

Evidence Update on COVID-19

This is not a clinical guideline or SOP. This is a summary of the latest evidence available internationally on the management, treatment and science underlying COVID-19 disease.

Clinical characteristics

- o Lymphopenia was indicated by multiple studies as the main observation in COVID19+ patients, even in absence of fever and cough. Useful as diagnostic marker [Henry Guan Qu](#)
- o Lymphocyte count is negatively associated with increased disease severity. Death occurred in those with lowest lymphocyte counts in ICU patients [Henry](#)
- o 1100 patients - Lymphopenia on admission (89% patients), Fever (44%), Cough (68%) [Guan](#)
- o 249 patients - Fever 95% patients for 10 days. 31 days for those in ICU. [Chen](#)
- o 204 patients - Anorexia (84%), diarrhea (30%), vomiting (1%) [Pan](#)
- o In children admitted to ICU, only 3.5% had lymphopenia, 40% tachycardia, 41% pneumonia, all had preexisting conditions [Lu](#)
- o Neurological symptoms include nausea and headache [Li](#)
- o Dyspnoea (shortness of breath) is main symptom in most studies (almost all patients) [Juan](#)
- o Take away - lots of atypical presentations (GI, neuro - most have respiratory symptoms)

Incubation period

- Median incubation period 5 days, with all symptoms appearing by 11.5 days in 97.5% positive patients - 14 days quarantine recommended (**based on severe cases only, no asymptomatic cases included**) [Lauer](#)
- Duration of onset of symptoms to hospitalisation 4(2-7) days.
- IgM And IgA antibodies against Cov2 detectable in blood after 5 days post symptom onset, and IgG after 14 days (75-95% positive rate) [Guo](#)

Virus

- o Entry to the host cell depends on the ACE2 receptor.
- o In vitro, entry can be blocked with camostat meylate (TMPRSS2), an ACE2 inhibitor (**potential treatment, but all work in vitro**) [Hoffmann](#)
- o No difference in nasal swab viral load symptomatic vs. asymptomatic (Italy 5830 patients) [Tirani](#)

Central nervous system

- Central nervous tissue is susceptible to infection - murine data shows intranasal inoculation with SARS-CoV causes neurological symptoms including cardiorespiratory circuit dysfunction. In humans this may contribute to respiratory dysfunction [Baig](#)
- Spreads transsynaptically - brains of humans and mice with SARS-CoV have virus in the brain, and heavy burden in the brain stem [Li](#) - potential similarities in COVID-19

Therapy

Antiviral

- o No antiviral therapy has been proven to work in humans (RCTs ongoing in China)
- o Lopinavir-Ritonavir trial negative in terms of mortality, improvement and viral load [Cao](#)

Chloroquine – interferes with ACE2 (possible COVID-receptor)

- *In vitro* study showed choloquine and remdesivir effective at inhibiting viral infection when co-incubated with virus at the same time (**not clinically relevant**) [\(Wang\)](#) - similar in [SARS](#)
- Failed in [mice](#)
- In humans hydroxychloroquine reduced viral carriage, in synergy with azithromycin (**22 patients and removed ICU patients from analysis**) [Gautret](#)
- [ICTRP](#) running an RCT (Data to be published)
- China recommends [500mg twice per day](#) for 10 days in all cases of COVID-19 with pneumonia, **but the data behind this is not published and the article is in Chinese**