

Supplemental Online Content

Jung YEG, Sun Y, Schluger NW. Effect and reach of medical articles posted on preprint servers during the COVID-19 pandemic. *JAMA Intern Med*. Published online November 9, 2020. doi:10.1001/jamainternmed.2020.6629

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This supplemental material has been provided by the authors to give readers additional information about their work.

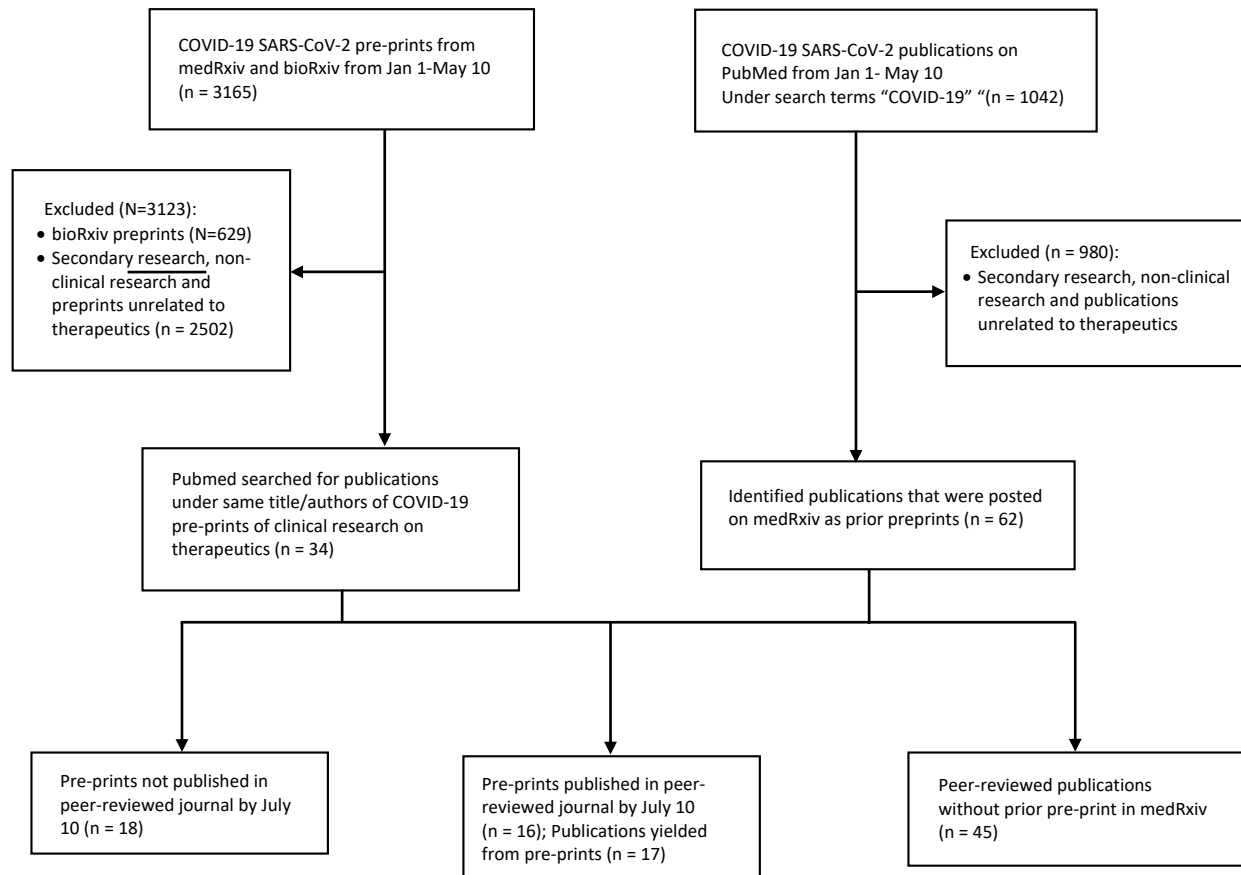
eMethods

We collected data from pre-prints and scientific publications that presented clinical outcomes of several types of treatments for SARS-CoV-2: the anti-malarials chloroquine and hydroxychloroquine; lopinavir-ritonavir; angiotensin receptor blockers; angiotensin converting enzyme inhibitors; convalescent plasma; and corticosteroids. We also collected data from pre-prints that presented clinical outcomes of therapies for infectious diseases and/or respiratory diseases other than COVID-19. We limited the data to articles in English posted or published between 1 February 2020 to 10 May 2020. We excluded abstracts from conferences, commentaries, editorials, reviews, and meta-analyses. Once we identified the pre-prints and peer-reviewed publications, we collected data on the online engagement for each article. The Altmetric Attention Score is a score derived from an automated algorithm and represents a weighted count of the amount of attention Altmetric has picked up for a research output. The weighted count allows for the relative reach of each type of source to be considered (E.g., news outlets hold the greatest weight, while citations hold the lowest weight). Other online engagement data we collected were the number of news outlets that posted about the article, the number of tweeters who tweeted about the article, the twitter demographics (classified by Altmetric based on key words on the tweeter profile and their posting pattern), and the Dimensions Citations (the total number of citations by various publication types indexed by Dimensions).

We searched the medRxiv pre-print server database and PubMed. Data on online engagement was acquired from the Altmetric Details Page pertaining to each article. For each peer-reviewed publication, we identified the 2018 Journal Impact Factor (JIF) for the journal from which it was published. We obtained the JIF from the Master Journal List on clarivate.com, derived from the Thomas Reuters Journal Citation Reports, 2019. We obtained page views from built-in metrics on the medRxiv database and from the individual journals for each publication.

We searched the PubMed database using key words that included 'Covid-19', 'coronavirus', 'chloroquine', 'hydroxychloroquine', 'lopinavir', 'ritonavir', 'angiotensin', 'convalescent plasma', 'COVID-19 serotherapy', and 'steroids'. We then screened all papers under the key words 'Covid-19' [OR] 'coronavirus' [AND] 'treatment' included in the title or abstract. All publications deemed potentially eligible were retrieved for full-text review. Using the author names, we isolated the peer-reviewed publications that had initially been posted as pre-prints on medRxiv prior to publication. To the best of our knowledge, none of the pre-prints in this study were posted in any other pre-print server. To access the Altmetric Details Page for the medRxiv pre-prints, we used the Altmetric donut badge built into the website. For the peer-reviewed publications, we used the 'Altmetric it!' widget downloaded from the Altmetric website, which could then be connected to each publication.

eFigure. Search strategy and selection of papers for the analysis



eTable 1. References for COVID-19 Pre-prints

Date posted on medRxiv	If published, date of publication in journal	Citation
3/12/20	4/28/20	<p>Wang Y, Jiang W, He Q, et al. Early, low-dose and short-term application of corticosteroid treatment in patients with severe COVID-19 pneumonia: single-center experience from Wuhan, China. <i>medRxiv</i>. Published online March 12, 2020:2020.03.06.20032342. doi:10.1101/2020.03.06.20032342</p> <p>*Wang Y, Jiang W, He Q, et al. A retrospective cohort study of methylprednisolone therapy in severe patients with COVID-19 pneumonia. <i>Signal Transduct Target Ther</i>. 2020;5(1):1-3. doi:10.1038/s41392-020-0158-2</p>
3/20/20	4/11/20; 4/20/20	<p>Gautret P, Lagier JC, Parola P, et al. Hydroxychloroquine and Azithromycin as a treatment of COVID-19: preliminary results of an open-label non-randomized clinical trial. <i>medRxiv</i>. Published online March 20, 2020:2020.03.16.20037135. doi:10.1101/2020.03.16.20037135</p> <p>*Gautret P, Lagier J-C, Parola P, et al. Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. <i>Int J Antimicrob Agents</i>. 2020;56(1):105949. doi:10.1016/j.ijantimicag.2020.105949</p> <p>* Gautret P, Lagier J-C, Parola P, et al. Clinical and microbiological effect of a combination of hydroxychloroquine and azithromycin in 80 COVID-19 patients with at least a six-day follow up: A pilot observational study. <i>Travel Med Infect Dis</i>. 2020;34:101663. doi:10.1016/j.tmaid.2020.101663</p>
3/23/20	4/28/20	<p>Duan K, Liu B, Li C, et al. The feasibility of convalescent plasma therapy in severe COVID-19 patients: a pilot study. <i>medRxiv</i>. Published online March 23, 2020:2020.03.16.20036145. doi:10.1101/2020.03.16.20036145</p> <p>*Duan K, Liu B, Li C, et al. Effectiveness of convalescent plasma therapy in severe COVID-19 patients. <i>Proc Natl Acad Sci U S A</i>. 2020;117(17):9490-9496. doi:10.1073/pnas.2004168117</p>

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3/27/20		Liu Y, Huang F, Xu J, et al. Anti-hypertensive Angiotensin II receptor blockers associated to mitigation of disease severity in elderly COVID-19 patients. <i>medRxiv</i> . Published online March 27, 2020:2020.03.20.20039586. doi:10.1101/2020.03.20.20039586
3/30/20	5/19/20	Yan D, Liu X, Zhu Y, et al. Factors associated with prolonged viral shedding and impact of Lopinavir/Ritonavir treatment in patients with SARS-CoV-2 infection. <i>medRxiv</i> . Published online March 3, 2020:2020.03.22.20040832. doi:10.1101/2020.03.22.20040832 *Yan D, Liu X-Y, Zhu Y, et al. Factors associated with prolonged viral shedding and impact of Lopinavir/Ritonavir treatment in hospitalised non-critically ill patients with SARS-CoV-2 infection. <i>Eur Respir J</i> . Published online January 1, 2020. doi:10.1183/13993003.00799-2020
4/3/20		Chorin E, Dai M, Shulman E, et al. The QT Interval in Patients with SARS-CoV-2 Infection Treated with Hydroxychloroquine/Azithromycin. <i>medRxiv</i> . Published online April 3, 2020:2020.04.02.20047050. doi:10.1101/2020.04.02.20047050
4/4/20	4/29/20	Yang G, Tan Z, Zhou L, et al. Angiotensin II Receptor Blockers and Angiotensin-Converting Enzyme Inhibitors Usage is Associated with Improved Inflammatory Status and Clinical Outcomes in COVID-19 Patients With Hypertension. <i>medRxiv</i> . Published online April 4, 2020:2020.03.31.20038935. doi:10.1101/2020.03.31.20038935 * Yang G, Tan Z, Zhou L, et al. Effects of Angiotensin II Receptor Blockers and ACE (Angiotensin-Converting Enzyme) Inhibitors on Virus Infection, Inflammatory Status, and Clinical Outcomes in Patients With COVID-19 and Hypertension: A Single-Center Retrospective Study. <i>Hypertens Dallas Tex</i> 1979. 2020;76(1):51-58. doi:10.1161/HYPERTENSIONAHA.120.15143
4/10/20		Lover AA. Quantifying treatment effects of hydroxychloroquine and azithromycin for COVID-19: a secondary analysis of an open label non-randomized clinical trial (Gautret et al, 2020). <i>medRxiv</i> . Published online April 10, 2020:2020.03.22.20040949. doi:10.1101/2020.03.22.20040949
4/10/20		Chen Z, Hu J, Zhang Z, et al. Efficacy of hydroxychloroquine in patients with COVID-19: results of a randomized clinical trial. <i>medRxiv</i> . Published online April 10, 2020:2020.03.22.20040758. doi:10.1101/2020.03.22.20040758

4/10/20		Vanasse A, Courteau J, Chiu Y, Cantin A, Leduc R. Hydroxychloroquine (HCQ): an observational cohort study in primary and secondary prevention of pneumonia in an at-risk population. <i>medRxiv</i> . Published online April 10, 2020:2020.04.08.20057893. doi:10.1101/2020.04.08.20057893
4/10/20		Lane JCE, Weaver J, Kostka K, et al. Safety of hydroxychloroquine, alone and in combination with azithromycin, in light of rapid wide-spread use for COVID-19: a multinational, network cohort and self-controlled case series study. <i>medRxiv</i> . Published online April 10, 2020:2020.04.08.20054551. doi:10.1101/2020.04.08.20054551
4/11/20		Pei S, Yuan X, Zhimin Zhang Z, et al. Convalescent Plasma to Treat COVID-19: Chinese Strategy and Experiences. <i>medRxiv</i> . Published online April 11, 2020:2020.04.07.20056440. doi:10.1101/2020.04.07.20056440
4/11/20	5/19/20	Lu X, Chen T, Wang Y, et al. Adjuvant corticosteroid therapy for critically ill patients with COVID-19. <i>medRxiv</i> . Published online April 11, 2020:2020.04.07.20056390. doi:10.1101/2020.04.07.20056390 *Lu X, Chen T, Wang Y, Wang J, Yan F. Adjuvant corticosteroid therapy for critically ill patients with COVID-19. <i>Crit Care</i> . 2020;24(1):241. doi:10.1186/s13054-020-02964-w
4/14/20	6/13/20	Chen X, Zhang Y, Zhu B, et al. Associations of clinical characteristics and antiviral drugs with viral RNA clearance in patients with COVID-19 in Guangzhou, China: a retrospective cohort study. <i>medRxiv</i> . Published online April 14, 2020:2020.04.09.20058941. doi:10.1101/2020.04.09.20058941 *Chen X, Zhu B, Hong W, et al. Associations of clinical characteristics and treatment regimens with the duration of viral RNA shedding in patients with COVID-19. <i>Int J Infect Dis</i> . 2020;98:252-260. doi:10.1016/j.jid.2020.06.091
4/14/20	5/14/20	Mahevas M, Tran V-T, Roumier M, et al. No evidence of clinical efficacy of hydroxychloroquine in patients hospitalized for COVID-19 infection with oxygen requirement: results of a study using routinely collected data to emulate a target trial. <i>medRxiv</i> . Published online April 14, 2020:2020.04.10.20060699. doi:10.1101/2020.04.10.20060699

		*Mathian A, Mahevas M, Rohmer J, et al. Clinical course of coronavirus disease 2019 (COVID-19) in a series of 17 patients with systemic lupus erythematosus under long-term treatment with hydroxychloroquine. <i>Ann Rheum Dis.</i> 2020;79(6):837-839. doi:10.1136/annrheumdis-2020-217566
4/14/20		Gill D, Arvanitis M, Carter P, et al. ACE inhibition and cardiometabolic risk factors, lung ACE2 and TMPRSS2 gene expression, and plasma ACE2 levels: a Mendelian randomization study. <i>medRxiv.</i> Published online April 14, 2020:2020.04.10.20059121. doi:10.1101/2020.04.10.20059121
4/15/20		Li Y, Xie Z, Lin W, et al. An exploratory randomized controlled study on the efficacy and safety of lopinavir/ritonavir or arbidol treating adult patients hospitalized with mild/moderate COVID-19 (ELACOI). <i>medRxiv.</i> Published online April 15, 2020:2020.03.19.20038984. doi:10.1101/2020.03.19.20038984
4/16/20	4/24/20	Borba MGS, Val F de A, Sampaio VS, et al. Chloroquine diphosphate in two different dosages as adjunctive therapy of hospitalized patients with severe respiratory syndrome in the context of coronavirus (SARS-CoV-2) infection: Preliminary safety results of a randomized, double-blinded, phase IIb clinical trial (CloroCovid-19 Study). <i>medRxiv.</i> Published online April 16, 2020:2020.04.07.20056424. doi:10.1101/2020.04.07.20056424 *Borba MGS, Val FFA, Sampaio VS, et al. Effect of High vs Low Doses of Chloroquine Diphosphate as Adjunctive Therapy for Patients Hospitalized With Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection: A Randomized Clinical Trial. <i>JAMA Netw Open.</i> 2020;3(4):e208857-e208857. doi:10.1001/jamanetworkopen.2020.8857
4/23/20	6/5/20	Magagnoli J, Narendran S, Pereira F, et al. Outcomes of hydroxychloroquine usage in United States veterans hospitalized with Covid-19. <i>medRxiv.</i> Published online April 23, 2020:2020.04.16.20065920. doi:10.1101/2020.04.16.20065920 *Magagnoli J, Narendran S, Pereira F, et al. Outcomes of Hydroxychloroquine Usage in United States Veterans Hospitalized with COVID-19. <i>Med.</i> Published online June 5, 2020. doi:10.1016/j.medj.2020.06.001
4/24/20		Izoulet M. National Consumption of Antimalarial Drugs and COVID-19 Deaths Dynamics : an Ecological Study. <i>medRxiv.</i> Published online April 24, 2020:2020.04.18.20063875. doi:10.1101/2020.04.18.20063875
4/24/20		Wang D, Wang J, Jiang Q, et al. No Clear Benefit to the Use of Corticosteroid as Treatment in Adult Patients with Coronavirus Disease 2019 : A Retrospective Cohort Study. <i>medRxiv.</i> Published online April 24, 2020:2020.04.21.20066258. doi:10.1101/2020.04.21.20066258

4/25/20	6/16/20	<p>Ramireddy A, Chugh HS, Reinier K, et al. Experience with Hydroxychloroquine and Azithromycin in the COVID-19 Pandemic: Implications for QT Interval Monitoring. <i>medRxiv</i>. Published online April 25, 2020:2020.04.22.20075671. doi:10.1101/2020.04.22.20075671</p> <p>*Ramireddy Archana, Chugh Harpriya, Reinier Kyndaron, et al. Experience With Hydroxychloroquine and Azithromycin in the Coronavirus Disease 2019 Pandemic: Implications for QT Interval Monitoring. <i>J Am Heart Assoc</i>. 2020;9(12):e017144. doi:10.1161/JAHA.120.017144</p>
4/29/20		<p>Ip A, Parikh K, Parrillo JE, et al. Hypertension and Renin-Angiotensin-Aldosterone System Inhibitors in Patients with Covid-19. <i>medRxiv</i>. Published online April 29, 2020:2020.04.24.20077388. doi:10.1101/2020.04.24.20077388</p>
4/29/20		<p>Yan H, Valdes AM, Vijay A, et al. Role of Drugs Affecting the Renin-Angiotensin-Aldosterone System on Susceptibility and Severity of COVID-19: A Large Case-Control Study from Zhejiang Province, China. <i>medRxiv</i>. Published online April 29, 2020:2020.04.24.20077875. doi:10.1101/2020.04.24.20077875</p>
4/29/20		<p>Lan X, Shao C, Zeng X, Wu Z, Xu Y. Lopinavir-ritonavir alone or combined with arbidol in the treatment of 73 hospitalized patients with COVID-19: a pilot retrospective study. <i>medRxiv</i>. Published online April 29, 2020:2020.04.25.20079079. doi:10.1101/2020.04.25.20079079</p>
5/1/20	5/15/20	<p>Yu B, Wang DW, Li C. Hydroxychloroquine application is associated with a decreased mortality in critically ill patients with COVID-19. <i>medRxiv</i>. Published online May 1, 2020:2020.04.27.20073379. doi:10.1101/2020.04.27.20073379</p> <p>* Yu B, Li C, Chen P, et al. Low dose of hydroxychloroquine reduces fatality of critically ill patients with COVID-19. <i>Sci China Life Sci</i>. Published online May 15, 2020. doi:10.1007/s11427-020-1732-2</p>
5/1/20	5/11/20	<p>Chorin E, Wadhvani L, Magnani S, et al. QT Interval Prolongation and Torsade De Pointes in Patients with COVID-19 treated with Hydroxychloroquine/Azithromycin. <i>medRxiv</i>. Published online May 1, 2020:2020.04.27.20074583. doi:10.1101/2020.04.27.20074583</p> <p>* Chorin E, Wadhvani L, Magnani S, et al. QT interval prolongation and torsade de pointes in patients with COVID-19 treated with hydroxychloroquine/azithromycin. <i>Heart Rhythm</i>. 2020;0(0). doi:10.1016/j.hrthm.2020.05.014</p>

5/1/20		Dauchet L, Lambert M, Gauthier V, et al. ACE inhibitors, AT1 receptor blockers and COVID-19: clinical epidemiology evidences for a continuation of treatments. The ACER-COVID study. <i>medRxiv</i> . Published online May 1, 2020:2020.04.28.20078071. doi:10.1101/2020.04.28.20078071
5/2/20		Mallat J, Hamed F, Balkis M, et al. Hydroxychloroquine is associated with slower viral clearance in clinical COVID-19 patients with mild to moderate disease: A retrospective study. <i>medRxiv</i> . Published online May 2, 2020:2020.04.27.20082180. doi:10.1101/2020.04.27.20082180
5/4/20	5/28/20	Huang M, Li M, Xiao F, et al. Preliminary evidence from a multicenter prospective observational study of the safety and efficacy of chloroquine for the treatment of COVID-19. <i>medRxiv</i> . Published online May 4, 2020:2020.04.26.20081059. doi:10.1101/2020.04.26.20081059 *Huang M, Li M, Xiao F, et al. Preliminary evidence from a multicenter prospective observational study of the safety and efficacy of chloroquine for the treatment of COVID-19. <i>Natl Sci Rev</i> . doi:10.1093/nsr/nwaa113
5/5/20	5/19/20	Fadel R, Morrison A, Vahia A, et al. Early Short Course Corticosteroids in Hospitalized Patients with COVID-19. <i>medRxiv</i> . Published online May 5, 2020:2020.05.04.20074609. doi:10.1101/2020.05.04.20074609 *Fadel R, Morrison AR, Vahia A, et al. Early Short Course Corticosteroids in Hospitalized Patients with COVID-19. <i>Clin Infect Dis</i> . doi:10.1093/cid/ciaa601
5/6/20		Davidson L, Canelon S, Boland MR. Is Hydroxychloroquine Safe During Pregnancy? Observations from Penn Medicine. <i>medRxiv</i> . Published online May 6, 2020:2020.04.29.20085621. doi:10.1101/2020.04.29.20085621
5/7/20	5/14/20	Tang W, Cao Z, Han M, et al. Hydroxychloroquine in patients mainly with mild to moderate COVID-19: an open-label, randomized, controlled trial. <i>medRxiv</i> . Published online May 7, 2020:2020.04.10.20060558. doi:10.1101/2020.04.10.20060558 Tang W, Cao Z, Han M, et al. Hydroxychloroquine in patients with mainly mild to moderate coronavirus disease 2019: open label, randomised controlled trial. <i>BMJ</i> . 2020;369. doi:10.1136/bmj.m1849
5/8/20		Carlucci P, Ahuja T, Petrilli CM, Rajagopalan H, Jones S, Rahimian J. Hydroxychloroquine and azithromycin plus zinc vs hydroxychloroquine and azithromycin alone: outcomes in hospitalized COVID-19 patients. <i>medRxiv</i> . Published online May 8, 2020:2020.05.02.20080036. doi:10.1101/2020.05.02.20080036

[Asterisked citations are the references of the publications yielded by published preprints. The second preprint on this table, by Gautret et al., yielded two publications.]

eTable 2: References for COVID-19 Publications

Date published in journal	Citation
2/17/20	Lim J, Jeon S, Shin H-Y, et al. Case of the Index Patient Who Caused Tertiary Transmission of Coronavirus Disease 2019 in Korea: the Application of Lopinavir/Ritonavir for the Treatment of COVID-19 Pneumonia Monitored by Quantitative RT-PCR. <i>J Korean Med Sci.</i> 2020;35(6). doi:10.3346/jkms.2020.35.e79
3/11/20	Deng L, Li C, Zeng Q, et al. Arbidol combined with LPV/r versus LPV/r alone against Corona Virus Disease 2019: A retrospective cohort study. <i>J Infect.</i> 2020;81(1):e1-e5. doi:10.1016/j.jinf.2020.03.002
3/12/20	Liu F, Xu A, Zhang Y, et al. Patients of COVID-19 may benefit from sustained Lopinavir-combined regimen and the increase of Eosinophil may predict the outcome of COVID-19 progression. <i>Int J Infect Dis.</i> 2020;95:183-191. doi:10.1016/j.ijid.2020.03.013
3/21/20	Wan S, Xiang Y, Fang W, et al. Clinical features and treatment of COVID-19 patients in northeast Chongqing. <i>J Med Virol.</i> 2020;92(7):797-806. doi:10.1002/jmv.25783
3/24/20	Ye X-T, Luo Y-L, Xia S-C, et al. Clinical efficacy of lopinavir/ritonavir in the treatment of Coronavirus disease 2019. <i>Eur Rev Med Pharmacol Sci.</i> 2020;24(6):3390-3396. doi:10.26355/eurrev_202003_20706
3/27/20	Shen C, Wang Z, Zhao F, et al. Treatment of 5 Critically Ill Patients With COVID-19 With Convalescent Plasma. <i>JAMA.</i> 2020;323(16):1582-1589. doi:10.1001/jama.2020.4783
3/27/20	Zheng C, Wang J, Guo H, et al. Risk-adapted Treatment Strategy For COVID-19 Patients. <i>Int J Infect Dis.</i> 2020;94:74-77. doi:10.1016/j.ijid.2020.03.047
3/27/20	Wu J, Li W, Shi X, et al. Early antiviral treatment contributes to alleviate the severity and improve the prognosis of patients with novel coronavirus disease (COVID-19). <i>J Intern Med.</i> 2020;288(1):128-138. doi:10.1111/joim.13063

3/30/20	Mukherjee A, Ahmad M, Frenia D, A M, M A, D F. A Coronavirus Disease 2019 (COVID-19) Patient with Multifocal Pneumonia Treated with Hydroxychloroquine. <i>Cureus J Med Sci.</i> 2020;12(3). doi:10.7759/cureus.7473
3/31/20	Zhang B, Liu S, Tan T, et al. Treatment With Convalescent Plasma for Critically Ill Patients With Severe Acute Respiratory Syndrome Coronavirus 2 Infection. <i>Chest.</i> 2020;158(1):e9-e13. doi:10.1016/j.chest.2020.03.039
3/31/20	Meng J, Xiao G, Zhang J, et al. Renin-angiotensin system inhibitors improve the clinical outcomes of COVID-19 patients with hypertension. <i>Emerg Microbes Infect.</i> 2020;9(1):757-760. doi:10.1080/22221751.2020.1746200
4/8/20	Zha L, Li S, Pan L, et al. Corticosteroid treatment of patients with coronavirus disease 2019 (COVID-19). <i>Med J Aust.</i> 2020;212(9):416-420. doi:10.5694/mja2.50577
4/8/20	Huang Z, Cao J, Yao Y, et al. The effect of RAS blockers on the clinical characteristics of COVID-19 patients with hypertension. <i>Ann Transl Med.</i> 2020;8(7):430. doi:10.21037/atm.2020.03.229
4/10/20	Zhu Z, Lu Z, Xu T, et al. Arbidol monotherapy is superior to lopinavir/ritonavir in treating COVID-19. <i>J Infect.</i> 2020;81(1):e21-e23. doi:10.1016/j.jinf.2020.03.060
4/13/20	Ahn JY, Sohn Y, Lee SH, et al. Use of Convalescent Plasma Therapy in Two COVID-19 Patients with Acute Respiratory Distress Syndrome in Korea. <i>J Korean Med Sci.</i> 2020;35(14). doi:10.3346/jkms.2020.35.e149
4/13/20	Zhong Z, Zhang Q, Xia H, et al. Clinical characteristics and immunosuppressant management of coronavirus disease 2019 in solid organ transplant recipients. <i>Am J Transplant Off J Am Soc Transplant Am Soc Transpl Surg.</i> 2020;20(7):1916-1921. doi:10.1111/ajt.15928
4/15/20	Ye M, Fu D, Ren Y, et al. Treatment with convalescent plasma for COVID-19 patients in Wuhan, China. <i>J Med Virol.</i> Published online April 15, 2020. doi:10.1002/jmv.25882
4/16/20	Shi X, Lu Y, Li R, et al. Evaluation of antiviral therapies for coronavirus disease 2019 pneumonia in Shanghai, China. <i>J Med Virol.</i> Published online April 16, 2020. doi:10.1002/jmv.25893

4/17/20	Zhang Peng, Zhu Lihua, Cai Jingjing, et al. Association of Inpatient Use of Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers With Mortality Among Patients With Hypertension Hospitalized With COVID-19. <i>Circ Res.</i> 2020;126(12):1671-1681. doi:10.1161/CIRCRESAHA.120.317134
4/17/20	Falcão MB, Cavalcanti LP de G, Filho NMF, Brito CAA de. Case Report: Hepatotoxicity Associated with the Use of Hydroxychloroquine in a Patient with COVID-19. <i>Am J Trop Med Hyg.</i> 2020;102(6):1214-1216. doi:10.4269/ajtmh.20-0276
4/18/20	Zhu L, Gong N, Liu B, et al. Coronavirus Disease 2019 Pneumonia in Immunosuppressed Renal Transplant Recipients: A Summary of 10 Confirmed Cases in Wuhan, China. <i>Eur Urol.</i> 2020;77(6):748-754. doi:10.1016/j.eururo.2020.03.039
4/21/20	Mathies D, Rauschnig D, Wagner U, et al. A case of SARS-CoV-2 pneumonia with successful antiviral therapy in a 77-year-old man with a heart transplant. <i>Am J Transplant Off J Am Soc Transplant Am Soc Transpl Surg.</i> 2020;20(7):1925-1929. doi:10.1111/ajt.15932
4/22/20	Zhang L, Pang R, Xue X, et al. Anti-SARS-CoV-2 virus antibody levels in convalescent plasma of six donors who have recovered from COVID-19. <i>Aging.</i> 2020;12(8):6536-6542. doi:10.18632/aging.103102
4/23/20	Li J, Wang X, Chen J, Zhang H, Deng A. Association of Renin-Angiotensin System Inhibitors With Severity or Risk of Death in Patients With Hypertension Hospitalized for Coronavirus Disease 2019 (COVID-19) Infection in Wuhan, China. <i>JAMA Cardiol.</i> 2020;5(7):825-830. doi:10.1001/jamacardio.2020.1624
4/23/20	Fontana F, Alfano G, Mori G, et al. COVID-19 pneumonia in a kidney transplant recipient successfully treated with tocilizumab and hydroxychloroquine. <i>Am J Transplant Off J Am Soc Transplant Am Soc Transpl Surg.</i> 2020;20(7):1902-1906. doi:10.1111/ajt.15935
4/23/20	Y B, Y A, B A, K S. COVID-19 infection and treatment with hydroxychloroquine cause severe haemolysis crisis in a patient with glucose-6-phosphate dehydrogenase deficiency. <i>Eur J Haematol.</i> Published online April 23, 2020. doi:10.1111/ejh.13432

4/24/20	Mathian A, Mahevas M, Rohmer J, et al. Clinical course of coronavirus disease 2019 (COVID-19) in a series of 17 patients with systemic lupus erythematosus under long-term treatment with hydroxychloroquine. <i>Ann Rheum Dis.</i> 2020;79(6):837-839. doi:10.1136/annrheumdis-2020-217566
4/28/20	Al-Kofahi M, Jacobson P, Boulware DR, et al. Finding the Dose for Hydroxychloroquine Prophylaxis for COVID-19: The Desperate Search for Effectiveness. <i>Clin Pharmacol Ther.</i> n/a(n/a). doi:10.1002/cpt.1874
4/29/20	Saleh M, Gabriels J, Chang D, et al. Effect of Chloroquine, Hydroxychloroquine, and Azithromycin on the Corrected QT Interval in Patients With SARS-CoV-2 Infection. <i>Circ Arrhythm Electrophysiol.</i> 2020;13(6):e008662. doi:10.1161/CIRCEP.120.008662
4/29/20	Van den Broek MPH, Möhlmann JE, Abeln BGS, Liebrechts M, van Dijk VF, van de Garde EMW. Chloroquine-induced QTc prolongation in COVID-19 patients. <i>Neth Heart J.</i> 2020;28(7):406-409. doi:10.1007/s12471-020-01429-7
4/29/20	Zeng Q-L, Yu Z-J, Gou J-J, et al. Effect of Convalescent Plasma Therapy on Viral Shedding and Survival in Patients With Coronavirus Disease 2019. <i>J Infect Dis.</i> 2020;222(1):38-43. doi:10.1093/infdis/jiaa228
4/29/20	Intson K, Kumar S, Botta A, Neckles R, Leung C, Jawaid A. An independent appraisal and re-analysis of hydroxychloroquine treatment trial for COVID-19. <i>Swiss Med Wkly.</i> 2020;150(1718). doi:10.4414/smw.2020.20262
4/30/20	Vouri SM, Thai TN, Winterstein AG. An evaluation of co-use of chloroquine or hydroxychloroquine plus azithromycin on cardiac outcomes: A pharmacoepidemiological study to inform use during the COVID19 pandemic. <i>Res Soc Adm Pharm.</i> Published online April 30, 2020. doi:10.1016/j.sapharm.2020.04.031
5/1/20	Mancia G, Rea F, Ludergnani M, Apolone G, Corrao G. Renin–Angiotensin–Aldosterone System Blockers and the Risk of Covid-19. <i>N Engl J Med.</i> 2020;382(25):2431-2440. doi:10.1056/NEJMoa2006923
5/1/20	Reynolds HR, Adhikari S, Pulgarin C, et al. Renin–Angiotensin–Aldosterone System Inhibitors and Risk of Covid-19. <i>N Engl J Med.</i> Published online May 1, 2020. doi:10.1056/NEJMoa2008975

5/1/20	Mercurio NJ, Yen CF, Shim DJ, et al. Risk of QT Interval Prolongation Associated With Use of Hydroxychloroquine With or Without Concomitant Azithromycin Among Hospitalized Patients Testing Positive for Coronavirus Disease 2019 (COVID-19). <i>JAMA Cardiol</i> . Published online May 1, 2020. doi:10.1001/jamacardio.2020.1834
5/1/20	Bessi�re F, Roccia H, Delini�re A, et al. Assessment of QT Intervals in a Case Series of Patients With Coronavirus Disease 2019 (COVID-19) Infection Treated With Hydroxychloroquine Alone or in Combination With Azithromycin in an Intensive Care Unit. <i>JAMA Cardiol</i> . Published online May 1, 2020. doi:10.1001/jamacardio.2020.1787
5/5/20	Qin Y-Y, Zhou Y-H, Lu Y-Q, et al. Effectiveness of glucocorticoid therapy in patients with severe coronavirus disease 2019: protocol of a randomized controlled trial. <i>Chin Med J (Engl)</i> . 2020;133(9):1080-1086. doi:10.1097/CM9.0000000000000791
5/5/20	Mehta N, Kalra A, Nowacki AS, et al. Association of Use of Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers With Testing Positive for Coronavirus Disease 2019 (COVID-19). <i>JAMA Cardiol</i> . Published online May 5, 2020. doi:10.1001/jamacardio.2020.1855
5/5/20	Gendelman O, Amital H, Bragazzi NL, Watad A, Chodick G. Continuous hydroxychloroquine or colchicine therapy does not prevent infection with SARS-CoV-2: Insights from a large healthcare database analysis. <i>Autoimmun Rev</i> . 2020;19(7):102566. doi:10.1016/j.autrev.2020.102566
5/7/20	Cao B, Wang Y, Wen D, et al. A Trial of Lopinavir–Ritonavir in Adults Hospitalized with Severe Covid-19. <i>N Engl J Med</i> . 2020;382(19):1787-1799. doi:10.1056/NEJMoa2001282
5/7/20	Geleris J, Sun Y, Platt J, et al. Observational Study of Hydroxychloroquine in Hospitalized Patients with Covid-19. <i>N Engl J Med</i> . 2020;382(25):2411-2418. doi:10.1056/NEJMoa2012410
5/7/20	Asli R, Abdullah MS, Chong PL, et al. Case Report: Right Bundle Branch Block and QTc Prolongation in a Patient with COVID-19 Treated with Hydroxychloroquine. <i>Am J Trop Med Hyg</i> . 2020;103(1):79-82. doi:10.4269/ajtmh.20-0376
5/7/20	Holzhauser L, Lourenco L, Sarswat N, Kim G, Chung B, Nguyen AB. Early experience of COVID-19 in 2 heart transplant recipients: Case reports and review of treatment options. <i>Am J Transplant Off J Am Soc Transplant Am Soc Transpl Surg</i> . Published online May 7, 2020. doi:10.1111/ajt.15982

5/8/20	Hung IF-N, Lung K-C, Tso EY-K, et al. Triple combination of interferon beta-1b, lopinavir–ritonavir, and ribavirin in the treatment of patients admitted to hospital with COVID-19: an open-label, randomised, phase 2 trial. <i>The Lancet</i> . 2020;395(10238):1695-1704. doi:10.1016/S0140-6736(20)31042-4
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