



CoVid 19: summary of knowledge and reliable information sources, March 26th 2020

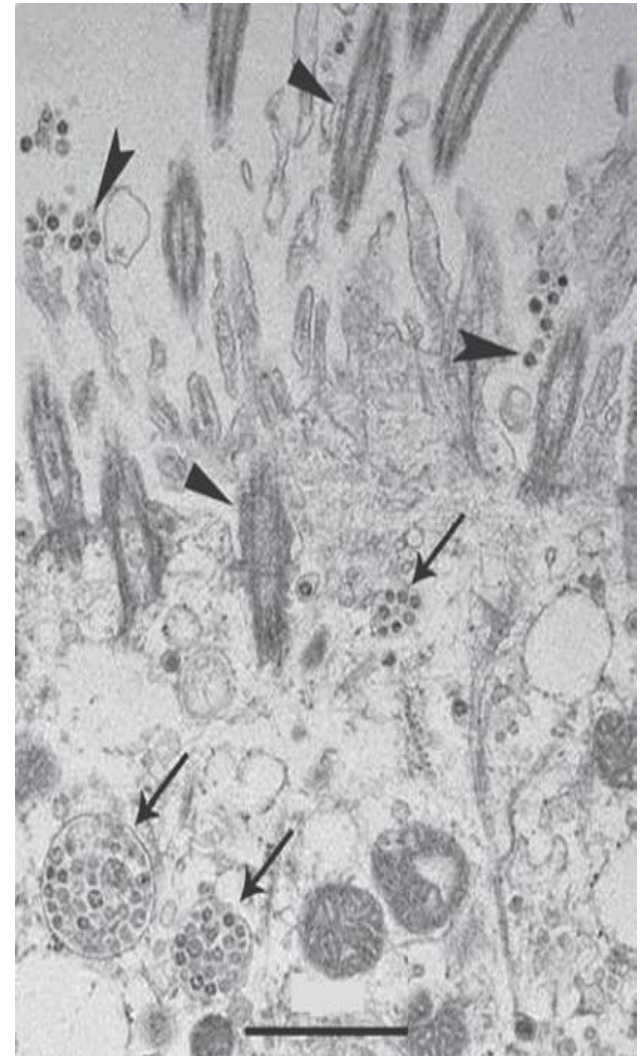
Jean Paul Stahl

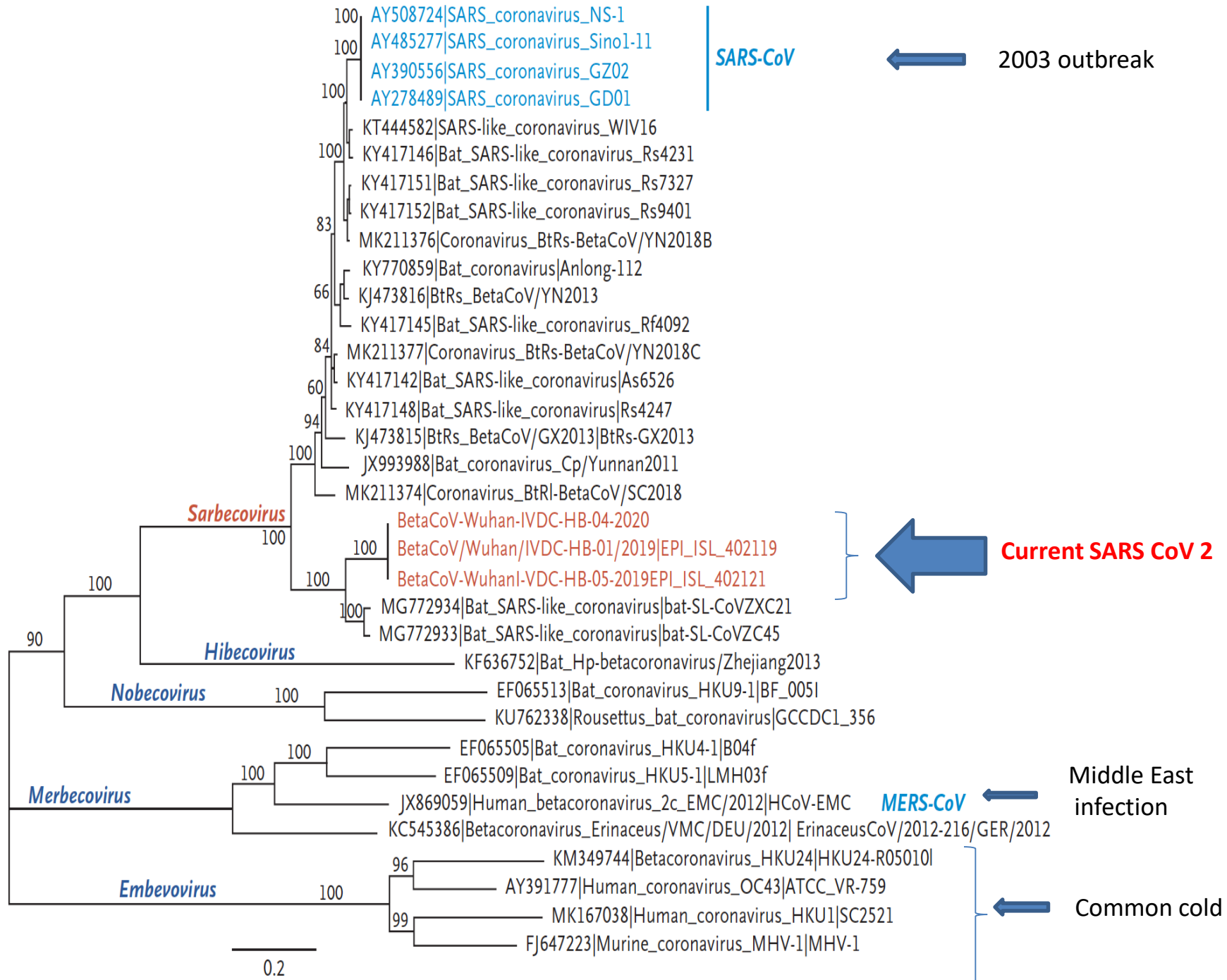
UEMS Infectious Diseases Section

The virus: SARS-CoV 2

- December 2019, cluster of patients presenting with pneumonia in Wuhan (China)
- Betacoronavirus identified in samples obtained from respiratory secretions and isolated on cell cultures
- New coronavirus, named SARS-CoV2, subgenus Sarbecovirus, subfamily Orthocoronavirinae.
- Differs from MERS-CoV and SARS-CoV, and from viruses responsible for common cold (229E, OC43, NL63, et HKU1)
- SARS-CoV2 is the 7th member of coronavirus family able to infect humans

First described case





« Real time » distribution of cases

[https://gisanddata.maps.arcgis.com/
apps/opsdashboard/index.html#/bda
7594740fd40299423467b48e9ecf6](https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6)

Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Total Confirmed
436 159

Confirmed Cases by Country/Region/Sovereignty

81 661	China
69 176	Italy
55 238	US
47 610	Spain
34 009	Germany
27 017	Iran
22 637	France
10 456	Switzerland
9 137	Korea, South
8 167	United Kingdom
5 585	Netherlands
5 499	Austria
4 937	Belgium
2 995	Portugal
2 902	Norway
2 792	Canada
2 364	Australia
2 318	Sweden



Total Deaths

19 648

6 820	deaths	Italy
3 434	deaths	Spain
3 163	deaths	Hubei China
2 077	deaths	Iran
1 100	deaths	France
422	deaths	United Kingdom
276	deaths	Netherlands
192	deaths	New York City New York US
178	deaths	Belgium
172	deaths	

Total Recovered

111 847

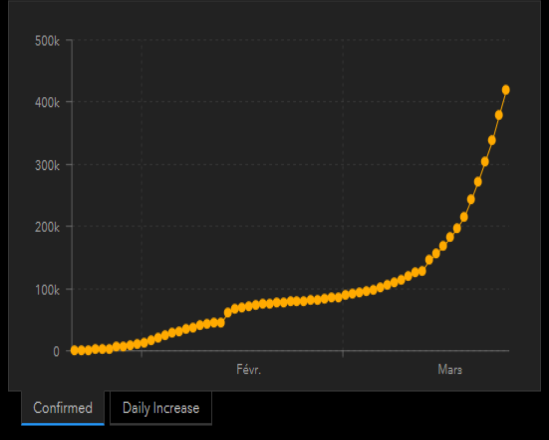
60 811	recovered	Hubei China
9 625	recovered	Iran
8 326	recovered	Italy
5 367	recovered	Spain
3 730	recovered	Korea, South
3 532	recovered	Germany
3 281	recovered	France
1 336	recovered	Guangdong China
1 250	recovered	Henan China
1 221	recovered	

Cumulative Confirmed Cases | Active Cases

172 countries/regions

Lancet Inf Dis Article: [Here](#). Mobile Version: [Here](#). Visualization: JHU CSSE. Automation Support: [Esri Living Atlas team](#) and [JHU Data Sources: WHO, ECDC, NHC, DXY, 1point3acres, Worldometers.info, BNO](#), state and national government health departments and data in public reports. [Read more about this blog.](#)

Confirmed cases include presumptive positive cases.
Recovered cases outside China are estimates based on local media reports, and may be substantially lower than the true number.
Active cases = total confirmed - total recovered - total deaths



Viral transmission

- Initially probably a zoonosis: bats, pangolin ? but zoonotic transmission is no longer significant
- Human to human transmission by droplets and smears
- Hand carriage
- Incubation: maximum 14 days, usually 3 to 7
- R_0 2 to 3, *in the absence of control measures*
- Intergenerational interval : about 5 days *in the absence of control measures*
- Transmission can occur 1 to 2 days before onset

It has to be updated according increasing knowledge during the outbreak

Clinical presentation: summary

- Agueusia and/or anosmia are frequent at the early stage, before respiratory symptoms and are very evocative
- Infrequent diarrhea
- Upper respiratory tract « viral » symptoms : non specific
- Pneumonia +++
- Possible worsening of respiratory symptoms on day 7 to 10
- Severity:
 - direct link with respiratory failure (Acute Respiratory Distress Syndrom)
 - More frequent in male patients /elderlies / patients with underlying conditions
- Pediatric cases are infrequent

Viral load and clinical presentation

- **Mild, moderate**

- ✓ Important viral inoculum since the onset, for 6 to 7 days and then it decreases. Nasal sampling is the standard
- ✓ Possible respiratory symptoms (LRT) for 2 to 3 days. Virus can be isolated in LRT samples in this case

- **Initial mild or moderate and complication**

- ✓ Same evolution of the viral load, but LRT symptoms are more severe and images on lung CT scan. At this stage, nasal sampling is possibly negative

- **Initial complicated presentation**

- ✓ High viral load in nasal and LRT samples

Lung images

Sana Saleh et al. Coronavirus disease 2019 (CoVid 19): a systematic review of imaging findings in 919 patients. Am. J. Roentgenol. 1-7. 10.2214/AJR.20.23034

Initial typical images on CT scan:

- bilateral multilobar ground-glass opacification
- peripheral or posterior distribution, in the lower lobes
- less frequently within the right middle lobe.

Images at a later stage:

- increase in the number and size of ground-glass opacification
- progressive transformation of ground-glass opacification into multifocal consolidative opacities,

Treatment

- Supportive care, but no steroid nor non-steroid anti-inflammatory drugs
- Antiviral drugs
 - ✓ Remdesivir: previously used in MERS Cov and Ebola infections. Trials ongoing
 - ✓ Lopinavir/Ritonavir in severe cases: recent publication reporting failure in this indication.
 - ✓ Interferons, monoclonal antibodies: ongoing trials

Hydroxychloroquine

<https://doi.org/10.1016/j.medmal.2020.03.004>

- Known to have *in vitro* antiviral activity
- A trial for the treatment of Chikungunya was stopped:
 - severe cardiac events
 - no clinical efficacy in the chloroquine arm.
- Used in dengue: no benefit vs placebo.

It is way too early to recommend it as a treatment

- Preliminary results only, study with important limitations
- Ongoing trial

Conclusion about drugs, on March 26th

So far, no specific drug is recommended as an antiviral treatment.

Trials are ongoing.

Current recommendations for IPC and outbreak control

- General population
 - Mask for infected patients
 - Hand washing as frequently as possible
 - Lock-down in a significant number of countries
 - Social distancing for those essential to the functioning of countries or when lock-down is not possible
- Health care workers
 - Surgical masks in hospital
 - FFP2 masks during care giving
 - Cancel/postpone non-essential healthcare activities
 - Keep in mind other life-threatening infections/diseases can still occur

Reliable sources

➤ Public Health Agencies:

- ECDC : <https://www.ecdc.europa.eu/en/coronavirus>
- WHO <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- CDC <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
- Reacting <https://reacting.inserm.fr/literature-review/>. Daily updated bibliography

➤ Journals with free access to CoViD 19 LITERATURE:

- JAMA: <https://jamanetwork.com/journals/jama/pages/coronavirus-alert>. Papers for a lot of specialists, not only Infectious Diseases
- New England Journal of Medicine: https://www.nejm.org/coronavirus?query=CON&cid=DM88964_Catalyst_Non_Subscribe_r&bid=172184965
- Lancet : Covid Resource center <https://www.thelancet.com/coronavirus>

➤ Scientific societies:

- All national ID societies provide recommendations in local language
- French Infectious Diseases Society, for French speaking physicians, collects all official texts in french: <https://www.infectiologie.com/fr/>

Take home points :

- Be prudent
- Take care of yourself, your patients and your loved ones