

## Evidence check

23 March 2020

Rapid evidence checks are based on a simplified review method and may not be entirely exhaustive, but aim to provide a balanced assessment of what is already known about a specific problem or issue. This brief has not been peer-reviewed and should not be a substitute for individual clinical judgement, nor is it an endorsed position of NSW Health.

## Drug therapies and COVID-19

### Rapid review question

What drug therapies are being used to combat COVID-19 and therefore which drugs LHDs could stock up on?

What clinical trials are underway for COVID-19 treatment?

### In brief

- A systematic review released 26 February 2020 identified 23 potential and ongoing therapeutics trials (Pang et al, 2020).
- Some recent advice published by Smith and Prosser, 2020 outlines treatment recommendations from the China International Exchange and Promotive Association for Medical and Health Care (CPAM) and a group of Korean physicians
- On 23 March, the WHO announced a megatrial 'SOLIDARITY' to test four treatments: Remdesivir, Chloroquine and hydroxychloroquine; Ritonavir/lopinavir; and Ritonavir/lopinavir and interferon-beta.
- Other potential future treatment options include colchicine (with a clinical trial underway in Montreal) and sofosbuvir in combination with ribavirin
- Recent advice from the NHS outlines essential pharmaceuticals required to care for COVID-19 patients.

### Methods

Google was searched on 23 March 2020 using terms [drug therapies AND COVID-19]. PubMed was searched for systematic reviews and there was one hit.

### Results

- In February 2020, a systematic review identified 23 potential and ongoing therapeutics trials (lopinavir-ritonavir; teicoplanin; remdesivir; Vir (monoclonal antibody); regeneron monoclonal antibody); ritonavir +ASC09; ) galidesivir; 'molecules that inhibit 2 coronavirus enzymes'; 'xue bi jing'; adjunctive steroids; Umefinovir; Darunavir; oral liquid Chinese medicine; chloroquine phosphate; Hydroxychloroquine; abidol hydrochloride, oseltamivir, lopinavir / ritonavir; lopinavir plus ritonavir and Arbidol; Remdesivir; darunavir and Cobicstat; mesenchymal stem cell; traditional Chinese medicine; methylprednisolone (Pang et al, 2020)

- Smith and Prosser (2020) state that in the absence of an established treatment regimen, the China International Exchange and Promotive Association for Medical and Health Care (CPAM) issued a novel 2019 coronavirus disease (COVID-19) guideline in February 2020
- For direct antiviral treatment of SARS-CoV-2, CPAM recommends use of lopinavir; ritonavir [2 capsule (dose undefined) by mouth twice daily] in combination with nebulized alfa-interferon (5 million units in Sterile Water for Injection inhaled twice daily). CPAM has based this recommendation on weak evidence from retrospective cohort, historically controlled studies, case reports, and case series that suggest clinical benefit of lopinavir; ritonavir in the treatment of other coronavirus infection [i.e., 2002 SARS-CoV and 2012 Middle East respiratory syndrome coronavirus (MERS-CoV)].
- According to the Korean physicians, antiviral medications are not recommended for use in young, healthy patients with mild symptoms and no underlying comorbid conditions. However, treatment with lopinavir 400 mg; ritonavir 100 mg (2 tablets by mouth twice daily) or chloroquine (500 mg by mouth twice daily) should be considered for use in older patients or patients with underlying conditions and serious symptoms. If chloroquine is unavailable, they recommend considering use of hydroxychloroquine (400 mg by mouth once daily). Use of ribavirin and interferon are not recommended as first-line treatments because of the risk for side effects; however, use of these medications may be considered if treatment with lopinavir; ritonavir, chloroquine, or hydroxychloroquine are ineffective.
- Of note, the WHO currently recommends against routine use of corticosteroids in patients with SARS-CoV-2, as available data suggest corticosteroids are associated with no survival benefit and possible harm. CPAM states that use of corticosteroids is controversial and should therefore be used with caution (Smith and Prosser and, 2020)
- The NHS has published on 20 March a list of crucial medicines protected for coronavirus (COVID-19) patients <https://www.gov.uk/government/news/crucial-medicines-protected-for-coronavirus-covid-19-patients>

## References

Smith and Prosser, COVID-19 Drug Therapy – Potential Options, pre publication, 2020

[https://www.elsevier.com/\\_data/assets/pdf\\_file/0007/988648/COVID-19-Drug-Therapy\\_Mar-2020.pdf](https://www.elsevier.com/_data/assets/pdf_file/0007/988648/COVID-19-Drug-Therapy_Mar-2020.pdf)

UK Government

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/874142/Medicines\\_that\\_cannot\\_be\\_parallel\\_exported\\_from\\_the\\_UK\\_20\\_March.csv/preview](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/874142/Medicines_that_cannot_be_parallel_exported_from_the_UK_20_March.csv/preview)

Pang et al Potential Rapid Diagnostics, Vaccine and Therapeutics for 2019 Novel Coronavirus (2019-nCoV): A Systematic Review Journal of Clinical Medicine. 2020; 9 (3) <https://www.mdpi.com/2077-0383/9/3/623>