Effectiveness of drugs being developed and tried to treat COVID-19 patients

Clinical/Observational Studies

* Lopinavir and Ritonavir seem to be the standard antiviral agent against COVID-19
* Favipriavir was shown to be more effective than Lopinavir/Ritonavir control arms. In a separate study, it was also shown to be more effective than arbidol control arm
* Hydroxychloroquine was shown to be effective for recoverying of pneumonia effects of COVID-19
* Azithromycin added to Hydroxychloroquine was shown to be significantly more efficient for virus elimination, possibly because azithromycin was shown to have similar effects as hydroxychloroquine
* Danoprevir boosted by ritonavir was shown to be safe and well tolerated in all patients
* Early and short doses of a corticosteroid called methylprednisolone was shown to be effective in treatment COVID-19

Notes based on Review Articles

* There have been a number of reports stating that non-steroidal anti-inflammatory drugs (NSAIDs) and corticosteroids may exacerbate symptoms in COVID-19 patients. Proper use of low-dose corticosteroids may bring survival advantages for critically ill patients, but this treatment should be strictly performed.
* Although SARS-CoV-2 replication is not entirely suppressed by interferons, viral titers are decreased by several orders of magnitude. It may be useful in the early stages of infection

Capabilities to discover a therapeutic (not vaccine) for the disease, and clinical effectiveness studies to discover therapeutics, to include antiviral agents.

In Vitro Studies

* Nelfinavir acts as an HIV Protease Inibitor
* Azithromycin and Ciprofloxacin have chloroquine effects and may act as alternatives to hydroxychloroquine/chloroquine
* Sofosbuvir, Tenofovir, and Alovudine are polymerases that block Sars-Cov-2 incorporation via RdRp
* Tenofovir and Emtricitabine terminates SARS-CoV-2 RdRp catalyzed reaction and can act as preventative treatments (PreP)
* Terfiflunomide and Leflunomide were shown to have solid antiviral reduction compared to favipiravir, a drug that is already undegoing clinical trials
* Darunavir was shown to have no activity against SARS-COV-2 during In Vitro studies

Simulations and Modeling

* Atazanavir, Efavirenz, Dolutegravir, and Saquinavir were shown to be potential candidates of treating COVID-19 based on simulations and modeling

Notes based on Review Articles

* Niclosamide was able to inhibit SARS-CoV replication and totally abolished viral antigen synthesis at a concentration of 1.56 μM
* Tocilizumab is a blocker of IL-6R, which can effectively block IL-6 signal transduction pathway