DSEN ABSTRACT
Effectiveness and safety of treatments for COVID-19 and other coronaviruses: A rapid scoping review

Summary

- A comprehensive literature search of electronic databases and grey literature sources combined with references leveraged from a prior review results in 37 studies and 61 trial registrations examining pharmacological treatments for COVID-19, SARS, or MERs. The included studies covered a broad range of interventions; however, few studies were able to produce statistically significant results making identification of any promising treatment candidates difficult. The trial registrations also cover a broad range of interventions and seem to indicate particular clinical interest in the use of antivirals, antimalarials, and monoclonal antibodies combined with other supportive therapies in the treatment of COVID19.

Key messages

- Currently there is no clear established pharmacological treatment protocol for COVID-19. Inconclusive research from treatment studies in SARS and MERS also raise the question of whether any existing pharmaceutical products can successfully be repurposed. A lack of robust statistically significant results in the current body of evidence prevents identification of any promising treatment avenues to focus future primary research. However, future synthesis research in this field may benefit by focusing on comparative effectiveness and safety of antiviral or antimalarial treatments.

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What is the issue?

- Research on interventions for COVID-19 is being published at an unprecedented rate, a comprehensive overview of currently available evidence is needed to support health care practitioners and policymakers

What was the aim of the study?

- To identify pharmaceutical interventions for COVID-19, SARS, or MERS that have been evaluated or are being evaluated in human studies

How was the study conducted?

- MEDLINE, EMBASE, the Cochrane Library, and biorxiv.org/medrxiv.org databases, and relevant grey literature sites (e.g. clinicaltrials.gov) were searched from inception to May 7, 2020 using a combination of manual and automated search and screening procedures
- A supervised machine learning tool was used to fetch relevant items from electronic databases and grey literature sites and then rank citations for relevance to be passed to fulltext screening; single reviewers with an independent verifier screened citations and full-text articles and completed data charting

What did the study find?

- A total of 138 full-text articles and 93 trial registrations were screened for relevance resulting in 10 controlled trials, 27 cohort studies, and 61 trial registrations included in the review
- 7 trials and 13 cohort studies included patients with COVID-19, 2 trials and 9 cohort studies included patients with SARS, and 1 trial and 5 cohort studies included patients with MERS
- Interventions used in the trials and cohort studies included antibiotics (n=4), antimalarials (n=11), antivirals (n=25), convalescent plasma (n=1), corticosteroids (n=7), immunoglobulins (n=1), interferons (n=2), and monoclonal antibodies (n=1)
- Few treatments had statistically significant results:
  - umifenovir combined with lopinavir/ritonavir improved pneumonia symptoms compared to control in one trial of COVID-19 patients
  - Chloroquine decreased risk of death compared to control in one study but increased risk of death in two other studies of COVID-19 patients
  - Meplazumab improved recovery rate compared to control in one trial of COVID-19 patients
  - Methylprednisone was found to decrease risk of death compared to control in one study of SARS patients
  - Ribavirin and corticorsteroids were both found to increase risk of death in two studies of MERS patients
  - One trial of chemprophylaxis for MERS exposure found ribavirin plus lopinavir/ritonavir successfully prevented infection
- Ongoing trials of COVID-19 were identified from clinicaltrials.gov, the WHO clinical trials register, and protocol publications, trials are estimated to be completed between March 2020 and December 2023
- 47 different interventions will be examined across the trial registrations including antibiotics, antimalarials, antivirals, corticosteroids, interferons, monoclonal antibodies, nitric oxide, angiotensin receptor blockers, anti-cancer drugs, immunoglobulin, stem cells, and convalescent plasma

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KNOWLEDGE TRANSLATION PROGRAM