitor or an Ang II receptor blocker: implications for COVID-19	Wrong study design
67402cef6570f8a6f031247d5c92fa04 b717afd7	Kidney and Lung ACE2 Expression after an ACE Inhibitor or an Ang II Receptor Blocker: Implications for COVID-19.	Wrong study design
76cda330ab69d13a5de57f0758a54e6 edc588b17	Lack of Association Between Genetic Variants at ACE2 and TMPRSS2 Genes Involved in SARS-CoV-2 Infection and Human Quantitative Phenotypes.	Wrong study design
4b79fd1ec8af22cdf238a46ae6dcd02 ae464b151	Lessons Learned to Date on COVID-19 Hyper-inflammatory Syndrome: Considerations for Interventions to Mitigate SARS-CoV-2 Viral Infection and Detrimental Hyperinflammation.	Wrong study design
188906d3137590062c8a9dbc9876df 1ea9e7c9a4	Letter in response to the article: Comorbidities in COVID-19: Outcomes in hypertensive cohort and controversies with renin angiotensin system blockers (Singh et al.).	Wrong study design

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3ece3e51acd5f94fd2767ec66c1b486699f390c5	Letter to the editor: The role of angiotensin-converting enzyme inhibitors and angiotensin receptor blockers in developing a COVID-19 comorbidity-based host risk score.	Wrong study design
a7cc4acbaafdce851699d849026b454e112798161	Letter to the editors in response to: Angiotensin-converting enzyme inhibitors and angiotensin receptor blockers may be harmful in patients with diabetes during COVID-19 pandemic (Cure et al.).	Wrong study design
c203479f7803e7edff6805c8d9e22cbc35030ff3	Lipid-lowering therapy and renin-angiotensin-aldosterone system inhibitors in the era of the COVID-19 pandemic.	Wrong study design
ac3a25c0d62069c89085f4d6d5a070b9301ad253	Management of hypertension in COVID-19.	Wrong study design
e43e430f8672ecbe8646f11c20ef7cb954867e9c	Mechanism of inflammatory response in associated comorbidities in COVID-19.	Wrong study design
dd9da8f7c52fd41c9aab9757de859bf91638fa1	Might renin-angiotensin system blockers play a role in the COVID-19 pandemic?	Wrong study design
aa9448f35c03db1da660bb369f17b7e5583b19f1	Modulation of the acute defence reaction by eplerenone prevents cardiac disease progression in viral myocarditis.	Wrong study design
6c68f0383c72cdbc3823a9d5ebdfb3bb22a5b29	Molecular Insights Into SARS COV-2 Interaction With Cardiovascular Disease: Role of RAAS and MAPK Signaling.	Wrong study design
495e1b48958f3b707c147d59d4b304bc077926c4	More evidence is urgently needed to confirm the relation between angiotensin-converting enzyme inhibitors and COVID-19.	Wrong study design

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1319a5c3694420043b362d36a781d76b8bd1a2aa	Mortality and use of angiotensin converting enzyme inhibitors in Covid 19 disease - a systematic review.	Wrong study design
d4d73c87773b1dd0fa8eb4c6393301acd9d5ab8	Mortality in COVID-19 patients treated with ACEIs/ARBs: re-estimated meta-analysis results following the Mehra et al. retraction.	Wrong study design
10101152479158301e1f5ec-deab1bcbd9138b332	Multiple functions of angiotensin-converting enzyme 2 and its relevance in cardiovascular diseases.	Wrong study design
e614840211d94c0293c7f33972979f6572f0cef4	Neprilysin inhibitor-angiotensin II receptor blocker combination (sacubitril/valsartan): rationale for adoption in SARS-CoV-2 patients.	Wrong study design
f11c31cb2bcb82ee64189f15d352349bb61d883c	NON-WHITE ETHNICITY, MALE SEX, AND HIGHER BODY MASS INDEX, BUT NOT MEDICATIONS ACTING ON THE RENIN-ANGIOTENSIN SYSTEM ARE ASSOCIATED WITH CORONAVIRUS DISEASE 2019 (COVID-19) HOSPITALISATION: REVIEW OF THE FIRST 669 CASES FROM THE UK BIOBANK	Wrong population
4d00816caa9e1f50313d981f297dbe336eb67bf3	Organ-protective Effect of Angiotensin-converting Enzyme 2 and its Effect on the Prognosis of COVID-19.	Wrong study design
b948d10e4a82e27d8d38336e91e347cecec32dc6	Outcomes in Patients with COVID-19 Infection Taking ACEI/ARB.	Wrong study design
526c902da8da5c0beb54fccfa4f9333efa57e0d3	Outcomes of renin-angiotensin-aldosterone system blockers in patients with COVID-19: a systematic review and meta-analysis.	Wrong study design

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64c41b28b3e1ca71212875ef5ffb84975d567692	Overview of Covid-19 regarding the cardiovascular situation in the light of current reports.	Wrong study design
f67992b687855414ca5e088d0de1d1263ae12e7b5	Pathological Role of Angiotensin II in Severe COVID-19.	Wrong study design
1dc4b723c28aea7ad467aea0e245d8f1e26e55cb	Pharmaco-Immunomodulatory Therapy in COVID-19.	Wrong study design
7b330b086c0d870b75fc3c38f0fc91abf22fc3a8	Pharmacologic Treatments for Coronavirus Disease 2019 (COVID-19): A Review.	Wrong study design
4d8f8e409d9de9cb7498aeda87ebb8b50a832323	Pharmacotherapy in COVID-19 patients: A review of ACE2-raising drugs and their clinical safety.	Wrong study design
9a841c7cc78b03b88965c2cbedcee31bb72c3bc3	Pharmacotherapy in COVID-19; A narrative review for emergency providers	Wrong study design
4d952fe73268f522b00680e001c5af39ad2a25ad	Pharmacovigilance in patients with diabetes: A data-driven analysis identifying specific RAS antagonists with adverse pulmonary safety profiles that have implications for COVID-19 morbidity and mortality.	Wrong population
23de999173b2f554a31762e34ed38f57fe967cee	Possible effects of coronavirus infection (COVID-19) on the cardiovascular system	Wrong study design
6b24db98e83fac1f6f8dead48506978fc76f1013	Possible Protective Effect of Renin-Angiotensin System Inhibitors in COVID-19 Induced Acute Kidney Injury.	Wrong study design
3d3a40cea88551b4c0cd667a6c230fc187043f26	Potential differential effects of renin-angiotensin system inhibitors on SARS-CoV-2 infection and lung injury in COVID-19.	Wrong study design
40155b1385d628856b996a072873cef14d02c379	Potential harmful effects of discontinuing ACE-inhibitors and ARBs in COVID-19 patients.	Wrong study design

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02427695c27e2a4393afcfd63a6b531fe7d92a69	Potential inhibitors of the interaction between ACE2 and SARS-CoV-2 (RBD), to develop a drug.	Wrong study design
05ef2381c1e009e6b8f4bd530639a0552b924fb6	Potential Role of ACE2 in Coronavirus Disease 2019 (COVID-19) Prevention and Management.	Wrong study design
35980bc57fc9b227cbe86ca028f26ee0957e2e5a	Prognostic factors in patients with diabetes hospitalized for COVID-19: Findings from the CORONADO study and other recent reports.	Wrong study design
6c2e183ef5a16440d06cf44ad5d3cee4786d76b	Proper Management of People with Obesity during the COVID-19 Pandemic.	Wrong study design
eaac35a050e5f265b682439b68d9938a4f89eeef	RAAS blockade, kidney disease, and expression of ACE2, the entry receptor for SARS-CoV-2, in kidney epithelial and endothelial cells	Wrong study design
5c1a0b010f2f8f1672744aaa0bd8e8083a2a3225	RAAS blockers in hypertension posing a higher risk towards the COVID-19.	Wrong study design
52e53f748e44fc403f89ad69870bf59866392c86	RAAS inhibitors do not increase the risk of COVID-19.	Wrong study design
2b180207d4013791f17b390bd4b8c38cbdb02426	Ramipril in High Risk Patients with COVID-19.	Wrong study design
c3d4f6ebf077d8a2ab4b10b71155b516bfe28f77	Recombinant Human Angiotensin-converting Enzyme 2 (rhACE2) as a Treatment for Patients With COVID-19	Retracted article
c860c61ca2eac77d815bb03824104cf02e74ef6a	Recombinant Human Angiotensin-converting Enzyme 2 (rhACE2) as a Treatment for Patients With COVID-19	Wrong intervention

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2a86b2d7c45df4a9fa827ed1a6d0ca459b022bb8	Relationship between ACE-inhibitors, ARBs and SARS-CoV-2 infection: where are we?	Wrong study design
d7f18e35eae4590ed6345c2d7b01897915a05e63	Relationship Between ACE2 and Other Components of the Renin-Angiotensin System.	Wrong study design
be2f5fbf8891d442f1708053a28c78efae0e91bc	Renin-angiotensin system and SARS-CoV-2 interaction: underlying mechanisms and potential clinical implications.	Wrong study design
dd5f891f54786fad096f1f3dd3f8900b89e7e57	Renin-Angiotensin System Blockade in COVID-19: Good, Bad, or Indifferent?	Wrong study design
96a705f8f5883bff8637dc9ddc1bd66bd1c5d44c	Renin-Angiotensin System Blockers and the COVID-19 Pandemic: At Present There Is No Evidence to Abandon Renin-Angiotensin System Blockers.	Wrong study design
6f3270c493a8ba2022586ea136aab16a15047785	Renin-Angiotensin System Inhibition in Cardiovascular Patients at the Time of COVID19: Much Ado for Nothing? A Statement of Activity from the Directors of the Board and the Scientific Directors of the Italian Society of Hypertension.	Wrong study design
cee6e2d1685e4bfb049347fe395f63c8391ecd3a	Renin-angiotensin system inhibition in COVID-19 patients: Friend or foe?	Wrong study design
c9343ac34bb436139fac21b97fc8083c48707d91	Renin-angiotensin system inhibition in COVID-19 patients.	Wrong study design
18f84f198d6985bc89e1d5bc6166bcc055ce185	Renin-Angiotensin System Inhibitors and COVID-19: Potential Therapeutics Rather Than Perpetrators.	Wrong study design
179437c7124d84d152fc590420d853d62bf582df	Renin-angiotensin system inhibitors in COVID-19.	Wrong study design

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794bd721af940f2108a77dbc71c62bc5cdba340f	Renin-angiotensin system inhibitors in management of hypertension during the COVID-19 pandemic.	Wrong study design
b7eabfdbf330a0c6112af1bd1e147e03ce9e5c10	Renin-angiotensin system inhibitors in the COVID-19 pandemic: consequences of antihypertensive drugs.	Wrong study design
cf3d32779fb6199aebfdca543a3726bfd024ab8d3	Renin-Angiotensin-Aldosterone Inhibitors and Susceptibility to and Severity of COVID-19.	Wrong study design
396cff89b2d736eb2f2a05f2399136173e146f48	Renin-angiotensin-aldosterone system and COVID-19 infection.	Wrong study design
74e0936b4de9638520d5661b809d5b4e2be86e25	Renin-Angiotensin-Aldosterone System Blockers and the Risk of Covid-19.	Wrong population
4b475488c289949a4e03e9ed9a79ffa55fedb471	Renin-angiotensin-aldosterone system in new coronavirus infection 2019	Wrong study design
5eae5c4dc8155d7e80789a45df569583e87cb929	Renin-angiotensin-aldosterone system inhibitors and COVID-19.	Wrong study design
c133f6202425c851bfe312cbdf47ef7f42f40f4b	Renin-angiotensin-aldosterone system inhibitors and mortality in patients with hypertension hospitalized for COVID-19: a systematic review and meta-analysis	Wrong study design
b35d1d2ea2dbe1b3b1294f4df772869d065b236c	Renin-angiotensin-aldosterone system inhibitors impact on COVID-19 mortality: What's next for ACE2?	Wrong study design
bd4afc7b43a3fa4fc5a36b6460357a3c1880484a	Renin-Angiotensin-Aldosterone System Inhibitors in Covid-19.	Wrong study design
84dae6cbf9191269f26e463986d992a4ec9d2092	Renin-Angiotensin-Aldosterone System Inhibitors in Covid-19. Reply.	Wrong study design

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2cfe0df2b84629cb6086c8df6d11d6d aaabc9a87	Renin-Angiotensin-Aldosterone System Inhibitors in Patients with Covid-19.	Wrong study design
94e71bf36e2f500c9301cf3b24468f2f dac5fdb7	Renin-angiotensin-aldosterone system inhibitors to treat COVID-19?	Wrong study design
af774b2f6607e3eec6a70164191e566 2dff038a0	Reply to the letter of Mahajan and Gaur in response to the article: Comorbidities in COVID-19: Outcomes in hypertensive cohort and controversies with renin angiotensin system blockers (Singh et al.).	Wrong study design
deb324f67f1d74bfb70783d45360e6 46d7904d94	Repurposing of FDA-approved antivirals, antibiotics, anthelmintics, antioxidants, and cell protectives against SARS-CoV-2 papain-like protease.	Wrong study design
ceaf41cd61e7fb74ee673dec7dcc805f 39779664	Response by Cohen et al to Letter Regarding Article, "Association of Inpatient Use of Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers With Mortality Among Patients With Hypertension Hospitalized With COVID-19".	Wrong study design
2c0e7b71379032d52cd2c95d6b0509 311df6549e	Response by Zhang et al to Letter Regarding Article, "Association of Inpatient Use of Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers With Mortality Among Patients With Hypertension Hospitalized With COVID-19".	Wrong study design
77d2818029028177064e7f9ccc9771 5caef7e756	Response to COVID-19 and ACEI/ARB: NOT ASSOCIATED?	Wrong study design

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16b2fb02ae24049ea8b97b7a467982ae17ab3e4f	Response to recent commentaries regarding the involvement of angiotensin-converting enzyme 2 (ACE2) and renin-angiotensin system blockers in SARS-CoV-2 infections.	Wrong study design
486c16ee8553728338086860620acb8686a0e1b6	Review of evidence on using ACEi and ARBs in patients with hypertension and COVID-19	Wrong study design
9920f31200647f91f60f431f42020e8bff633616	Rheumatologists' perspective on coronavirus disease 19 (COVID-19) and potential therapeutic targets.	Wrong study design
937cc0a462189d293f53eb85845f78718995562b	Risks and Impact of Angiotensin-Converting Enzyme Inhibitors or Angiotensin-Receptor Blockers on SARS-CoV-2 Infection in Adults.	Wrong study design
7542faca1b992e2b2f622eed04ff85d94aa5b941	Risks of ACE inhibitor and ARB usage in COVID-19: evaluating the evidence.	Wrong study design
9b5785ac6d261f7a732dadb26094173eb427c6a7	Robust ACE2 protein expression localizes to the motile cilia of the respiratory tract epithelia and is not increased by ACE inhibitors or angiotensin receptor blockers	Wrong study design
2b341d6809027ec6f8e052a484c537a96cb9f4fd	Role of angiotensin-converting enzyme 2 (ACE2) in COVID-19.	Wrong study design
36624f4b9575179121819b537ead442c1dcbc51b	Role of Dipeptidyl Peptidase 4 Inhibitors in Diabetic Patients with Coronavirus-19 Infection.	Wrong study design
f577135c14405a9ef40ab5df6b47e1a67ba34bc5	Role of the Backbenchers of the Renin-Angiotensin System ACE2 and AT2 Receptors in COVID-19: Lessons From SARS.	Wrong study design
ca60c373f91643125891b79d9274162b5026b372	Sacubitril/valsartan in COVID-19 patients: the need for trials.	Wrong study design

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77327e0a4bd82ac188bcad48de31d6177d29d170	SARS-CoV-2 (COVID 19) Infection in Hypertensive Patients and in Patients With Cardiac Disease.	Wrong study design
5e29bfd5af6fc8577df41ef64c6ea26cdb186b22	SARS-COV-2 comorbidity network and outcome in hospitalized patients in Crema, Italy	Wrong study design
04e8d81dcca80380217dafcf1ab1b9b18ceda082	SARS-CoV-2 downregulation of ACE2 and pleiotropic effects of ACEIs/ARBs.	Wrong study design
96069323dd15769ad80f970d6bb098382e4d7494	SARS-CoV-2 pandemic and research gaps: Understanding SARS-CoV-2 interaction with the ACE2 receptor and implications for therapy.	Wrong study design
b7e950af3e0634328154046635c0a5a32f4988b7	SARS-CoV-2 receptor ACE2 gene expression and RAAS inhibitors.	Wrong study design
5d60531273e591242ce7053609dc45eae97f98d8	SARS-CoV2: should inhibitors of the renin-angiotensin system be withdrawn in patients with COVID-19?	Wrong study design
2c02542b1083340b347e57822df9bfa11c372ccf	Scientific statement of the Chinese Society of Cardiology (CSC) on using of renin angiotensin system blockers in patients with cardiovascular disease and COVID-19.	Wrong study design
337afd2739902e11a60c0a70abfe-faf9ece03342	Searching therapeutic strategy of new coronavirus pneumonia from angiotensin-converting enzyme 2: the target of COVID-19 and SARS-CoV.	Wrong study design
59bf5c0ecb806004c3f294efa9d81bf3877f7601	Severe acute respiratory syndrome coronavirus 2 infection, angiotensin-converting enzyme 2 and treatment with angiotensin-converting enzyme inhibitors or angiotensin II type 1 receptor blockers.	Wrong study design

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8b679e4fa0bb8de8fd448f95e56cf6f486ab079d	Severe respiratory SARS-CoV2 infection: Does ACE2 receptor matter?	Wrong study design
e19e21c52814ad10c8fab489d63b2bca73edb7dd	Should COVID-19 Concern Nephrologists? Why and to What Extent? The Emerging Impasse of Angiotensin Blockade.	Wrong study design
8c84ca74af680ae176cee0b11eaafd59909fd95f	Should Patients Receiving ACE Inhibitors or Angiotensin Receptor Blockers be Switched to Other Antihypertensive Drugs to Prevent or Improve Prognosis of Novel Coronavirus Disease 2019 (COVID-19)?	Wrong study design
e1d9bef595454ef512126c095efefd7636acbaa7	Soluble angiotensin-converting enzyme 2: a potential approach for coronavirus infection therapy?	Wrong study design
b9e5a48fca2803e5d442957cb97dc6b53298acf0	Spirolactone in Covid-19 Induced ARDS	Wrong intervention
e8d9b09dc174c0a22881cfa528e9f1cd06d900c9	Substituting Angiotensin-(1-7) to Prevent Lung Damage in SARS-CoV-2 Infection?	Wrong study design
dff1324350e1006661a37f4c0060f22c6754d3d1	Susceptibility of the Elderly to SARS-CoV-2 Infection: ACE-2 Overexpression, Shedding, and Antibody-dependent Enhancement (ADE).	Wrong study design
369176494abc9be0ad8e3535e6d21ec3b8527bcb	Switching to another antihypertensive effective drug when using ACEIs/ARBs to treat arterial hypertension during COVID-19.	Wrong study design
55fc44a93fe768b14f9bd64d6ccebd710347b7c9	Targeting of renin-angiotensin system in COVID-19 patients affected by stroke: Emerging concerns about detrimental vs. benefit effect	Wrong study design

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ce03a13247ed8c00d3d9e450e8425844f5c50c3e	Telmisartan as tentative angiotensin receptor blocker therapeutic for COVID-19.	Wrong study design
28dd7d78672b7e49aeb24436cf94273dc4d96e60	The ACE-2 in COVID-19: Foe or Friend?	Wrong study design
1a6db1432f0d5980fde8f21c251bb5c2bf0c8c97	The angiotensin-converting enzyme 2 (ACE2) receptor in the prevention and treatment of COVID-19 are distinctly different paradigms.	Wrong study design
5d68fa532fb28231faebe8b98093fc9368fa0334	The Association Between Angiotensin-Converting Enzyme Inhibitors and Angiotensin Receptor Blockers and the Number of Covid-19 Confirmed Cases and Deaths in the United States: Geospatial Study	Wrong study design
4cc67cfcf3be19dba3256b55bfce6336e0a31249	The Dilemma of Renin Angiotensin System Blockers in Coronavirus Disease (Covid-19): Insights on the Lung Fluid Handling and Gas Exchange in Heart Failure Patients.	Wrong study design
9e0f957fc3798454989ea58bb6f26f9b241a8888	The dual impact of ACE2 in COVID-19 and ironical actions in geriatrics and pediatrics with possible therapeutic solutions.	Wrong study design
f293ba221bcd82fecc5b1be8a62fda4f5fc67d5	The effect of angiotensin converting enzyme inhibitors and angiotensin receptor blockers on death and severity of disease in patients with coronavirus disease 2019 (COVID-19): A meta-analysis	Wrong study design
794c2ca95bea4ca2301a7c194140f662a5a354ac	The Effect of Coronavirus Disease 2019 on Cardiovascular Diseases.	Wrong study design
fe6e10d26aa54dc41d03ecb55a9fdb6c4d6f929c	The emerging role of ACE2 in physiology and disease.	Wrong study design

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fcdefe13ec1e339b9b0aa04566922328fb2f5331	The impact of SARS-CoV-2 transmission fear and COVID-19 pandemic on the mental health of patients with primary immunodeficiency disorders, severe asthma, and other high-risk groups	Wrong population
a37dae78ab3712567851f60c3ebbe10d994f2001	The Impact of the COVID-19 "Infodemic" on Drug-Utilization Behaviors: Implications for Pharmacovigilance.	Wrong study design
3a1464d54158b967934431b2936db4ffd6c27299	The Lung, the Heart, the Novel Coronavirus, and the Renin-Angiotensin System; The Need for Clinical Trials	Wrong study design
f63c88e5fa9ea70d9942016e807d67945ed6ad0f	The mechanistic overview of SARS-CoV-2 using angiotensin-converting enzyme 2 to enter the cell for replication: possible treatment options related to the renin-angiotensin system.	Wrong study design
25f7a2afe-afa506ec764660e880a322c08c68d0a	The Network of Angiotensin Receptors in Breast Cancer.	Wrong study design
b2e1c527060a74373fca3af7154beaf1fb6d634f	The potential benefit of telmisartan to protect overweight COPD patients from the acquisition of COVID-19.	Wrong study design
2cb0007ea1feb8e2ec19ea08ca136ecd88f6592b	The renin-angiotensin system - a therapeutic target in COVID-19?	Wrong study design
dfb17237a6ceae3825a9904a0d1bd5e8d3864e52	The role of ACEIs/ARBs in COVID-19: Friend or foe?	Wrong study design
4f9ac0937c6cb2ec511d8ae8d5e142d2eb601137	The SARS-CoV-2 receptor, ACE-2, is expressed on many different cell types: implications for ACE-inhibitor- and angiotensin II receptor blocker-based antihypertensive therapies-reply.	Wrong study design

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4d34457daa50d905eb-dcd5c25839ea8ad39c34cc	The SARS-CoV-2 receptor, ACE-2, is expressed on many different cell types: implications for ACE-inhibitor- and angiotensin II receptor blocker-based cardiovascular therapies: comment.	Wrong study design
8ae28e0c9f91530ddb8f74ff8f384cf95e0ef68c	The SARS-CoV-2 receptor, ACE-2, is expressed on many different cell types: implications for ACE-inhibitor- and angiotensin II receptor blocker-based cardiovascular therapies.	Wrong study design
4dc2bc229ba483e5fb89870fd75918bf9e02ce4b	The Two Faces of ACE2: The Role of ACE2 Receptor and Its Polymorphisms in Hypertension and COVID-19.	Wrong study design
a88e3aaa0450394fad7b1c0a13db315e9db7ffd1	The use of Captopril - angiotensin converting enzyme (ACE) inhibitor for cystinuria during COVID-19 pandemic.	Wrong study design
465868adbd310d3aaa8a286465f0bdf e069831df	The use of renin angiotensin system inhibitor on mortality in patients with coronavirus disease 2019 (COVID-19): A systematic review and meta-analysis.	Wrong study design
103b568435e98745695608d413518029d7918c53	The vascular endothelium: the cornerstone of organ dysfunction in severe SARS-CoV-2 infection.	Wrong study design
7aa4beca4b0bc99dc8a0766a6441b32afeddaec6	Therapeutic strategies in an outbreak scenario to treat the novel coronavirus originating in Wuhan, China.	Wrong study design
2d265dfc0e8015c005391dab15e9bc656353fd7a	Thrombosis in Coronavirus disease 2019 (COVID-19) through the prism of Virchow's triad.	Wrong study design
8e10a92ec2a05e471b22c6a3e438bacbf8f9f0a8	Treatment options for COVID-19: The reality and challenges.	Wrong study design

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07a7892268796010dcbb154b7dc5307bcc402be	Treatment with ACE inhibitors or ARBs and risk of severe/lethal COVID-19: a meta-analysis.	Wrong study design
2caf1ca3ef45f245ca0168846ed3a556d7ccb7bf	TWIRLS, a knowledge-mining technology, suggests a possible mechanism for the pathological changes in the human host after coronavirus infection via ACE2.	Wrong study design
1502a156c6c94e3f4f876b40b3616dba71d67f6e	Two hits to the renin-angiotensin system may play a key role in severe COVID-19.	Wrong study design
638c84e8b20e4c50664dbd9cc08aa08c49d5d2a5	Understanding the Renin-Angiotensin-Aldosterone-SARS-CoV-Axis: A Comprehensive Review.	Wrong study design
cb7013eac07486b6d8425fd3985b29ba861cf21b	Update Alert 2: Risks and Impact of Angiotensin-Converting Enzyme Inhibitors or Angiotensin-Receptor Blockers on SARS-CoV-2 Infection in Adults.	Wrong study design
b09395365a7e38747ea9df31232465c7428bba4e	Update Alert: Risks and Impact of Angiotensin-Converting Enzyme Inhibitors or Angiotensin-Receptor Blockers on SARS-CoV-2 Infection in Adults.	Wrong study design
e0f49fcf18976873b759131a32ff7599c54f3614	Use of inhibitors of the renin angiotensin system and COVID-19 prognosis: a systematic review and meta-analysis	Wrong study design
9178615c384265ddcaf43801ec5d3430628b5fd0	Use of Renin-Angiotensin System Blockers During the COVID-19 Pandemic: Early Guidance and Evolving Evidence.	Wrong study design
e58911138d975cc047a5c8bbde3699479a55540f	Use of Spironolactone in SARS-CoV-2 ARDS Patients.	Wrong intervention
cfa228a08c0a397945716c27cb9e67c3acba4824	Vasculopathy and Coagulopathy Associated with SARS-CoV-2 Infection.	Wrong study design

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811e459a6b8d82bfde1bbcc931bb523b5fbd3e	Virtual Screening of Natural Products against Type II Transmembrane Serine Protease (TMPRSS2), the Priming Agent of Coronavirus 2 (SARS-CoV-2).	Wrong study design
9313872720b46cf96a6790ab099a4cab6dcbb63	What could be the better choice between ACE inhibitors and AT1R antagonists in coronavirus disease 2019 (COVID-19) patients?	Wrong study design
e4ae2e5be006752584ca328e1b5a8721e58721f1	What Solid Organ Transplant Healthcare Providers should know about Renin-Angiotensin-Aldosterone System Inhibitors and COVID-19.	Wrong study design
6a22754d249e6fde40c39f8e9d07c89e799fc97b	What We Learned about COVID-19 So Far? Notes from Underground.	Wrong study design
9eb-bef238024294127c0d0753dc55e03f470e24c	What would Sérgio Ferreira say to your physician in this war against COVID-19: How about kallikrein/kinin system?	Wrong study design
4a702e5e97cd8218e4c302a26852d2fa2f018e62	Would ACEIs/ARBs be beneficial for COVID-19 patients without hypertension?	Wrong study design

Appendix 2: Included, excluded and ongoing studies

Excluded studies references

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