Journal and date	Title	Authors and link	Main question	Key facts
NEJM 19MAR2020	**A trial of liponavir-ritonavir in adults hospitalized with severe Covid-19**	Cao B et al, China https://www.nejm.org/doi/pdf/10.1056/NEJMoa2001282?articleTools=true	Safety and efficacy of oral lopinavir-ritonavir for SARS-CoV2 infection in adults ?	Randomized, controlled trial, open-label trial → **199 patients included**: 99 received lopinavir-ritonavir and 100 standard care alone: • **Lopinavir-ritonavir was not associated with clinical improvement or mortality:** median time to clinical improvement 16 days vs 16 days, HR = 1.31 [0.95 – 1.85] Others outcomes: • 28-days mortality lower in the lopinavir-ritonavir group: 19.2% vs 25%, difference -5.8 % [-17.3 – 5.7] • Detectable viral RNA for SARS-CoV2 was similar between two groups: 40.7 % of the patients of lopinavir-ritonavir group at the end of trial (28d) • Serious adverse events: 19 in the lopinavir-ritonavir group (4 serious gastrointestinal adverse events related to the trial medication) and 32 in the standard care alone. • No difference on duration of oxygen therapy and duration hospitalization. • Post hoc finding that early initiation of lopinavir-ritonavir might accelerate clinical recovery and reduced mortality Overall mortality at 22.1% **No benefit was observed with lopinavir-ritonavir treatment**
NEJM 19 mars 2020	**SARS-CoV2 Infection in children**	Lu X. et al, China https://www.nejm.org/doi/pdf/10.1056/NEJMc2005073?articleTools=true	Evaluation of children infected with SARS-CoV2 and treated in Wuhan Children's Hospital	On the 1391 children tested at Wuhan Children's Hospital, **171 (12.3%) were positive for SARS-CoV2 infection.** Median age: **6.7 years** - Male: 60.8 % Fever: **41.5 %** - Cough: 48.5 % Pneumonia: 64.9 % **3 patients** (with coexisting conditions) **require intensive care and 1 death** **Most children appear to be mild symptomatic.**
The Lancet 17MAR2020	**Prevention of SARS-CoV-2 infection in patients with decompensated cirrhosis**	Xiao et al., China https://www.thelancet.com/journals/langas/article/PIIS2468-1253(20)30080-7/fulltext	How to prevent nosocomial infection to patients with decompensated cirrhosis ?	<u>Previously known:</u> Patients with decompensated cirrhosis have a higher risk of, and mortality from, infection. -> 111 patients with decompensated cirrhosis (were included) -> **New precautionary procedures** were implemented **(see paper)** -> Incidence of COVID19 was lower than in other groups. The simple approach (**see paper**) could be an effective means of preventing COVID-19 in patients with decompensated cirrhosis.
J Inf Dis 17MAR2020	**Clinical outcome of 55 asymptomatic cases at the time of hospital admission infected with SARS-Coronavirus-2 in Shenzhen, China.**	Wang et al., China https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiaa119/5807958	Asymptomatic carriers: who are they ?	**55 asymptomatic carriers** <u>Conclusions:</u> -> Asymptomatic carriers occurred **more often in middle aged** people who had **close contact** with infected family members -> Majority of the cases **developed to be mild and ordinary COVID-19** during hospital
Am J Transplant. 17MAR2020	**Successful recovery of COVID-19 pneumonia in a renal transplant recipient with long-term immunosuppression.**	Zhu et al., China https://onlinelibrary.wiley.com/doi/abs/10.1111/ajt.15869	Could transplant recipient be at higher risk ?	**52-year-old** man who received **kidney transplantation 12 years ago** -> Clinical characteristics (symptoms, laboratory examinations, and chest CT) were **similar to those of non-transplanted** COVID-19 patients -> Following a treatment regimen: reduced immunosuppressant use and low dose methylprednisolone-based therapy **Effectively treated case has reference value for the future treatment of other transplant patients with COVID-19 pneumonia. <u>Analysis of additional cases is necessary to determine if this remains true.</u>**

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J Med Virol 17MAR2020	**Platelet-to-lymphocyte ratio is associated with prognosis in patients with Corona Virus Disease-19.**	Qu et al., China https://onlinelibrary.wiley.com/doi/abs/10.1002/jmv.25767	PLR and prognosis ?	-Retrospective analysis of **30 hospitalized patients** -> Patients with platelet peaks during treatment: longer hospitalization. -> Patients with platelet peaks were **older** -> **Higher PLT** (platelet to lymphocyte ratio): **longer hospitalisation**. It may be related to **cytokine storm**.
The NEJM 17MAR2020	**Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1**	Doremalen et al., USA https://www.nejm.org/doi/pdf/10.1056/NEJMc2004973?articleTools=true	Viability of SARS-CoV 2 ?	-> Stability of **SARS-CoV-2** was similar to that of **SARS-CoV-1** under the experimental circumstances tested. -> Detectable in **aerosols** for up to **three hours**, up to **four hours** on **copper**, up to **24 hours** on **cardboard** and up to **two to three days** on plastic and stainless steel. **Aerosol and fomite transmission of SARS-CoV-2 is plausible**
Arch Pathol Lab Med. 17MAR2020	**An Analysis of 38 Pregnant Women with COVID-19, Their Newborn Infants, and Maternal-Fetal Transmission of SARS-CoV-2: Maternal Coronavirus Infections and Pregnancy Outcomes**	Schwartz et al., USA https://www.archivesofpathology.org/doi/pdf/10.5858/arpa.2020-0901-SA	Maternal- Fetal Transmission ?	Analyzing literature describing 38 pregnant women with COVID-19 and their newborns in China -> Unlike coronavirus infections of pregnant women caused by SARS and MERS, COVID-19 did not lead to maternal deaths -> Similar to pregnancies with SARS and MERS: no confirmed cases of intrauterine transmission of SARS-CoV-2 **There is no evidence that SARS-CoV-2 undergoes intrauterine or transplacental transmission from infected pregnant women to their fetuses.**
The Lancet 17MAR2020	**Prisons and custodial settings are part of a comprehensive response to COVID-19**	Kinnet et al., Australia https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30058-X/fulltext	PRISONS	Prisons are epicentres for infectious diseases: - higher background prevalence of infection - higher levels of risk factors for infection - unavoidable close contact in often overcrowded, poorly ventilated, and unsanitary facilities, - poor access to health-care services relative to that in community settings **-> The public health importance of prison responses to influenza outbreaks has been recognised in the USA, where the Centers for Disease Control and Prevention have developed a checklist for pandemic influenza preparedness in correctional settings. WHO has also issued prison-specific guidance for responding to COVID-19.**
Nat Med 16MAR2020	**Breadth of concomitant immune responses prior to patient recovery: a case report of non-severe COVID-19**	Thevarajan et al., Australia https://www.nature.com/articles/s41591-020-0819-2	What is the immuno profile of a patient with coronavirus ?	-> Kinetics of immune responses in relation to clinical and virological features of a patient with mild-to-moderate coronavirus disease 2019 (COVID-19) that required hospitalization. **The emergence and rapid increase in activated CD38+HLA-DR+ T cells, especially CD8+ T cells, at days 7–9 preceded the resolution of symptoms:** -> ASCs appeared in the blood at the time of viral clearance (day 7; 1.48%) and peaked on day 8 (6.91%). -> Emergence of cTFH cells in blood at day 7 (1.98%), increasing on day 8 (3.25%) and day 9 (4.46%) -> The frequency of co-expression of CD38 and HLA-DR on CD8+ T cells increased in this patient from day 7 (3.57%) to day 8 (5.32%) and day 9 (11.8%) as well as the frequency of co-expression of CD38 and HLA-DR on CD4+ T cells between day 7 (0.55%) and day 9 (3.33%) although at lower levels than that of CD8+ T cells. -> CD38+HLA-DR+ CD8+ T cells, produced larger amounts of granzymes A and B and perforin (~34–54% higher) than did their parent cells (CD8+or CD4+ populations). -> Interestingly, minimal pro-inflammatory cytokines and chemokines were found in this patient with COVID-19, even at days 7–9.

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SCIENCE 16MAR2020	**Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus(SARS-CoV2).**	Li et al, UK https://science.sciencemag.org/content/early/2020/03/13/science.abb3221.long	Impact of undocumented infection ?	From observations of reported infection within China + mobility data + a networked dynamic metapopulation model and Bayesian inference **-> 86%** of all infections were undocumented (95% CI: [82%–90%]) prior to 23 January 2020 travel restrictions. -> **Undocumented infections** were the infection **source for 79%** of documented cases **It explain the rapid geographic spread of SARS-CoV2 and indicate containment of this virus will be particularly challenging**
The Lancet 16MAR2020	**Preparedness is essential for malaria-endemic regions during the COVID-19 pandemic**	Wang et al., China https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30561-4/fulltext	In malaria endemic regions ?	-> Relevant lessons from the 2014–16 outbreak of Ebola virus disease in west Africa -> Much like Ebola, the early symptoms of COVID-19, including fever, myalgia, and fatigue, might be confused with malaria and lead to challenges in early clinical diagnosis
The Lancet 16MAR2020	**Screening of faecal microbiota transplant donors during the COVID-19 outbreak: suggestions for urgent updates from an international expert panel**	Ianiro et al., Italy https://www.thelancet.com/journals/langas/article/PIIS2468-1253(20)30082-0/fulltext	What about stool banks and faecal microbiota transplant ?	-> Before each donation, physicians should screen for two main items: the presence of typical COVID-19 symptoms -> In endemic countries, the RT-PCR assay should be considered in all donors ->Stool banks should retrospectively check the health status of the donor before using frozen faeces, according to local epidemiology, to avoid further potential spreading of SARS-CoV-2
Euro Surv 12MAR2020	**Retrospective analysis of the possibility of predicting the COVID-19 outbreak from Internet searches and social media data, China, 2020**	Li et al., China https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.10.2000199	How do predict development of outbreak early ?	**To predict the development of this outbreak as early and as reliably as possible** -> Data obtained from Google Trends, Baidu Index and Sina Weibo Index on searches for the keywords 'coronavirus' and 'pneumonia' correlated with the published NHC data on daily incidence of laboratory-confirmed and suspected cases of COVID-19, with the maximum r > 0.89. -> Peak interest for these keywords in Internet search engines and social media data was **10–14 days earlier than the incidence peak of COVID-19 published by the NHC**. -> The lag correlation showed a maximum correlation at 8–12 days for laboratory-confirmed cases and 6–8 days for suspected cases
The Lancet 11MAR2020	**Early dynamics of transmission and control of COVID-19: a mathematical modelling study**	Kucharski et al., UK https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30144-4/fulltext		Calculation the **probability that newly introduced cases might generate outbreaks in other areas.** **->** Estimations: The median daily reproduction number (R_t) in Wuhan **declined from 2·35** (95% CI 1·15–4·77) 1 week before travel restrictions were introduced on Jan 23, 2020, **to 1·05** (0·41–2·39) 1 week after. -> In locations with similar transmission potential to Wuhan in early January, **once there are at least four independently introduced cases**, there is a **more than 50% chance the infection will establish within that population**.
The Lancet 11MAR2020	**Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study.**	Zhou et al., China https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30566-3/fulltext		-> 191 patients: 137 discharged and 54 died 1- Comorbidity: 48%, with hypertension (30%), diabetes (19%), coronary heart disease (8%). 2- Death associated with older age, higher SOFA score, d-dimer greater than 1 µg/mL on admission. 3- Viral shedding: median 20 days in survivors, otherwise until death. Longest viral shedding: 37 days

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JAMA 13MAR2020	**Risk Factors Associated With Acute Respiratory Distress Syndrome and Death in Patients With Coronavirus Disease 2019 Pneumonia in Wuhan, China**	Wu et al., China https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2763184?resultClick=1	What are the risk factors associated to ARDS and death ?	-> **201 patients** included in the study **Risk factors to develop ARDS**: • Older age, neutrophilia, and organ and coagulation dysfunction (eg, higher LDH and D-dimer) • Associated with ARDS but not death: Comorbidities, lymphocyte counts, CD3 and CD4 T-cell counts, AST, prealbumin, creatinine, glucose, low-density lipoprotein, serum ferritin, PT • Although **high fever** was **positively associated** with development of **ARDS**, it was <u>**negatively related to death**</u> • **Higher CD3 and CD4 T-cell counts** might **protect** patients from developing ARDS • **Persistent and gradual increases in lymphocyte responses** might be required for effective immunity against SARS-CoV-2 infection.
The Lancet 11MAR2020	**Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection?**	Fang et al., Switzerland https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30116-8/fulltext	Comorbidities and increased risk of infection	Patients with **cardiac diseases**, **hypertension**, or **diabetes**, who are treated with **ACE2-increasing drugs**, may be at <u>higher risk</u> for severe COVID-19 infection -> They **should be monitored for ACE2-modulating medications**, such as ACE inhibitors or ARBs. -> No evidence to suggest that **antihypertensive calcium channel blockers increased ACE2 expression** or **activity**: these could be a <u>suitable alternative treatment</u> in these patients.
The Lancet 12MAR2020	**Real estimates of mortality following COVID-19 infection**	Baud et al., Switzerland https://www.thelancet.com/action/showPdf?pii=S1473-3099%2820%2930195-X	What are the real numbers of mortality ?	Mortality rate estimates are based on the number of deaths relative to number of confirmed cases of infection -> **not representative of actual death rate.** <u>**Real rates:**</u> - 5·6% for China - 15·2% outside China **Current figures might underestimate the potential threat of COVID-19 in symptomatic patients**
The Lancet 12MAR2020	**SARS-CoV-2 RNA more readily detected in induced sputum than in throat swabs of convalescent COVID-19 patients**	Han et al., China https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30174-2/fulltext	Why using sputum and not throat swab in convalescent patients?	-> 2 cases in **convalescence** -> Both **negative** with throat swab and anal swabs -> **Positive** in **induced sputum** To reduce the risk of disease spread, **viral RNA tests of induced sputum**, <u>not throat swabs</u>, should be assessed as a criterion for releasing COVID-19 patients.
JAMA 11MAR2020	**Detection of SARS-CoV-2 in Different Types of Clinical Specimens**	Wang et al., China https://jamanetwork.com/journals/jama/fullarticle/2762997	Which specimens present with the highest positive rate ? And the lower ?	**-> 1070 specimens collected from 205 patients** **POSITIVITY** by RT-PCR: Bronchoalveolar lavage fluid (**93%**) Sputum (**72%**) Nasal Swabs (**63%**) Fibrobronchoscope brush biopsy (**46%**) Pharyngeal swabs (**32%**) Feces (**29%**) Blood (**1%**) Urine (**0%**)
Sci Rep 11MAR2020	**A high ATP concentration enhances the cooperative translocation of the SARS coronavirus helicase nsP13 in the unwinding of duplex RNA**	Jang et al., Republic of Korea https://www.nature.com/articles/s41598-020-61432-1	Against RNA replication	<u>To know</u>: RNA Helicase **nsP13 is essential** for the viral <u>RNA replication</u> of the **SARS coronavirus** <u>Here:</u> ->RNA helicase nsP13 would have higher binding affinity to RNA than to DNA, at same ATP concentrations. -> The open state of nsP13 binding with a higher affinity to RNA than to DNA, is a considerably energy-consuming reaction ->Unwinding of duplex RNA by nsP13 is a considerably energy-consuming reaction **SARS coronavirus nsP13 may require more ATPs to promote stable helicase translocation necessary for delicate RNA replication.**

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Science 06MAR2020	**The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak.**	Chinazzi et al., USA https://science.sciencemag.org/content/early/2020/03/05/science.aba9757.long	Effect of travel quarantine of Wuhan at national and international scale ?	-> **Global metapopulation disease transmission model** to project the impact of travel limitations on the national and international spread of the epidemic. ->**Travel quarantine of Wuhan** delayed the overall epidemic progression by **only 3 to 5 days** <u>in Mainland China</u> -> More marked effect <u>at the international scale</u>, where case importations were **reduced by nearly 80%** until mid February -> Sustained 90% travel restrictions to and from Mainland China **only modestly affect** the epidemic trajectory **unless combined with a 50% or higher reduction of transmission in the community** **->** Potential uses for the **definition of optimized containment** schemes and **mitigation policies** that includes **the local and international dimension** of the COVID-19 epidemic
Cell 04MAR2020	**SARS-CoV-2 Cell Entry Depends on ACE2 and TMPRSS2 and Is Blocked by a Clinically Proven Protease Inhibitor**	Hoffman et al., Germany https://www.cell.com/cell/fulltext/S0092-8674(20)30229-4?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0092867420302294%3Fshowall%3Dtrue	Key insights into the first step of SARS-CoV-2 infection ?	-> **Priming of S proteins** by host **cell proteases (TMPRSS2)** is **essential for viral entry** into cells. -> **ACE 2 can be blocked** by a clinically proven **inhibitor** of **TMPRSS2** -> **The study suggests that antibody responses raised against SARS-CoV could at least partially protect against SARS- CoV-2 infection**
Science 04MAR2020	**Structural basis for the recognition of the SARS-CoV-2 by full-length human ACE2**	Yan et al., China https://science.sciencemag.org/content/early/2020/03/03/science.abb2762/tab-pdf	What do we learn from the structural basis of ACE2 ?	-> **Cryo-EM structures of human ACE2**, in the presence of a neutral amino acid transporter B0AT1, with or without the receptor binding domain (RBD) of the surface spike glycoprotein (S protein) of SARS-CoV-2 -> **ACE2 may be a homodimer even in the absence of B0AT1** -> **A dimeric ACE2 can accommodate two S protein trimers**, each through a monomer of ACE2 -> Structure-based rational **design of binders with enhanced affinities to either ACE2 or the S protein of the coronaviruses** may facilitate development of **decoy ligands** or **neutralizing antibodies** for suppression of viral infection.
Emerge Inf Dis 09MAR2020	**Detection of Novel Coronavirus by RT-PCR in Stool Specimen from Asymptomatic Child, China**	Tang et al., China https://wwwnc.cdc.gov/eid/article/26/6/20-0301_article	Need for RT-PCR in asymptomatic patients ?	-> **Asymptomatic** child **positive** for COVID-19 by RT-PCR **in stool, 17 days after the last virus exposure** -> Still positive 9 days after that (in stool) -> **Never positive** in **respiratory tracts specimens** -> no data on urine and blood -> The child might have transmitted the virus to numerous persons. **Stool from COVID-19 patients might serve as another vehicle for virus transmission**
Int J Infect Dis 02MAR2020	**Recurrence of positive SARS-CoV-2 RNA in COVID-19: A case report**	Chen et al., China https://www.ijidonline.com/article/S1201-9712(20)30122-3/pdf	Why dynamic surveillance is needed ?	- 46-year-old woman with multiple patchy ground glass opacities in bilateral subpleural areas by CT - **Oropharyngeal swab test was positive by RT-PCR.** -> Received **symptomatic treatment** and **antimicrobial therapy** including oseltamivir, arbidol, Lopinavir/ritonavir and moxifloxacin -> 6 testing from 28 Jan to 17FEB, all negative **but one the 2FEB** Discharged on 9FEB and testing remained negative during follow-up. **SARS-CoV-2 RNA of respiratory tract specimen may be persistent or recurrent positive during the course.**

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Clin Inf Dis 09MAR2020	**In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)**	Yao et al., China https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa237/5801998	Use of Chloroquine and Hydroxychloroquine ?	-> Vero cells were treated by **Choloroquine and Hydroxychloroquine** before (prophylaxy) and after (anti-viral) infection by SARS-CoV-2. -> **EC50** are calculated ->**Hydroxychloroquine has superior antiviral and prophylactic activity than chloroquine** -> Physiologically-based pharmacokinetic (PBPK) -> to **predict** (in silico) **drug concentrations** in lung, plasma and blood. -PBPK model has acceptable prediction accuracy. -Kinetics were simulated with different scenari of dose regimens -Dose regiment was optimized (**recommendations**).
J Clin Microbiol 04MAR2020	**Multicenter Evaluation of the QIAstat-Dx Respiratory Panel for the Detection of Viruses and Bacteria in Nasopharyngeal Swab Specimens**	Leber et al., USA https://jcm.asm.org/content/early/2020/02/28/JCM.00155-20.long	Is the **QIAstat-Dx Respiratory Panel** a good diagnostic tool ?	**-> Multiplex** in vitro **diagnostic test** for the **qualitative** detection of **20 pathogens** directly from **nasopharyngeal swab specimens.** -> Results available in approximately **69 minutes** **-> Pathogens identified:** adenovirus, coronavirus 229E, coronavirus HKU1, coronavirus NL63, coronavirus OC43, human metapneumovirus A+B, influenza A, influenza A H1, influenza A H3, influenza A H1N1/2009, influenza B, parainfluenza virus 1, parainfluenza virus 2, parainfluenza virus 3, parainfluenza virus 4, rhinovirus/enterovirus, respiratory syncytial virus A+B, Bordetella pertussis, Chlamydophila pneumoniae and Mycoplasma pneumoniae -> Compared to the BioFire FilmArray Respiratory Panel version 1.7: **percent agreement: 99,5%** . **negative percent agreement of ≥ 97.9%** **Robust and accurate assay for rapid, comprehensive testing for respiratory pathogens.**
Cell Discov 24FEB2020	**Comparative genetic analysis of the novel coronavirus (2019-nCoV/SARS-CoV-2) receptor ACE2 in different populations**	Cao et al., China https://jcm.asm.org/content/early/2020/02/28/JCM.00155-20.long	ACE2 : any **variants**? any **variation in expression**? What would that mean in terms of **susceptibility or response to disease/virus** ?	-> Previous studies demonstrated the **positive correlation of ACE2 expression and the infection of SARS-CoV in vitro** -> **Here:** Systematic analysis of coding-region variants in *ACE2* and the eQTL variants (may affect the expression of ACE2) among different populations (GTEx database)/ -> The **East Asian** populations have **much higher AFs in the eQTL variants** associated **with higher ACE2 expression** in tissues which may suggest **different susceptibility or response** to 2019-nCoV/SARS-CoV-2 **from different populations** under the similar conditions. -> No direct evidence supporting the existence **of coronavirus S-protein binding-resistant *ACE2* mutants** in different populations.
Jour of Infect 29FEB2020	**Identification of the hyper-variable genomic hotspot for the novel coronavirus SARS-CoV-2**	Wen et al., China https://www.journalofinfection.com/article/S0163-4453(20)30108-0/pdf	SARS-CoV-2 : which mutations in current population and from SARS-CoV ? What does that mean ?	-> Confirmation of the relationship of SARS-CoV-2 with other beta coronaviruses on the amino acid level. -> Hyper-variable genomic hotspot established in SARS-CoV-2 **population at the nucleotide but not the amino acid level** -> means <u>**no beneficial mutations**</u>. -> **Mutations in nsp1, nsp3, nsp15, and gene S would be associated with the SARS-CoV-2 epidemic (compared with RaTG13) / required for human adaptation?**
Sci. China Life Sci. 04MAR2020	**Clinical characteristics of 24 asymptomatic infections with COVID-19 screened among close contacts in Nanjing, China**	https://link.springer.com/article/10.1007%2Fs11427-020-1661-4	Clinical characteristics of asymptomatic infections ?	-> Laboratory-confirmed positive for the COVID-19 (pharyngeal swab) -> No obvious symptoms **at time of screening** (all of them) -> **20.8%** developed symptoms (fever, cough, fatigue, etc.) -> 50.0% cases showed typical CT images of ground-glass chest ->20.8% presented stripe shadowing in the lungs -> 29.2% cases showed normal CT image and had no symptoms during hospitalization (**these cases were younger**) -> **Epidemiological investigation revealed asymptomatic transmission**

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JAMA 04MAR2020	**Air, Surface Environmental, and Personal Protective Equipment Contamination by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) From a Symptomatic Patient**	Ong et al., Singapore https://jamanetwork.com/journals/jama/fullarticle/2762692?resultClick=1	What about nosocomial transmission ?	Extensive **environmental contamination** by 1 SARS-CoV-2 patient with mild upper respiratory tract involvement -> Toilet bowl and sink samples were positive -> Swabs taken from the air exhaust outlets tested positive -> Air samples were negative -> Risk of transmission from contaminated footwear is likely low: negative results in the anteroom and clean corridor **Limit of the study:** viral culture was not done to demonstrate viability
Nat Sci Rev 03MAR2020	**On the origin and continuing evolution of SARS-CoV-2**	Tang et al., China https://academic.oup.com/nsr/advance-article/doi/10.1093/nsr/nwaa036/5775463?searchresult=1	How did SARS-CoV-2 evolve ?	-> Assessment of the **molecular phylogeny** and the divergence between **SARS-CoV-2** and **related coronaviruses**. ->Population genetic analyses of 103 genomes of SARS-CoV-2 incate that there are **two major types of viruses** (designated **L and S**) currently circulating between humans. -> The **L type is predominant (70%** against 30% for S type). -> **This article suggests that the L type is more aggressive.**
JAMA 03MAR2020	**Epidemiologic Features and Clinical Course of Patients Infected With SARS-CoV-2 in Singapore**	Young et al., Singapore https://jamanetwork.com/journals/jama/fullarticle/2762688	Singapore's experience with the SARS-CoV-2 epidemic?	-> **18patients** diagnosed with SARS-CoV-2 infection in Singapore between January 23 and February 3, 2020 -> Respiratory tract infection with **prolonged viral shedding from the nasopharynx** of **7 days or longer** in 15 patients (83%) -> Supplemental oxygen was required in 6 patients (33%), **5 of whom** were treated with **lopinavir-ritonavir**, with **variable clinical outcomes** following treatment.
J Clin Med 27FEB2020	**Epidemiological Identification of A Novel Pathogen in Real Time: Analysis of the Atypical Pneumonia Outbreak in Wuhan, China, 2019—2020**	Jung et al., Japan https://www.mdpi.com/2077-0383/9/3/637	How important is non-virological descriptive characteristics ?	->**Non-virological descriptive characteristics** could have determined that the outbreak is caused by a novel pathogen **in advance of virological testing**. -> Characteristics of the outbreak **were collected in real time and compared with characteristics of eleven pathogens** that have previously caused cases of atypical pneumonia. -> The **probability that a new virus was driving** the outbreak was assessed as **over 29%** on 31 December 2019, **one week before virus identification.**
EuroSurv 27FEB2020	**Early transmission patterns of coronavirus disease 2019 (COVID-19) in travellers from Wuhan to Thailand, January 2020**	Okada et al., Thailand https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.8.2000097		-> 2 woman arriving in Thailand at different times (8 and 13 January) -> The **two viral genomes are identical** to four sequences from Wuhan, while no direct link to the Huanan Seafood Market. -> **Identical genomes of up to 30 kb are rare and a strong sign of recent transmission linkage** -> Data suggest that **transmission within Wuhan beyond the Huanan Seafood Market is likely to have occurred in the first week of January or earlier.**
EuroSurv 25FEV2020	**Differential diagnosis of illness in patients under investigation for the novel coronavirus (SARS-CoV-2), Italy, February 2020.**	Bordi et al., Italy https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.8.2000170	Why performing differential diagnosis in this context ?	-> **Similarity of symptoms** shared with more common respiratory infections. -> **Broad screening** requested. -> **Influenza virus** infections: **28.5% of all suspected cases** of SARS-CoV-2 infection. -> **Alternative diagnoses may clarify an individual patient's risk and may allow adjusting public health containment measures.**

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J Med Virol 28FEV2020	**Development of Epitope-Based Peptide Vaccine Against Novel Coronavirus 2019 (SARS-COV-2): Immunoinformatics Approach**	Bhattacharya et al., India https://onlinelibrary.wiley.com/doi/abs/10.1002/jmv.25736	Which epitopes could be used for a potential vaccine ?	1-> Characterization of the **spike glycoprotein** to obtain immunogenic epitopes 2-> Immunoinformatic analysis of 13 MHC I and 3 MHC II epitopes which **have antigenic properties** 3-> These identified epitopes are candidate to formulate a **multi-epitopic peptide vaccine.** **Need for** *in vitro* and *in vivo* validations
J Clin Med 24FEB2020	**Assessing the Impact of Reduced Travel on Exportation Dynamics of Novel Coronavirus Infection (COVID-19)**	Anzai et al., Japan https://www.mdpi.com/2077-0383/9/2/601	How much reducing travel impacted on virus exportation ?	**->** From **28 January to 7 February 2020**, around 226 exported cases were prevented (=70.4% reduction in incidence) -> Reduced probability of a major epidemic in Japan: from 7% to 20% (=median time delay: of 2 days) **->** Depending on the scenario, the estimated delay may be less than one day. As the **delay is small**, the decision to control travel volume through restrictions on freedom of movement should be **balanced** between the <u>resulting estimated epidemiological impact</u> and <u>predicted economic fallout</u>.
Viruses 25FEB2020	**Preliminary Identification of Potential Vaccine Targets for the COVID-19 Coronavirus (SARS-CoV-2) Based on SARS-CoV Immunological Studies**	Ahmed et al., China https://www.mdpi.com/1999-4915/12/3/254	Which knowledge on **SARS-CoV** can we use for identification of vaccine targets for **SARS-CoV-2** ?	**-> High genetic similarity** between **SARS-CoV-2 and SARS-Co**. **->** Identification of a set of **B cell and T cell epitopes** derived from the spike (S) and nucleocapsid (N) proteins that **map identically** to SARS-CoV-2 proteins. **-> No mutation** has been observed in these epitopes (as of 21 February 2020). **-> Immune targeting of these epitopes** may offer protection against this novel virus
Emerg Microb Infects 26FEB2020	**Detectable 2019-nCoV viral RNA in blood is a strong indicator for the further clinical severity**	Chen et al., China https://www.tandfonline.com/doi/full/10.1080/22221751.2020.1732837	What does viral RNA in blood mean for clinical severity ?	-> All patients (n=6 / 57) with **detectable viral RNA in the blood** progressed to severe symptom stage, indicating a strong **correlation of serum viral RNA with the disease severity** (p-value = 0.0001). -> 8 of the 11 patients with **annal swab virus-positive** was in **severe clinical stage.** **->** Concentration of viral RNA in the **anal swab was higher than in the blood**: virus might replicate in the digestive tract
The NEJM 28FEB2020	**Clinical Characteristics of Coronavirus Disease 2019 in China**	Ni et al., China https://www.nejm.org/doi/pdf/10.1056/NEJMoa2002032?articleTools=true&downloadfile=showPdf&articleTools=true&doi=10.1056/NEJMoa2002032	What are the clinical charactieristics of COVID-19 ?	Median age : **47 years** / Female: 41.9% **Primary composite end point** (admission in ICU, use of mechanical ventilation and death) in **6.1%**, with **5.0% in ICU**, **2.3% with invasive mechanical ventilation**, and **1.4% who died**. History of direct contact with **wildlife**: 1.9% Among nonresidents of Wuhan, **72.3% had contact with residents of Wuhan**, including 31.3% who had visited the city. Most common symptoms: fever (43.8% on admission and 88.7% during hospitalization) and cough (67.8%). Diarrhea was uncommon (3.8%). Median **incubation period**: **4 days** (interquartile range, 2 to 7). **CT:** ground-glass opacity was the most common radiologic: 56.4%. **No radiographic or CT abnormality:** 17.9% with nonsevere disease and 2.9% with severe disease. **Lymphocytopenia: 83.2%**
The Lancet 27FEB2020	**Secondary attack rate and superspreading events for SARS-CoV-2**	Liu et al., UK https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30462-1/fulltext	Do specific situations or settings drive the outbreak ?	**The Ro value** only captures the average dynamics of transmission. **The secondary attack rate (SAR)** is the probability that an infection occurs among susceptible people **within a specific group**. **SAR** among **close contacts would be of 35%** (95% CI 27–44). -> An infection with a high household SAR but a modest R0 suggests transmission is driven by a relatively small number of high-risk contacts. -> A large household SAR further suggests that between-household transmission risk is lower; otherwise the observed R0 would be larger. **More data are needed.**

Journal and date	Title	Authors and link	Main question	Key facts
The Lancet 27FEB2020	**Positive RT-PCR Test Results in Patients Recovered From COVID-19**	Lan et al, China https://jamanetwork.com/journals/jama/fullarticle/2762452	Virus re-detection in recovered patients ?	**Little attention** has been paid to the **follow-up of recovered** patients so far. **4 patients** with COVID-19 who met criteria for hospital discharge or discontinuation of quarantine in China (absence of clinical symptoms and radiological abnormalities and 2 negative RT-PCR test results) had **positive RT-PCR test results 5 to 13 days later**, while they were still **asymptomatic.**
The Lancet 27FEB2020	**COVID-19: combining antiviral and anti-inflammatory treatments** **COMMENT**	Stebbing et al., UK https://www.thelancet.com/journals/laninf/PIIS1473-3099(20)30132-8/fulltext	Use of Baricitinib?	-> COVID-19 characterised by an overexuberant inflammatory response SARS -> viral load is not correlated with the worsening of symptoms -> Inhibition of **numb- associated kinase (NAK)** family would reduce viral infection in vitro (inhibit clathrin-mediated endocytosis and thereby inhibit viral infection of cells) -> **JAK–STAT** signalling inhibitors, could be effective against the consequences of the elevated levels of cytokines (including interferon) typically observed in people with COVID-19 -> Baricitinib is a NAK inhibitor (**anti-viral**) -> Baricitinib, fedratinib, and ruxolitinib are JAK inhibitors (**anti-inflammatory**) -> **Baricitinib is the best of the group**
The Lancet 27FEB2020	**Convalescent plasma as a potential therapy for COVID-19** **COMMENT**	Chen et al., China https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(20)30141-9.pdf	Convalescent plasma as a therapy?	-> In 2014, the use of convalescent plasma collected from patients who had recovered from **Ebola virus disease** was **recommended by WHO** as an empirical treatment during outbreaks. -> A protocol for the use of convalescent plasma in the treatment of MERS coronavirus was established in 2015. -> **H1N1:** significant reduction of relative risk of mortality / no **adverse event**. -> and other studies **Antibodies from convalescent plasma might suppress viraemia**
The Lancet, 26FEB2020	**The psychological impact of quarantine and how to reduce it: rapid review of the evidence**	Brooks et al., UK https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30460-8/fulltext	Psychological impact of quarantine ? **Recommendation ?**	-> Information is key; people who are quarantined need to understand the situation -> The quarantine period should be short and the duration **should not be changed** unless in extreme circumstances ->Most of the adverse effects come from the imposition of a restriction of liberty; voluntary quarantine is associated with less distress and fewer long-term complications ->**Public health officials should emphasise the altruistic choice of self-isolating**
The Lancet 25FEB2020	**Potential association between COVID-19 mortality and health-care resource availability**	Ji et al., China https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30068-1/fulltext	Does health care resource availability impact on mortality ?	Plotting mortality against the incidence of COVID-19 (cumulative number of confirmed cases since the start of the outbreak, per 10 000 population) showed a significant positive correlation, suggesting that **mortality is correlated with health-care burden**
The Lancet 24FEB2020	**COVID-19 control in China during mass population movements at New Year**	Chen et al., China https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30421-9/fulltext	How and why controlling mass population movements ?	Several lessons that can be drawn from China's extension of the Lunar New Year holiday: 1-> Countries should consider **periods of recommended or mandatory closure of non-essential workplaces and public institutions**— to slow the rate of transmission. 2-> To tailor the design of these actions according to specific epidemic characteristics (incubation period and transmission routes). 3-> This is to prevent people with asymptomatic infections from spreading the disease. As such, **governments should use the closure period for information and education campaigns**, **community screening**, **active contact tracing**, and i**solation** and **quarantine** to maximise impact.

Literature review of <u>accepted</u> relevant papers
19-03-2020

Journal and date	Title	Authors and link	Main question	Key facts
The Lancet 24FEB2020	**Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study**	Xiaobo Yang et al., China https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30079-5/fulltext	What are the clinical course and outcomes on 52 critically ill adult patients ?	- **Mortality is high**. The survival term of the non-survivors is likely to be within 1–2 weeks after ICU admission. - Older patients (>65 years) with comorbidities and ARDS are at increased risk of death.
The Lancet 24FEB2020	**Viral load of SARS-CoV-2 in clinical samples**	Pan et al., China https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30113-4/fulltext	What is the dynamics of the viral load in sputum, urine, throat swab and stool in 82 infected infividuals.	- The **viral loads** in throat swab and sputum samples peaked at around **5–6 days after symptom onset**, ranging from around 104 to 107 copies per mL during this time - **Sputum samples** generally showed higher viral loads than throat swab samples.
The Lancet 24FEB2020	**COVID-19 pneumonia: what has CT taught us?**	Lee et al., China https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30134-1/fulltext	What has CT taught us ?	- The predominant CT findings included **ground-glass opacification, consolidation, bilateral involvement, and peripheral and diffuse distribution**. - More research is needed to correlate of CT findings with clinical severity and progression, the predictive value of baseline CT or temporal changes for disease outcome, and the sequelae of acute lung injury induced by COVID-19.
The Lancet 19FEB2020	**Asymptomatic cases in a family cluster with SARS-CoV-2 infection**	Pan et al., China https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30114-6/fulltext	Asymptomatic transmission ?	- In this family cluster, although **all individuals tested positive** for SARS-CoV-2 infection on qRT-PCR, only patient 1 showed clinical symptoms, decreased lymphocyte count, and abnormal chest CT images. - However, **any of the three individuals could have been the first one to become infected** and thus transmitted the virus to the other two family members.
The Lancet 19FEB2020	**Enteric involvement of coronaviruses: is faecal–oral transmission of SARS-CoV-2 possible?**	Yeo et al., Singapore https://www.thelancet.com/journals/langas/article/PIIS2468-1253(20)30048-0/fulltext	Is faecal–oral transmission of SARS-CoV-2 possible?	- Considering the evidence of faecal excretion for both SARS-CoV and MERS-CoV, and their ability to remain viable in conditions that could facilitate faecal–oral transmission, it is possible that SARS-CoV-2 could also be transmitted via this route. ->When **SARS-CoV** was seeded into sewage water obtained from the hospitals in a separate experiment, the virus was found to remain infectious for 14 days at 4°C, but for only 2 days at 20°C. SARS-CoV can survive for up to 2 weeks after drying, remaining viable for up to 5 days at temperatures of 22–25°C and 40–50% relative humidity, with a gradual decline in virus infectivity thereafter. Viability of the SARS-CoV virus decreased after 24 h at 38°C and 80–90% relative humidity. -> **MERS-CoV** is viable in low temperature, low humidity conditions. The virus was viable on different surfaces for 48 h at 20°C and 40% relative humidity, although viability decreased to 8 h at 30°C and 80% relative humidity conditions.
J Med Virol 21FEB2020	**COVID-2019: the role of the nsp2 and nsp3 in its pathogenesis.**	Angeletti et al., Rome, Italy https://onlinelibrary.wiley.com/doi/abs/10.1002/jmv.25719	How SARS-Cov-2 is different from the other viruses ? Which are the potential effects of these differences ?	The Open Reading Frame 1ab (ORF1ab) of COVID-2019 has been analyzed to evidence the **presence of mutation caused by selective pressure** on the virus. Which are the probably most common sites undergoing to an aminoacidic change ? -> Insight of some important proteins of the COVID-2019 that are involved in the mechanism of viral entry and viral replication Results: Both nsp2 and nsp3 are under selective pressure. **nsp2**-> could explain why this virus is more contagious than SARS **nsp 3**-> could suggest a potential mechanism differentiating COVID-2019 from SARS

REACTing — research & action — targeting emerging infectious diseases

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The Lancet, 20 FEB 2020	**Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study.**	Gilbert et al., Vittoria's team https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30411-6/fulltext	Preparedness and vulnerability of African countries ?	- Highest importation risk: Egypt, Algeria, and South Africa -> moderate to high capacity to respond to outbreaks - Moderate risk: Nigeria, Ethiopia, Sudan, Angola, Tanzania, Ghana, and Kenya -> variable capacity and high vulnerability
Radiology 20 FEB 2020	**Chest CT Findings in Coronavirus Disease-19 (COVID-19): Relationship to Duration of Infection.**	Bernheim et al., https://pubs.rsna.org/doi/10.1148/radiol.2020200463	CT findingds in relation with time between symptom onset to initial CT scan	Frequency of CT findings is related to infection time course.
THE NEJM, 19FEB2020	**SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients**	Zou et al, Chinq https://www.nejm.org/doi/full/10.1056/NEJMc2001737	Viral loads in different specimens ? And for **asymptomatic patients** ?	- **The higher viral loads were** detected **soon after symptom onset**. - **Higher** viral loads detected **in the nose** than in the throat. - Our analysis **suggests** that the viral nucleic acid shedding pattern of patients infected with SARS-CoV-2 resembles that of patients with influenza and appears different from that seen in patients infected with SARS-CoV. - The viral load that was detected in the **asymptomatic patient** was **similar** to that in the **symptomatic patients**, which **suggests** the **transmission potential of asymptomatic or minimally symptomatic patients.**
Biosci Trends, 19FEB2020	**Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies.**	Gao et al., https://www.ncbi.nlm.nih.gov/pubmed/32074550	Could Choloroquine be effective ?	**Chloroquine phosphate,** an old drug for treatment of malaria, is shown to have apparent efficacy and acceptable safety against COVID-19 associated pneumonia in multicenter clinical trials conducted in China. (**DATA NOT SHOWN !**). The drug is recommended to be included in the next version of the Guidelines for the Prevention, Diagnosis, and Treatment of Pneumonia Caused by COVID-19 issued by the National Health Commission of the People's Republic of China for treatment of COVID-19 infection in larger populations in the future.
Biochem Biophy Res Comm 17 FEB 2020	**Structure analysis of the receptor binding of 2019-nCoV**	Chen et al., China and USA https://www.sciencedirect.com/science/article/pii/S0006291X20303399	The receptor ACE-2: Where is it found (which organisms, which part of the organisms?) What doest it mean?	Structural analysis of the receptor binding domain (RBD) -> 72% identity with SARS CoV / Higher affinity with ACE 2. ACE2 is widely expressed with conserved primary structures <u>throughout</u> the animal kingdom (**possible hosts ?)** Since ACE2 is predominantly expressed in intestines, testis, and kidney, <u>**fecal-oral**</u> and <u>**other routes**</u> of transmission are also **possible**. Finally, antibodies and small molecular inhibitors that can block the interaction of ACE2 with RBD should be developed to combat the virus.
J Clin Med 17 FEB 2020	**Incubation Period and Other Epidemiological Characteristics of 2019 Novel Coronavirus Infections with Right Truncation: A Statistical Analysis of Publicly Available Case Data.**	Linton et al., Japan https://www.mdpi.com/2077-0383/9/2/538	Incubation period?	Incubation period falls within the range of 2–14 days with 95% confidence and has a mean of around 5 days. The mean time from illness onset to hospital admission (for treatment and/or isolation) was estimated at 3–4 days without truncation and at 5–9 days.
J Infect Dis. 18FEB2020	**A familial cluster of infection associated with the 2019 novel coronavirus indicating potential person-to-person transmission during the incubation period.**	Yu et al., China https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiaa077/5739751	Asymptomatic transmission ?	Familial cluster of four patients in Shanghai. One was 88 years old man with moving difficulties and was only exposed to his asymptomatic family members who **developed symptoms later**. The epidemiological evidence has shown a potential transmission of the 2019-nCoV during the incubation period.

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The Lancet 18FEB2020	**Tracking online heroisation and blame in epidemics** **COMMENT**	Atlani Duault et al., France https://www.thelancet.com/action/showPdf?pii=S2468-2667%2820%2930033-5	Why should we pay attention to local perception ?	-> Gathering online **data on local perceptions** has the potential to help public authorities mount more robust responses and better targeted health communications -> It is important to track the evolving dynamics of blame in **real time**, both **to correct inaccurate** information and **to respond to online scapegoating**. -> **Trust is a crucial** support to public health systems. **Public health authorities need to be aware of « complex geographies of hope and blame » while planning responses to the epidemic.**
The Lancet 12 FEB 2020	**What are the risks of COVID-19 infection in pregnant women?**	Qiao et al., China https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30365-2/fulltext		The clinical characteristics reported in pregnant women with confirmed COVID-19 infection are **similar to those reported for non-pregnant** adults with confirmed COVID-19 infection in the general population and are indicative of a relatively optimistic clinical course and outcomes for COVID-19 infection compared with SARS-CoV-1 infection.
The Lancet 12FEB2020	**Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records**	Chen et al., China https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30360-3/fulltext	Is there a vertical transmission of the virus ?	Evidence of intrauterine vertical transmission was assessed by testing for the presence of SARS-CoV-2 in amniotic fluid, cord blood, and neonatal throat swab samples. **All samples tested negative** **None of the 9 patients developed severe COVID-19 pneumonia or died.**
PNAS, 13FEB2020	**Prophylactic and therapeutic remdesivir (GS-5734) treatment in the rhesus macaque model of MERS-CoV infection**	De Wit et al., USA https://www.pnas.org/content/early/2020/02/12/1922083117	Efficacy of prophylactic and therapeutic remdesivir treatment in a NHP model of MERS-CoV infection ?	- 24 h prior to inoculation -> **completely prevented MERS-CoV-induced clinical disease**, strongly inhibited MERS-CoV replication in respiratory tissues, and prevented the formation of lung lesions. - 12 h postinoculation -> **clear clinical benefit**, with a reduction in clinical signs, reduced virus replication in the lungs, and decreased presence and severity of lung lesions. - **Remdesivir may be considered for SARS-CoV -2**
Euro Surveill 6FEB2020	**Effectiveness of airport screening at detecting travellers infected with novel coronavirus (2019-nCoV).**	Quilty et al., UK https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.5.2000080	Are airport screening effective ?	Estimation: **46%** of infected travellers would **not be detected**, depending on incubation period, sensitivity of exit and entry screening, and proportion of asymptomatic cases. -> Airport screening is unlikely to detect a sufficient proportion of 2019-nCoV infected travellers to avoid entry of infected travellers.
Cell Res 4FEB2020	**Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro**	Wang et al., China https://www.nature.com/articles/s41422-020-0282-0		Remdesivir and chloroquine **are highly effective** in the control of 2019-nCoV infection **in vitro**. These compounds have been used in human patients with a safety track record and shown to be effective against various ailments. They should be assessed in human patients suffering from the **novel coronavirus disease**.
Emerge Microbes Infect 03FEB2020	**Potent binding of 2019 novel coronavirus spike protein by a SARS coronavirus-specific human monoclonal antibody.**	Tian et al., China https://www.biorxiv.org/content/10.1101/2020.01.28.923011v1	Use of anti-SARS CoV antibodies against SARS-CoV-2 binding ? Therapeutic?	A SARS-CoV-specific human monoclonal antibody, CR3022, could bind potently with 2019-nCoV RBD. ->Potential to be developed as candidate therapeutics ? Some of the most potent SARS-CoV-specific neutralizing antibodies that target the ACE2 binding site of SARS-CoV failed to bind 2019-nCoV spike protein. -> It is still **necessary to develop novel monoclonal antibodies** that could bind specifically to 2019-nCoV RBD.
The Lancet 03FEB2020	**Baricitinib as potential treatment for 2019-nCoV acute respiratory disease**	Richardson et al., UK https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(20)30304-4.pdf		The receptor that 2019-nCoV uses to infect lung cells might be ACE2, a cell-surface protein on cells in the kidney, blood vessels, heart, and, importantly, lung AT2 alveolar epithelial cells. One of the known regulators of endocytosis is the AP2-associated protein kinase 1 (AAK1). The plasma concentration of Baricitinib on therapeutic dosing (either as 2 mg or 4 mg once daily) is sufficient to inhibit AAK1, we suggest it could be trialled.