

Covid -19 Evidence Update

Summarized and appraised resources

02/11/2020

The following resources are available via electronically or in print. Please follow links to access full text online, or contact the library if you have any difficulties with the links.

The resources included in this update are summaries or critically appraised articles.

If you would like a more specific search conducted please email kgh-tr.library.service@nhs.net

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Royal College/Society Guidance

Latest information and guidance

NICE Rapid guidelines and evidence summaries	NHS England and NHS Improvement Advice for clinicians in secondary care <i>(Includes Prevention, Infection control, Assessment, Management, Discharge, Isolation, Speciality guides, Estates and facilities, Finance ...)</i>
Royal College of Emergency Medicine Covid-19 resources	Association for Palliative Medicine Covid 19 and Palliative, End of Life and Bereavement Care
Royal College of General Practitioners COVID-19	Royal College of Obstetrics & Gynaecologists Coronavirus (COVID-19), pregnancy and women's health
Royal College of Paediatrics and Child Health Key topics COVID 19	Royal College of Pathologists COVID-19 Resources Hub
Royal College of Psychiatrists COVID-19: Community mental health settings	Royal College of Surgeons COVID 19 Information Hub
Royal Pharmaceutical Society COVID-19	British Society of Echocardiography COVID-19 clinical guidance
British Society of Gastroenterology COVID 19 updates	British Society for Haematology COVID-19 Updates
British Society for Rheumatology COVID-19 updates for members	Combined Intensive Care Society, Association of Anaesthetists, Royal College of Anaesthetists, Faculty of Intensive Care Medicine guidance Clinical Guidance

Covid-19 Evidence Alerts from McMaster Plus

COVID-19 Evidence Alerts to current best evidence for clinical care of people with threatened, suspected or confirmed COVID-19 infection. Reports are critically appraised for scientific merit, and those with acceptable scientific merit are appraised for relevance and importance by frontline clinicians.

<p>Diagnosis</p> <p>RT-qPCR assays based on saliva rather than on nasopharyngeal swabs are possible but should be interpreted with caution: results from a systematic review and meta-analysis. <i>Ricco M, Ranzieri S, Peruzzi S, et al. Acta Biomed</i></p> <p>Thoracic imaging tests for the diagnosis of COVID-19. <i>Salameh JP, Leeflang MM, Hooft L, et al. Cochrane Database Syst Rev</i></p>
<p>Etiology</p> <p>Angiotensin-converting enzyme inhibitors and angiotensin-receptor blockers and the risk of COVID-19 infection or severe disease: Systematic Review and meta-analysis. <i>Caldeira D, Alves M, Gouveia E Melo R, et al. Int J Cardiol Heart Vasc</i></p> <p>Angiotensin Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers and Outcomes in patients with COVID-19: A Systematic Review and Meta-Analysis. <i>Lo KB, Bhargav R, Salacup G, et al. Expert Rev Cardiovasc Ther</i></p> <p>Mortality and Disease Severity Among COVID-19 Patients Receiving Renin-Angiotensin System Inhibitors: A Systematic Review and Meta-analysis. <i>Hasan SS, Kow CS, Hadi MA, et al. Am J Cardiovasc Drugs</i></p> <p>Renin-Angiotensin System Inhibitors and COVID-19: a Systematic Review and Meta-Analysis. Evidence for Significant Geographical Disparities. <i>Patoulias D, Katsimardou A, Stavropoulos K, et al. Curr Hypertens Rep</i></p> <p>Severity and mortality of COVID 19 in patients with diabetes, hypertension and cardiovascular disease: a meta-analysis. <i>de Almeida-Pititto B, Dualib PM, Zajdenverg L, et al. Diabetol Metab Syndr</i></p>
<p>Prognosis</p> <p>The effect of coronavirus infection (SARS-CoV-2, MERS-CoV, and SARS-CoV) during pregnancy and the possibility of vertical maternal-fetal transmission: a systematic review and meta-analysis. <i>Diriba K, Awulachew E, Getu E Eur J Med Res</i></p>
<p>Clinical Prediction Guide</p> <p>Living risk prediction algorithm (QCOVID) for risk of hospital admission and mortality from coronavirus 19 in adults: national derivation and validation cohort study. <i>Clift AK, Coupland CAC, Keogh RH, et al. BMJ</i></p> <p>ANDC: an early warning score to predict mortality risk for patients with Coronavirus Disease 2019. <i>Weng Z, Chen Q, Li S, et al. J Transl Med</i></p> <p>Death risk stratification in elderly patients with covid-19. A comparative cohort study in nursing homes outbreaks. <i>Bernabeu-Wittel M, Ternero-Vega JE, Diaz-Jimenez P, et al. Arch Gerontol Geriatr</i></p>
<p>Treatment</p> <p>Evaluation of current medical approaches for COVID-19: a systematic review and meta-analysis. <i>Wang M, Wu T, Zuo Z, et al. BMJ Support Palliat Care</i></p> <p>Convalescent plasma in the management of moderate covid-19 in adults in India: open label phase II multicentre randomised controlled trial (PLACID Trial). <i>Agarwal A, Mukherjee A, Kumar G, et al. BMJ</i></p> <p>Immune Therapy, or Antiviral Therapy, or Both for COVID-19: A Systematic Review. <i>Cantini F, Goletti D, Petrone L, et al. Drugs</i></p> <p>Effect of Tocilizumab vs Standard Care on Clinical Worsening in Patients Hospitalized With COVID-19</p>

<p>Pneumonia: A Randomized Clinical Trial. Salvarani C, Dolci G, Massari M, et al. JAMA Intern Med</p>
<p>Effect of Tocilizumab vs Usual Care in Adults Hospitalized With COVID-19 and Moderate or Severe Pneumonia: A Randomized Clinical Trial. Hermine O, Mariette X, Tharaux PL, et al. JAMA Intern Med</p>
<p>Efficacy of Tocilizumab in COVID-19: A Systematic review and Meta-Analysis. Aziz M, Haghbin H, Sitta EA, et al. J Med Virol</p>
<p>Convalescent Plasma Therapy and Its Effects On COVID-19 Patient Outcomes: A Systematic Review of Current Literature. Bakhtawar N, Usman M, Khan MMU Cureus</p>
<p>Hydroxychloroquine use and progression or prognosis of COVID-19: a systematic review and meta-analysis. Zang Y, Han X, He M, et al. Naunyn Schmiedebergs Arch Pharmacol</p>
<p>Are the steroids a blanket solution for COVID-19? a systematic review and meta-analysis. Sarkar S, Khanna P, Soni KD J Med Virol</p>
<p>Chloroquine and Hydroxychloroquine for the Treatment of COVID-19: a Systematic Review and Meta-analysis. Elavarasi A, Prasad M, Seth T, et al. J Gen Intern Med</p>
<p>Efficacy of Tocilizumab in Patients Hospitalized with Covid-19. Stone JH, Frigault MJ, Serling-Boyd NJ, et al. N Engl J Med</p>
<p>No benefit of hydroxychloroquine in COVID-19: Results of Systematic Review and Meta-Analysis of Randomized Controlled Trials". Pathak DSK, Salunke DAA, Thivari DP, et al. Diabetes Metab Syndr</p>
<p>Interventions for treatment of COVID-19: A living systematic review with meta-analyses and trial sequential analyses (The LIVING Project). Juil S, Nielsen EE, Feinberg J, et al. PLoS Med</p>
<p>Immunomodulatory-based therapy as a potential promising treatment strategy against severe COVID-19 patients: A systematic review. Razmi M, Hashemi F, Gheytauchi E, et al. Int Immunopharmacol</p>
<p>Convalescent plasma or hyperimmune immunoglobulin for people with COVID-19: a living systematic review. Chai KL, Valk SJ, Piechotta V, et al. Cochrane Database Syst Rev</p>
<p>Pharmacological therapies for patients with human coronavirus infections: a rapid systematic review. Andrade KRC, Carvalho VKDS, Farinasso CM, et al. Cien Saude Colet</p>
<p>Chemoprophylaxis, diagnosis, treatments, and discharge management of COVID-19: An evidence-based clinical practice guideline (updated version). Jin YH, Zhan QY, Peng ZY, et al. Mil Med Res</p>
<p>Remdesivir for Adults With COVID-19 : A Living Systematic Review for an American College of Physicians Practice Points. Wilt TJ, Kaka AS, MacDonald R, et al. Ann Intern Med</p>
<p>Effect of Hydroxychloroquine in Hospitalized Patients with Covid-19. Horby P, Mafham M, Linsell L, et al. N Engl J Med</p>
<p>SARS-CoV-2 pharmacologic therapies and their safety/effectiveness according to level of evidence. Baroutjian A, Sanchez C, Boneva D, et al. Am J Emerg Med</p>
<p>Lopinavir-ritonavir in patients admitted to hospital with COVID-19 (RECOVERY): a randomised, controlled, open-label, platform trial. Lancet</p>

Cochrane Systematic Reviews

Cochrane Evidence on COVID-19: a roundup

There were no new Cochrane reviews published in the last two weeks.

Evidence Aid

<https://evidenceaid.org/evidence/coronavirus-covid-19/>

This evidence collection contains plain-language summaries of high-quality research which are available in English, and translated into French, Spanish, Portuguese, Arabic and Chinese (simplified and traditional).

The collection includes summaries of systematic reviews that might be relevant to the direct impact of COVID-19 (including reviews of emerging research, as well as existing reviews of relevant interventions) on health and other outcomes, the impact of the COVID-19 response on other conditions, and issues to consider for the recovery period after COVID-19.

Children and COVID-19 (multiple reviews)

What is this? There are many systematic reviews of the evidence on COVID-19 and children. Findings from 21 of these are summarised below. More details of each of these, including citations and links to the full reviews, are available further down this page.

What was found: Several rapid reviews have noted that children are less likely to experience severe COVID-19 infection, with many children experiencing mild symptoms. The most common symptoms reported were fever and cough.

Overall, the prognosis of COVID-19 infection in children is noted to be good.

The Mehta review suggested that children may be as susceptible to COVID-19 infection as adults but typically experience a milder illness.

A range of abnormal blood laboratory investigations have been found in children with COVID-19: elevated C-reactive protein, lactate dehydrogenase, procalcitonin, creatine-kinase, D-dimer and interleukin-6; but no clear pattern of white blood cell abnormalities was identified.

The Hoang review reported that multi-system inflammatory syndrome was rare among children with COVID-19.

It is uncertain whether young age is a risk factor for severe infection among children. The Panahi review reported young age to be a risk factor but the Gordon review, which was focused on neonates, found that most cases were of mild severity.

Children with underlying health conditions are at increased risk of severe infection or complications. The Hoang review reported that the most frequent underlying health conditions among children with COVID-19 were immunosuppression, respiratory disease and cardiac disease.

Two rapid reviews noted that COVID-19 infection in children was often associated with a history of family clusters of infection.

The Hoang review reported that co-infection is uncommon in children with COVID-19 infection and the Wang review reported that there is no evidence to support the use of antibiotics in children with COVID-19 in the absence of bacterial co-infection.

Respiratory and gastrointestinal viral shedding has been reported, with Xu (2020) noting gastrointestinal viral shedding can persist after the resolution of respiratory viral shedding.

Imaging abnormalities in children with COVID-19 can include ground-glass opacities and patchy consolidation. Several reviews noted that most children with COVID-19 had abnormal chest imaging and some imaging abnormalities have been detected in asymptomatic children.

The Chang review reported that COVID-19 infection in children is best diagnosed by ground-glass opacities on chest radiography, contact tracing and epidemiological suspicion.

The Shi review reported that there is no evidence to support the use of antiviral agents in children with COVID-19.

The Prato review makes several recommendations for endoscopic surgery if this is indicated in children with COVID-19.

What are the reviews:

Citation: Castagnoli R, Votto M, Licari A, et al. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection in Children and Adolescents: A Systematic Review. JAMA Pediatrics. 2020;174(9):882-9.

In this rapid review, the authors searched for reports on children and adolescents (19 years or younger) with COVID-19. They did not restrict their searches by language of publication and searched for articles published from December 2019 to 3 March 2020. They included 18 studies (total: 1065 participants), from China (17 studies) and Singapore (1).

Citation: Chang TH, Wu JL, Chang LY. Clinical characteristics and diagnostic challenges of pediatric COVID-19: a systematic review and meta-analysis. Journal of the Formosan Medical Association. 2020;119(5):982-9.

In this rapid review, the authors searched for studies that analyzed the epidemiological and clinical characteristics of COVID-19 in patients under 18 years. The authors did not restrict their search by language, and included research published between January 2020 and 15 March 2020. They included 9 case series (total: 93 children).

Citation: de Souza TH, Nadal JA, Nogueira RJ, et al. Clinical manifestations of children with COVID-19: a systematic review. Pediatric Pulmonology 2020;55(8):1892-9.

In this rapid review, the authors searched for studies describing the clinical manifestations of COVID-19 in children. They did not restrict their searches by language of publication and searched for articles published between December 2019 and 6 April 2020. They included 38 observational studies (total: 1124 children), of which most of these were from China (33).

Citation: Gavriilidis P, Pai M. The Impact of COVID-19 Global Pandemic on Morbidity and Mortality of Liver Transplant Recipients Children and Adults: A Systematic Review of Case Series. Journal of Clinical Medicine Research. 2020 Jul;12(7):404.

In this rapid review, the authors searched for studies of the impact of COVID-19 on liver transplant recipients in adults and children. They searched up to April 2020. They included 5 case reports/series (including 700 children). The evidence among liver transplant recipients was noted to be scarce.

Citation: Gordon M, Kagalwala T, Rezk K, et al. *Rapid systematic review of neonatal COVID-19 including a case of presumed vertical transmission*. *BMJ Paediatrics Open*. 2020;4(1):e000718.

In this rapid review, the authors searched for studies of COVID-19 in neonates. They searched for articles published from December 2019 to 12 May 2020. They included 8 studies (total: 10 cases).

Citation: Henry BM, Benoit SW, de Oliveira MH, et al. *Laboratory Abnormalities in Children with Mild and Severe Coronavirus Disease 2019 (COVID-19): a pooled analysis and review*. *Clinical Biochemistry*. 2020 May 27;81:1-8.

In this rapid review, the authors searched for studies of laboratory abnormalities in children with COVID-19. They did not restrict their searches by language of publication and searched for articles published from December 2019 to 1 May 2020. They included 24 studies (total: 624 children).

Citation: Ho CL, Oligbu P, Ojbolamo O, et al. *Clinical Characteristics of Children with COVID-19*. *AIMS Public Health*. 2020;7(2):258-73.

In this rapid review, the authors searched for studies describing clinical characteristics of COVID-19 in patients under 18 years. They searched for studies published between June 2019 and 18 March 2020. They included 8 case series (total: 820 cases), which were all from China.

Citation: Hoang A, Chorath K, Moreira A, et al. *COVID-19 in 7780 pediatric patients: a systematic review*. *EClinicalMedicine*. 2020 Jul 1;24:100433.

In this rapid review, the authors searched for studies of the diagnosis and management of children with COVID-19. They searched for articles published from December 2019 to 14 May 2020. They included 131 studies (total: 7780 children), which were from 26 countries.

Citation: Kumar J, Meena J, Yadav A, et al. *Radiological Findings of COVID-19 in Children: A Systematic Review and Meta-Analysis*. *Journal of Tropical Pediatrics*. 2020 Jul 21;fmaa045.

In this rapid review, the authors searched for studies of radiological findings for COVID-19 patients under 19 years. They searched for articles published from December 2019 to 20 May 2020. They included 46 studies (total: 923 participants), of which 42 were from China.

Citation: Mehta N, Mytton O, Mullins E, et al. *SARS-CoV-2 (COVID-19): What do we know about children? A systematic review*. *Clinical Infectious Diseases* 2020 May 11;ciaa556.

In this rapid review, the authors searched for studies of COVID-19 infection risk, transmission or severity in children. They restricted their searches to articles published in English up to 9 March 2020. They included 24 studies.

Citation: Minotti C, Tirelli F, Barbieri E, et al. *How is immunosuppressive status affecting children and adults in SARS-CoV-2 infection? A systematic review*. *Journal of Infection*. 2020;81(1):e61-6.

In this rapid review, the authors searched for research in adults and children with COVID-19 infection and underlying immunosuppression from a variety of causes. They restricted their searches to articles published in English and did their most recent search on 31 March 2020. They included 16 articles (total: 110 immunosuppressed patients), from Asia (13 articles) and Europe (3).

Citation: Mustafa NM, Selim LA. *Characterisation of COVID-19 Pandemic in Paediatric Age Group: A Systematic Review*. Journal of Clinical Virology. 2020 May 8:104395.

In this rapid review and meta-analysis, the authors searched for articles reporting incidence, disease characterization, and modes of transmission of COVID-19 in pediatric patients. They restricted their searches to articles published in English up to 2 April 2020. They included 33 studies, of which 17 were included in the meta-analysis.

Citation: Panahi L, Amiri M, Pouy S. *Clinical characteristics of COVID-19 infection in newborns and pediatrics: a systematic review*. Archives of Academic Emergency Medicine. 2020;8(1):e50.

In this rapid review, the authors searched for studies of the clinical manifestations of COVID-19 in children and infants. They restricted their search to articles published in English and Persian from December 2019 to 30 March 2020. They included 14 articles (total: 2228 children).

Citation: Pini Prato A, Conforti A, Almstrom M, et al. *Management of COVID-19-Positive Pediatric Patients Undergoing Minimally Invasive Surgical Procedures: Systematic Review and Recommendations of the Board of European Society of Pediatric Endoscopic Surgeons*. Frontiers in Pediatrics. 2020 May 7;8:259.

In this rapid review, the authors searched for research and guidelines on paediatric endoscopy practice in the context of COVID-19. They restricted their search to articles published in English but do not report the search date (the review was published on 7 May 2020). They included 11 articles.

Citation: Sanna G, Serrau G, Bassareo PP, et al. *Children's heart and COVID-19: Up-to-date evidence in the form of a systematic review*. European Journal of Pediatrics. 2020 May 30:179:1079-87.

In this rapid review, the authors searched for studies assessing the link between COVID-19 and cardiac involvement in children. They searched up to 16 April 2020. They included 46 articles, including seven studies specific to COVID-19 and paediatric cardiovascular involvement (all from China).

Citation: Shi Q, Zhou Q, Wang X, et al. *Potential Effectiveness and Safety of Antiviral Agents in Children with Coronavirus Disease 2019: A Rapid Review and Meta-Analysis*. Annals of Translational Medicine 2020;8(10):624.

In this rapid review, the authors searched for studies of interventions with antiviral agents for children with COVID-19, and for children or adults with SARS and MERS. They restricted their searches to articles published in English or Chinese up to 31 March 2020. They included 23 studies (total: 6008 patients) related to COVID-19 (7 studies), SARS (13) and MERS (3).

Citation: Wang Z, Zhou Q, Wang C, et al. *Clinical Characteristics of Children with COVID-19: A Rapid Review and Meta-Analysis*. Annals of Translational Medicine 2020;8(10):620

In this rapid review, the authors searched for studies reporting the clinical characteristics of COVID-19 in children. They did not restrict their searches by language of publication and included articles published up to 31 March 2020. They included 25 case reports, 23 case series and 1 cohort study.

Citation: Wang J, Tang Y, Ma Y, et al. *Efficacy and Safety of Antibiotic Agents in Children with COVID-19: A Rapid Review*. Annals of Translational Medicine 2020;8(10):619

In this rapid review, the authors searched for studies of the efficacy and safety of antibiotics in children with COVID-19. They searched up to 31 March 2020 and included 6 studies.

Citation: Xu CL, Raval M, Schnall JA, et al. *Duration of respiratory and gastrointestinal viral shedding in children with SARS-CoV-2: a systematic review and synthesis of data*. The Pediatric Infectious Disease Journal. 2020 Jul 7;39(9):e249-56.

In this rapid review, the authors searched for research assessing the average viral shedding time in the respiratory and gastrointestinal tracts of children. They restricted their search to articles published in English and did the search on 8 May 2020. They included 11 case series and 6 case reports.

Citation: Zhang L, Peres TG, Silva MV, et al. *What we know so far about Coronavirus Disease 2019 in children: A meta-analysis of 551 laboratory-confirmed cases*. Pediatric Pulmonology. 2020;55(8):2115-27.

In this rapid review and meta-analysis, the authors searched for randomized trials and observational studies of children with COVID-19. They did not restrict their searches by language of publication and searched for articles published between 1 January 2020 and 4 May 2020. They included 46 studies (total: 551 children), most of which were from China (35).

Other reviews of this topic:

Citation: Pei Y, Liu W, Masokano IB, et al. *Comparing Chinese children and adults with RT-PCR positive COVID-19: A systematic review*. Journal of Infection and Public Health. 2020;13(10):1424-31.

[Diagnostic tests for COVID-19 \(research up to 9 April 2020\)](#)

Citation: Shirvani A, Azimi L, Ghanaie RM, et al. *Utility of Available Methods for Diagnosing SARS-CoV-2 in Clinical Samples*. Archives of Pediatric Infectious Diseases 2020;8(3):e103677.

What is this? A variety of diagnostic tests are being used to identify patients infected with SARS-CoV-2, the virus that causes COVID-19.

In this rapid review, the authors searched for studies of the clinical diagnosis of COVID-19. They restricted their searches to articles published in English up to 9 April 2020. They included 54 articles, reporting 46 studies.

What was found: At the time of this review, the included studies showed that although RT-PCR tests are reliable, they cannot act as a gold standard test alone because of measurement biases.

At the time of this review, the included studies showed that alternative diagnostic tests such as antibody tests may be used to supplement RT-PCR testing.

At the time of this review, the included studies showed that serological tests are not as reliable as RT-PCR tests.

[Treatment possibilities for COVID-19 \(research up to 11 May 2020\)](#)

Citation: Chandrasekar V, Venkatesalu B, Patel HK, et al. *Systematic review and meta-analysis of effectiveness of treatment options against SARS-CoV-2 infection*. Journal of Medical Virology. 2020 Jul 15:10.1002/jmv.26302.

What is this? A wide variety of treatments have been suggested for COVID-19 patients.

In this rapid review, the authors searched for studies of the effects of therapeutic interventions for adult patients with COVID-19. They restricted their searches to articles published between 1 December 2019 and 11 May 2020. They included 29 studies (total: 5207 patients) from Brazil (1 study), China (19), France (4), Korea (1) and USA (4).

What was found: At the time of this review, the included studies showed that there was no overall mortality or clinical benefit for most therapeutic interventions examined.

At the time of this review, the included studies showed that hydroxychloroquine was associated with increased mortality and increased risk of adverse events among COVID-19 patients.

[Hypertension and COVID-19 \(multiple reviews\)](#)

What is this? Some patients with COVID-19 will have pre-existing high blood pressure or hypertension, which may affect the impact of COVID-19 on them. Several relevant systematic reviews have been done and their findings are summarised here. More details of these reviews, including citations and links to their full text, are available lower down this page.

What was found: Several reviews have noted that hypertension was associated with poorer outcomes for COVID-19 patients. These include more severe infection and disease progression, increased need for ICU admission and higher mortality.

Four reviews assessed the impact of a particular antihypertensive treatment group (RAS inhibitors, including ACE inhibitors and angiotensin II receptor blockers (ARBs), which are often prescribed for hypertension). These reviews did not report any increased risk of COVID-19 infection, severity of infection or mortality from infection with the use of these medications, and some reviews reported a protective effect from ACE inhibitors or ARB antihypertensive treatment in COVID-19 patients.

What are the reviews:

Citation: Borges do Nascimento IJ, Cacic N, Abdulazeem HM, et al. *Novel Coronavirus Infection (COVID-19) in Humans: A Scoping Review and Meta-Analysis*. Journal of Clinical Medicine. 2020;9:941

In this rapid scoping review, the authors searched for observational research on the clinical, epidemiological, testing and imaging characteristics of SARS-CoV-2. They did not restrict their searches by type or language of publication and searched for studies published between 1 January 2019 and 24 February 2020. They identified a total of 60 observational studies (59,254 patients) and did meta-analysis of clinical and laboratory data, including that relating to hypertension.

Citation: Emami A, Javanmardi F, Pirbonyeh N, et al. *Prevalence of underlying diseases in hospitalized patients with COVID-19: A systematic review and meta-analysis*. Archives of Academic Emergency Medicine. 2020;8(1):e35

In this rapid systematic review, the authors searched for articles reporting clinical characteristics or epidemiological information for hospitalized patients with COVID-19. They did not restrict their searches by type or language of publication (but only evaluated the abstracts for articles published in Chinese) and did

the search up to 16 February 2020. They included 7 cross-sectional studies that reported on the prevalence of hypertension in COVID-19 patients.

Citation: Hu Y, Sun J, Dai Z, et al. *Prevalence and severity of corona virus disease 2019 (COVID-19): A systematic review and meta-analysis.* Journal of Clinical Virology. 2020 April 14:104371.

Free to view: No

In this rapid review, the authors searched for research evaluating the prevalence and severity of illness for COVID-19 patients. They did not restrict their searches by language of publication and did the search on 10 March 2020. They included a total of 21 clinical studies (total: 47,344 patients), which were from China (20 studies) and Singapore (1); some of which reported on hypertension.

Citation: Mackey K, King VJ, Gurley S, et al. *Risks and Impact of Angiotensin-Converting Enzyme Inhibitors or Angiotensin-Receptor Blockers on SARS-CoV-2 Infection in Adults: A Living Systematic Review.* Annals of Internal Medicine. 2020;173(3):195-203.

In this living systematic review, the authors searched for studies that examined associations and effects of ACE inhibitors or ARBs on risk for SARS-CoV-2 infection and COVID-19 disease severity and mortality in adults. They did not restrict their searches by language of publication and did the search for this version of the review on 4 May 2020. They included 14 observational studies and identified 4 ongoing randomized trials testing ACEIs or ARBs as treatments for COVID-19.

Citation: Parveen R, Sehar N, Bajpai R, et al. *Association of diabetes and hypertension with disease severity in COVID-19 patients: A systematic literature review and exploratory meta-analysis.* Diabetes Research and Clinical Practice. 2020 Aug 1;166:108295.

In this rapid review, the authors searched for studies that evaluated the association between diabetes and hypertension, and COVID-19 severity and outcomes. They included studies published in English up to 31 March 2020. They identified 3 cohort studies and 4 case series (total: 2018 participants), all conducted in China.

Citation: Pirola CJ, Sookoian S. *Estimation of RAAS-Inhibitor effect on the COVID-19 outcome: A Meta-analysis.* Journal of Infection. 2020;81(2);276-81.

In this rapid review, the authors searched for studies assessing the association between ACE inhibitors and ARB treatments for hypertension and COVID-19 severity. They restricted their search to studies published in English and searched from December 2019 to 9 May 2020. They included 16 studies from a range of countries (total: 24,676 participants).

Citation: Pranata R, Lim MA, Huang I, et al. *Hypertension is associated with increased mortality and severity of disease in COVID-19 pneumonia: A systematic review, meta-analysis and meta-regression.* Journal of the renin-angiotensin-aldosterone system: JRAAS. 2020 Apr-Jun;21(2).

In this rapid review, the authors searched for research studies enrolling adult COVID-19 patients with information on hypertension and outcomes of interest (mortality, severe disease, acute respiratory distress syndrome, intensive care unit care and disease progression). They restricted their searches to studies with at least 20 patients that were published in English and did the search on 7 April 2020. They included 30 observational studies, most of which were published as pre-prints at the time of the review.

Citation: Tian W, Jiang W, Yao J, et al. *Predictors of mortality in hospitalized COVID-19 patients: A systematic review and meta-analysis.* Journal of Medical Virology. 2020 Oct;92(10):1875-83.

In this rapid review, the authors searched for studies on predictors of mortality in hospitalized COVID-19 patients. They did not restrict their searches by language and searched for articles published between 1 January 2020 and 24 April 2020. They included 11 studies with information on hypertension.

Citation: Usman MS, Siddiqi TJ, Khan MS, et al. *A Meta-Analysis of the Relationship Between Renin-Angiotensin-Aldosterone System Inhibitors and COVID-19*. American Journal of Cardiology. 2020 Jun 2:130;159-61.

For this meta-analysis, the authors searched for studies examining the risk of testing positive for COVID-19 or the risk of mortality in COVID-positive patients for hypertensive patients prescribed RAAS inhibitors versus those not using these drugs. They did the search in May 2020. They included 8 studies (total: 62,706 patients) from China (4 studies), Italy (1) and USA (3).

Citation: Yang J, Zheng Y, Gou X, et al. *Prevalence of comorbidities in the novel Wuhan coronavirus (COVID-19) infection: a systematic review and meta-analysis*. International Journal of Infectious Diseases. 2020;94:91-5.

In this rapid review, the authors searched for studies which described the epidemiological, clinical features of COVID-19, and the prevalence of chronic diseases in COVID-19 patients. They restricted their search to articles published since January 2019 and did the search on 25 February 2020. They included 4 studies which provided data on the prevalence of hypertension in COVID-19 patients.

Citation: Zhang J, Wu J, Sun X, et al. *Association of hypertension with the severity and fatality of SARS-CoV-2 infection: A meta-analysis*. Epidemiology & Infection. 2020;148:e106.

In this meta-analysis, the authors searched for research studies exploring the relationship between hypertension and clinically severe COVID-19 patients in China. They restricted their searches to articles published in English and Chinese, between December 2019 and 20 March 2020. They included 18 retrospective studies, 12 analyzing COVID-19 severity and 6 analyzing COVID-19 mortality in patients with hypertension.

Citation: Zhang X, Yu J, Pan LY, et al. *ACEI/ARB use and risk of infection or severity or mortality of COVID-19: a systematic review and meta-analysis*. Pharmacological Research. 2020 May 15:104927.

In this systematic review and meta-analysis, the authors searched for research into the effects of ACE inhibitors and ARB treatments compared to other anti-hypertensives in COVID-19 patients. They did not restrict their searches by type or language of publication and searched for articles published between January 2020 and 9 May 2020. They included 7 cohort studies and 5 case-control studies, with more than 19,000 patients included.

Citation: Zheng Z, Peng F, Xu B, et al. *Risk factors of critical & mortal COVID-19 cases: A systematic literature review and meta-analysis*. Journal of Infection 2020 Aug;81(2):e16-e25.

Free to view: No

In this rapid review, the authors searched for research into risk factors for the progression of COVID-19 disease. They did not limit by language of publication and did their search on 20 March 2020. They identified a total of 13 studies (3027 patients).

Other reviews of this topic:

Citation: Pranata R, Permana H, Huang I, et al. *The use of renin angiotensin system inhibitor on mortality in patients with coronavirus disease 2019 (COVID-19): A systematic review and meta-analysis*. Diabetes & Metabolic Syndrome: Clinical Research & Reviews. 2020;14(5):983-90.

Citation: Zaki N, Alashwal H, Ibrahim S. *Association of hypertension, diabetes, stroke, cancer, kidney disease, and high-cholesterol with COVID-19 disease severity and fatality: a systematic review*. Diabetes & Metabolic Syndrome: Clinical Research & Reviews. 2020 Sep 1;14(5):1133-42.

[Rapid, point-of-care antigen and molecular-based tests for SARS-CoV-2 infection \(search on 25 May 2020\)](#)

Citation: Dinnes J, Deeks JJ, Adriano A, et al. *Rapid, point-of-care antigen and molecular-based tests for diagnosis of SARS-CoV-2 infection*. Cochrane Database of Systematic Reviews. 2020;(8):CD013705.

What is this? Rapid, point-of-care tests are being used to identify patients infected with SARS-CoV-2, the virus that causes COVID-19.

In this Cochrane rapid review, the authors searched for studies of the accuracy of point-of-care antigen and molecular-based tests for diagnosing patients with SARS-CoV-2 in the community. They did not restrict their searches by language of publication and did the search on 25 May 2020. They included 22 publications based on 18 study cohorts, with a total of 3198 unique samples.

What was found: At the time of this review, the included studies had assessed eight commercial tests (four antigen and four molecular) and one in-house antigen test.

At the time of this review, the included studies showed that the sensitivity of antigen point-of-care tests varied greatly (0 to 94%) with an average sensitivity of 56.2% and average specificity of 99.5%.

At the time of this review, the included studies showed that rapid molecular assays as point-of-care testing had a sensitivity of 95.2% and specificity of 98.9%. The positive predictive value of rapid molecular assays was 90% and the negative predictive value was 99%.

At the time of this review, the pooled results of individual tests for ID NOW (Abbott Laboratories) and Xpert Xpress (Cepheid Inc) showed that the sensitivity for Xpert Xpress assay was 22.6% higher than ID NOW and the specificity of Xpert Xpress was marginally lower than ID NOW.

Dynamed - [COVID-19 \(Novel Coronavirus\)](#)

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convalescent plasma may not reduce progression to severe disease or all-cause mortality at 28 days, but may improve shortness of breath and fatigue at 7 days in adults hospitalized with moderate COVID-19 in India (BMJ 2020 Oct 22)

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messenger RNA vaccine encoding SARS-CoV-2 full spike length reported to have similar immune response and favorable safety profile compared to vaccine encoding receptor-binding domain (N Engl J Med 2020 Oct 14 early online)

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ivermectin may decrease all-cause mortality in adults hospitalized with confirmed COVID-19 (Chest 2020 Oct 13 early online)

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tocilizumab may not reduce risk of composite of mechanical ventilation or death in moderately ill adults hospitalized with COVID-19 (N Engl J Med 2020 Oct 21 early online)

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convalescent plasma transfusion might not reduce mortality in patients with moderate-to-severe COVID-19; 73 randomized trials evaluating convalescent plasma or hyperimmune immunoglobulin are ongoing (Cochrane Database Syst Rev 2020 Oct 12)

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National Institutes of Health (NIH) guideline on treatment of COVID-19 recommendations for diagnosis of influenza and COVID-19 when influenza viruses and SARS-CoV-2 are cocirculating (NIH 2020 Oct 22)

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NIH COVID-19 Treatment Guideline recommendations for treatment and prevention of influenza when influenza viruses and SARS-CoV-2 are cocirculating (NIH Oct 22)

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30 OCT 2020

about 20%-30% of patients with SARS-CoV-2 infection may be asymptomatic, and risk of transmission may not be lower after contact with asymptomatic patients than with symptomatic patients (PLoS Med 2020 Sep 22)

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28 OCT 2020

43,341,451 confirmed cases of COVID-19 including 1,157,509 deaths worldwide reported by World Health Organization (WHO) as of October 25, 2020 (WHO Weekly Epidemiological Update 2020 Oct 27)

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26 OCT 2020

FDA reissues EUA for emergency use of remdesivir in treatment of suspected or laboratory-confirmed COVID-19 to include hospitalized pediatric patients < 12 years old weighing \geq 3.5 kg or pediatric patients weighing 3.5 kg to < 40 kg (FDA EUA 2020 Oct 22)

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26 OCT 2020

remdesivir (Veklury) FDA approved for treatment of COVID-19 in patients \geq 12 years old weighing \geq 40 kg requiring hospitalization (FDA Press Release 2020 Oct 22)

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26 OCT 2020

convalescent plasma reported to resolve symptoms in adults with B-cell immunodeficiency and prolonged COVID-19 symptoms (Blood 2020 Sep 21 early online)

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22 OCT 2020

messenger RNA vaccine encoding stabilized prefusion SARS-CoV-2 spike protein (mRNA-1273) reported to illicit neutralizing antibody response in all adults, but with high rate of mild-to-moderate adverse events (N Engl J Med 2020 Sep 29 early online)

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22 OCT 2020

COR+12 score might help predict risk of in-hospital death in adults admitted to hospital with COVID-19 (J Allergy Clin Immunol 2020 Oct)

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in adults with moderate COVID-19, favipiravir may increase rate of SARS-CoV-2 clearance by day 5 (Clin Infect Dis 2020 Aug 9 early online)

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21 OCT 2020

neurologic manifestations common in patients hospitalized with COVID-19 in United States (Ann Clin Transl Neurol 2020 Oct 5 early online)

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immunofluorescent antibody (IFA) test may have high sensitivity and specificity for COVID-19 (Open Forum Infect Dis 2020 Sep)

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19 OCT 2020

nasopharyngeal and throat swab samples for rRT-PCR may have higher sensitivity for SARS-CoV-2 infection than mid-turbinate and saliva samples (Open Forum Infect Dis 2020 Sep)

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conversion from negative to positive RT-PCR results for SARS-CoV-2 infection appears very rare in inpatients and outpatients in low-prevalence areas (Open Forum Infect Dis 2020 Sep)

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16 OCT 2020

pre-exposure prophylactic hydroxychloroquine may not prevent SARS-CoV-2 infection in hospital-based healthcare providers caring for patients with COVID-19 (JAMA Intern Med 2020 Sep 30)

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16 OCT 2020

in-hospital cardiac arrest reported in 14% of adults admitted to ICU with COVID-19 (BMJ 2020 Sep 30)

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Useful Links

[BMJ – latest news and resources for COVID-19](#)

[Cochrane Library Coronavirus \(COVID-19\): evidence relevant to critical care](#)

Elsevier - [Novel Coronavirus Information Center – Elsevier](#)

[European Centre for Disease Prevention and Control](#)

[GOV.UK](#)

[Health protection Scotland](#)

[New England Journal of Medicine](#)

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