

Journal and date	Title	Authors and link	Main question	Key facts
Journal of Infectious Disease 31MAR2020	Characteristics of peripheral lymphocyte subset alteration in COVID-19 pneumonia	Fan W et al, China https://doi.org/10.1093/infdis/jiaa150	Characteristics and clinical significance of peripheral lymphocyte subset alteration in COVID-19	<p>60 patients – monocentric – total lymphocytes in COVID-19 were compared to healthy controls (HC) Median age 60 y 32% were serious illness <u>Compared to HCs, COVID-19 had a decrease in:</u></p> <ul style="list-style-type: none"> - Total lymphocytes - CD4 + - CD8+ - NK cells and B cells <p><u>Serious compared to mild patient:</u></p> <ul style="list-style-type: none"> - Decrease total lymphocytes, CD4+, CD8+ and B cells in serious patients <p><u>Post-treatment:</u></p> <ul style="list-style-type: none"> - Total lymphocytes, CD8+ and B cells increased significantly in responders - No significant change in non responder's <p>CD8+ cells potential predictor for disease severity and poor clinical efficacy</p>
The Lancet ID 30MAR2020	Estimates of the severity of coronavirus disease 2019: a model-based analysis	Verity et al., UK https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30243-7/fulltext#	Severity of coronavirus disease ?	<p><u>Using data on 24 deaths that occurred in mainland China and 165 recoveries outside of China:</u></p> <ul style="list-style-type: none"> - Mean duration from onset of symptoms to death : 17,8 days - Mean duration from onset to hospital discharge: 24,7 days - Crude case fatality ratio: 3,67% <p>After further adjusting for demography and under-ascertainment:</p> <ul style="list-style-type: none"> - Case fatality ratio: 1,38% / <60 y : 0,32% / >60y: 6,4% / >80y: 13,4% <p>Estimates of case fatality ratio from international cases stratified by age were consistent with those from China (see paper for data)</p> <p>Estimated overall infection fatality ratio for China: 0-66%, with an increasing profile with age.</p> <p>Estimates of the proportion of infected individuals likely to be hospitalised increased with age up to a maximum of 18-4% in those aged 80 years or older.</p>
The Lancet ID 27MAR2020	Clinical and virological data of the first cases of COVID-19 in Europe: a case series	Lescure et al., France https://doi.org/10.1016/S1473-3099(20)30200-0		<p><u>5 Patients:</u> 3 men: aged 31 years, 48 years, and 80 years – 2 women: aged 30 years and 46 years</p> <p><u>3 different clinical evolutions:</u></p> <ul style="list-style-type: none"> - 2 paucisymptomatic women diagnosed within a day of exhibiting symptoms, with high nasopharyngeal titres of SARS-CoV-2 within the first 24 h of the illness onset and viral RNA detection in stools - A two-step disease progression in 2 young men, with a secondary worsening around 10 days after disease onset despite a decreasing viral load in nasopharyngeal samples - an 80-year-old man with a rapid evolution towards multiple organ failure and a persistent high viral load in lower and upper respiratory tract with systemic virus dissemination and virus detection in plasma. <p>The 80-year-old patient died on day 14 of illness. All other patients had recovered and been discharged by Feb 19, 2020.</p> <p>Diarrhoea (2 to 10%) and nausea/vomiting (1 to 10%) are the most frequent gastrointestinal symptoms. Early in the disease course: earlier than pyrexia Liver injury: abnormal level of ALAT and ASAT in 15 to 53 % of patients – mild and transient → microvesicular steatosis and mild lobular activity → direct viral infection of hepatocytes (ACE2 receptor) or drug toxicity or immune-related injury</p>
Journal of Gastroenterology and Hepatology 27MAR2020	Covid-19 and the Digestive System	Wong S et al, China https://doi.org/10.1111/jgh.15047	Review the gastrointestinal aspects	<p>Possible tropism of SARS-CoV-2 for gastrointestinal tract: ACE2 receptor Faecal source: viral transmission ?</p>

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Clinical Infectious Disease 27MAR2020	Clinical characteristics of refractory COVID-19 pneumonia in Wuhan, China	Mo P et al, China https://doi.org/10.1093/cid/ciaa270	Characteristics of patients with refractory COVID-19	<p>155 patients with median age of 54 years – 85 refractory COVID-19:</p> <ul style="list-style-type: none"> - Older and more male ($p < 0,05$) - More comorbidities: diabetes, cardiovascular disease, cerebrovascular disease ($p < 0,05$) - Higher incidence of breath shortness and anorexia ($p < 0,05$) - Bilateral pneumonia - Higher CRP, LDH, ASAT and neutrophile <p>Risk factors:</p> <ul style="list-style-type: none"> - Male (OR: 2,3 [1,0-4,8]) and anorexia admission (OR:3,9 [1,1-13,4]) <p>Received more oxygen (OR: 3,0), corticosteroid (OR:2,32) Protective factor: fever on admission (OR: 0,33 [0,1 – 0,9])</p>
JAMA 27MAR2020	Treatment of 5 critically ill patients with COVID-19 with convalescent plasma	Shen C et al, China https://jamanetwork.com.proxy.insermbiblio.iist.fr/journals/jama/fularticle/2763983	First clinical experience with convalescent plasma transfusion administered to critically ill patients with COVID-19	<p>5 patients: severe pneumonia + $P_{A_{O_2}}/F_{I_{O_2}} < 300$mmHg + currently or has been supported by mechanical ventilation All received antiviral agents and steroids Administered between 10 and 22 days after admission</p> <p>After transfusion:</p> <ul style="list-style-type: none"> - Ct value and viral load declined - Value of inflammatory biomarkers decreased - Clinical improvement: improved $P_{A_{O_2}}/F_{I_{O_2}}$, reduced body temperature, improved chest imaging - No longer required respiratory support by 9 days after transfusion <p>Limitations:</p> <ul style="list-style-type: none"> - No control group and small cases - Improved without transfusion? - Improvement related to transfusion or other therapies? - Late administration of transfusion: different timing would be associated with different outcomes?
J. Med. Virol. 26MAR2020	Stability Issues of RT-PCR Testing of SARS-CoV-2 for Hospitalized Patients Clinically Diagnosed with COVID-19	Li et al., China https://doi.org/10.1002/jmv.25786	Can we totally rely on RT-PCR ?	<p><u>610 hospitalized patients from Wuhan</u> -> High false negative rate of RT-PCR testing -> RT-PCR results from several tests at different points were variable from the same patients during the course of diagnosis and treatment of these patients</p> <p>Clinical indicators such as CT images should also be used not only for diagnosis and treatment but also for isolation, recovery/discharge and transferring for hospitalized patients clinically diagnosed with COVID-19 during the current epidemic.</p>
JAMA 26MAR2020	Antibodies in Infants Born to Mothers With COVID-19 Pneumonia	Zeng et al., China https://jamanetwork.com/journals/jama/fullarticle/2763854	Maternal-infant transmission ?	<p>A novel study on 6 pregnant women and their infants confirm no maternal-infant transmission of SARS-CoV-2 based on reverse transcriptase–polymerase chain reaction (RT-PCR) and reveals the presence of antibodies in all newborns :</p> <ul style="list-style-type: none"> · 6 mothers had mild clinical manifestations and had cesarean deliveries in their third trimester · Neonatal throat swabs and blood samples are negative by RT-PCR test · All 6 infants had IgG and IgM virus-specific antibodies in their serum and their mothers also had elevated levels of IgG and IgM · Inflammatory cytokine IL-6 was significantly increased in all infants. <p>Point of care/conclusion The detection of high level of IgM In 2 infants, is not usually. Whether the placentas of women were damaged and abnormal or whether IgM could have been produced by the infant if the virus crossed the placenta need to be confirm in a larger cohort.</p>

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The Lancet Public Health 25MAR2020	The Italian health system and the COVID-19 challenge	Armocida et al., Italy https://doi.org/10.1016/S2468-2667(20)30074-8	Response to be learned from the Italian health system's response to COVID-19	<p>In Italy, National Healthcare Service is regionally based, with local authorities responsible for the organisation and delivery of health services. Due to progressive privatisation and finance cuts, system close to collapse. 4 lessons to be learned :</p> <ul style="list-style-type: none"> - Decentralisation and fragmentation of health services seems to have restricted timely interventions and effectiveness - Health-care systems capacity and financing need to be more flexible in case of emergencies - Solid partnerships between the private and public sector should be institutionalised - Recruitment of HR must be planned and financed with a long-term vision
BMJ 26MARS2020	The world's largest refugee camp prepares for covid-19	Gaia Vince, UK https://doi.org/10.1136/bmj.m1205	How to deal with over crowded camp in a low resource country ?	<p><u>Biggest camp in Cox's Bazar (Bengladesh):</u></p> <ul style="list-style-type: none"> - Nearly 1 million people live in overcrowded conditions. - Particularly vulnerable (physical distancing impossible). <p>United Nations Refugee Agency coordinate efforts to increase hand washing, using community leaders to inform (imams and women group leaders).</p> <p>Other initiative for preparedness : creation of isolation unit in the camp. Aid workers are credible after experience of managing other crisis (malaria, dengue, cholera...) in the camp since 2 years and a half.</p>
Lancet 25MAR2020	Clinical features and obstetric and neonatal outcomes of pregnant patients with COVID-19 in Wuhan, China: a retrospective, single-centre, descriptive study	Yu N. et al, China https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(20)30176-6.pdf	Clinical features and obstetric and neonatal outcomes of pregnant patients with COVID-19	<p><u>Pregnant patients with COVID 19 – no ICU :</u></p> <p>Mean age gestational: 39 + 1 - All caesarean section Fever (6) - Cough (1) - Shortness of breath (1) - Diarrhea (1) Laboratory tests:</p> <ul style="list-style-type: none"> - Elevated CRP (7) - Lymphopenia (5) – thrombopenia (2) - Elevated IL-6 (4) <p>Chest CT: all pneumonia → bilateral (6), unilateral (1) Treatment: oxygen + antiviral + antibiotic (single or combination) + traditional medicine. Methylprednisolone for 5 after caesarean section. Neonatal: 3 stays in observation and 1 was positive for SARS-CoV2 with mild shortness of breath. At 28 days after birth: all child was healthy No arguments for vertical transmission</p>
SCIENCE 25MAR2020	The effect of human mobility and control measures on the COVID-19 epidemic in China	Kraemer et al., UK https://science.sciencemag.org/content/early/2020/03/25/science.abb4218	How does human mobility affect COVID-19 Epidemic ?	<p><u>Use of real-time mobility data from Wuhan and detailed case data including travel history</u></p> <ul style="list-style-type: none"> -> Early: spatial distribution of COVID-19 cases in China was explained well by human mobility data -> After implementation of control measures: this correlation dropped and growth rates became negative in most locations <p>Travel restrictions are particularly useful in the early stage of an outbreak when it is confined to a certain area that acts as a major source. However, travel restrictions may be less effective once the outbreak is more widespread.</p>
Inter J of Infectious Diseases 25MAR2020	Epidemiological, clinical characteristics of cases of SARS-CoV-2 infection with abnormal imaging findings	Zhang X et al, China https://www.ijidonline.com/article/S1201-9712(20)30172-7/fulltext	Investigate the epidemiological, clinical characteristics of COVID-19	<p>645 patients with 72 no-pneumonia and 573 pneumonia Bilateral lung disease: 432 (67%) Group with pneumonia:</p> <ul style="list-style-type: none"> - Older: 46,6 vs 34,9 years - One coexisting underlying: 28,8% vs 16% - Less exposure to Wuhan or confirmed patient - Time from onset to COVID-19 was longer: 5 days vs 2 days - Symptoms: fever and cough - Lower lymphocyte, albumin and NaCl - Higher LDH and CRP <p><u>Predictive factor of severe pneumonia:</u></p> <ul style="list-style-type: none"> - Lymphopenia and higher creatinine - Shortness of breath

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Disaster medicine and public health preparedness 24MAR2020	Chronology of COVID-19 cases on the Diamond Princess cruise ship and ethical considerations: a report from Japan	Nakazawa, et al. Japan http://www.ncbi.nlm.nih.gov/pubmed/32207674	Ethical questions raised from the case of the Diamond Princess.	<p><u>Ship = virus incubator + "international miniature company"</u> -> Difficulty in testing such a large number of people of various origins and faiths</p> <p><u>Recommendations of the article:</u> Politically: -> Alert political decision-makers to the impact of multiple, contradictory, false or unconfirmed information on the health of confined passengers -> Mobilize collective intelligence / academic consensus by involving a large number of experts</p> <p>In terms of ethics and public health: -> When is the principle of confinement at sea justified: human rights dilemma (ensuring minimum well-being for passengers and crew) / health security (preventing the spread of the virus on land) -> Two criteria for authorizing a ship to dock or not = "1) the nation's geopolitical status '+ 2) the nation's ability to provide adequate health care ». -> Optimizing the material and psychological conditions of confinement on a ship: access to medication; psychological support ; means of communication with the outside world ; transparency and consistency of media information + take into account cultural differences</p> <p>Legally: -> Design and implement international regulations because an epidemic on board a ship should not be dealt with solely with regard to local policies (territory in which the ship is at anchor) -> Strengthen international cooperation.</p>
The Lancet Global Health 24MAR2020	Early in the epidemic: impact of preprints on global discourse about COVID-19 transmissibility COMMENT	Maimuna et al., USA https://doi.org/10.1016/S2214-109X(20)30113-3		<p><u>Novelty of SARS-CoV-2, so scientists rushed to fill epidemiological, virological, and clinical knowledge gap</u></p> <p>-> 50 new studies about the virus between January 10 and January 30 alone.</p> <p>Use of a simple method to plot the ten R0 estimations posted as preprints before publication of the first peer-reviewed study on Jan 29. Result of the peer review R0 estimations are very similar to those in the peer-reviewed studies published on and after Jan 29.</p> <p><u>Conclusions :</u> - Powerful role preprints can have during public health crises because of the timeliness with which they can disseminate new information. - Use of preprint does not jeopardise future peer-reviewed publication (first step : preprint and then peer reviewed) - Impact of preprints on discourse and decision making to the ongoing COVID-19 outbreak (even if in some cases the preprints have conveyed erroneous ideas) Necessity of handling SARS-CoV-2 in BSL-3 facilities and accessibility to virus strains -> barriers to develop candidate vaccines and therapeutics.</p>
Emerging microbes and Infections 24MAR2020	Establishment and validation of a pseudovirus neutralization assay for SARS-CoV-2	Jianhui Nie et al, China http://www.ncbi.nlm.nih.gov/pubmed/32207377	Pseudoviruses as tools for evaluating vaccines or drugs against SARS-CoV-2 in BSL2	<p>-> Hence, development of a SARS-CoV-2 pseudovirus based in neutralization assays using S viral genes cloned into pcDAN3.1 plasmids. -> Expressed in a VSV pseudoviral platform. -> Huh7 cells plated at 5x10⁴/well were identified as the best cell system for SARS-CoV2 pseudovirus infection (inocula of 650 TCID50/well).</p> <p>When tested against the SARS-CoV-2 pseudovirus, SARS-CoV-2 convalescent patient sera showed high neutralizing potency, which underscore its potential as therapeutics.</p>

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The Lancet 23MAR2020	Temporal profiles of viral load in posterior oropharyngeal saliva samples and serum antibody responses during infection by SARS-CoV-2: an observational cohort study	Kai-Wang et al., China https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30196-1/fulltext	Viral load in saliva samples and serum Ab response ?	<p>23 persons were included</p> <ul style="list-style-type: none"> - Median viral load in posterior oropharyngeal saliva or other respiratory specimens at presentation was 5.2 log₁₀ copies per mL - Salivary viral load: highest during the first week after symptom onset and subsequently declined with time - In one patient, viral RNA was detected 25 days after symptom onset. - Older age was correlated with higher viral load - For 16 patients with serum samples available 14 days or longer after symptom onset, rates of seropositivity were 94% for anti-NP IgG, 88% for anti-NP IgM, 100% for anti-RBD IgG, and 94% for anti-RBD IgM. - Anti-SARS-CoV-2-NP or anti-SARS-CoV-2-RBD IgG levels correlated with virus neutralisation titre.
JAMA 23MAR2020	Ethics Committee Reviews of Applications for Research Studies at 1 Hospital in China During the 2019 Novel Coronavirus Epidemic	Zhang H et al.- China https://doi.org/10.1001/jama.2020.4362	Implementation of review system for ethical evaluation of clinical research projects at Henan Hospital during the outbreak	<ul style="list-style-type: none"> - Henan hospital: designated to provide care to COVID-19 patients. - Hospital ethics committee organized 4 emergency video conference in 35 days. - Projects evaluated within 2,13 days after submission: more quickly that other previous boards organized in an outbreak context. - 41 applications were reviewed; 6 were approved; 4 rejected; and 31 referred for modification because of lack statistical basis for sample size calculation, deficiencies in inclusion/exclusion criteria or issues related to consent form. Although the rush, review standards were not lowered during the outbreak.
Open Forum Infect Dis 21MAR2020	High-dose intravenous immunoglobulin as a therapeutic option for deteriorating patients with Coronavirus Disease 2019	Wei Cao and al, China https://doi.org/10.1093/ofid/ofaa102	Efficacy of high-dose intravenous immunoglobulin (IVIg) at the time of respiratory distress initiation ?	<p>3 adults (56, 34 and 35 y)</p> <ul style="list-style-type: none"> - treated by 25 grams per day for five days of immunoglobulins at the time of respiratory distress initiation + antibiotic - temperature back to normal in one to two days, and breathing difficulties alleviating in 3-5 days Point of attention: other treatments were given, antiviral for 2/3 patients, corticoid for 1. The first few days of deterioration may present a critical point when potent suppression of inflammatory cascade could save the patients from fatal immune-mediated injuries
International journal of antimicrobial agents 20MAR2020	Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial	Gautret, and al, France https://www.sciencedirect.com/science/article/pii/S0924857920300996	Evaluation of hydroxychloroquine on respiratory viral loads	<p>Hospitalized patients : i) age >12 years and ii) PCR documented SARS-CoV-2 carriage in nasopharyngeal sample at admission</p> <ul style="list-style-type: none"> - Treatment: oral hydroxychloroquine sulfate 200 mg, 3/day during 10 days. - 26 treated among them, six patients received additional azithromycin. - Control group : 16 patients from another centre or refusal to participate - 6 patients treated were excluded from the analysis Primary endpoint : virological clearance at day-6 post-inclusion 70% of hydroxychloroquine-treated patients (N=20) were virologically cured comparing with 12.5% in the control group (N=16) (p= 0.001)

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Journal Travel Medicine and Infectious Disease 20MAR2020	COVID-19: Active measures to support community-dwelling older adults	K, Kuwahara et al., Japan http://www.ncbi.nlm.nih.gov/pubmed/32205272	Advocacy for effective non-pharmaceutical protection measures for older adults and mitigation of negative effects (the example of Japan)	<p>-> With no proven drug and vaccine treatments, non-pharmaceutical measures, especially social distancing, are an essential to slow the spread of the epidemic.</p> <p>-> Given the higher risk associated with older adults, practical information should be provided to community-dwelling adults to help maintain appropriate community activity levels.</p> <p>-> Issue of social isolation: efforts are needed to mitigate the negative psychological impact. recent technological advances may help detect and provide care for groups at high risk of social isolation. plans and measures to maintain social ties should be prepared at the individual level (family, friends, neighborhood, etc.), organizational or community levels, and societal level.</p>
Travel Med Infect Dis 20MAR2020	Rapid viral diagnosis and ambulatory management of suspected COVID-19 cases presenting at the infectious diseases referral hospital in Marseille, France, - January 31st to March 1st, 2020: A respiratory virus snapshot	Amrane et al, France http://www.ncbi.nlm.nih.gov/pubmed/32205269		<p>Rapid viral detection performed on sputum and nasopharyngeal samples from the first 280 patients suspected to have COVID-19.</p> <p>No SARS-CoV-2 was detected. Other viral infections were identified in 49% of the patients, with most common pathogens being influenza A and B viruses, rhinovirus, metapneumovirus and common coronaviruses, notably HKU1 and NL63.</p>
Cell Mol Immunol 19MAR2020	Characterization of the receptor-binding domain (RBD) of 2019 novel coronavirus: implication for development of RBD protein as a viral attachment inhibitor and vaccine	Wanbo Tai et al., China https://www.nature.com.proxy.insermbiblio.inist.fr/articles/s41423-020-0400-4	The CoV spike (S) protein as a possible target for development of antibodies, entry inhibitors and vaccines ?	<p>-> SARS-CoV-2 receptor-binding domain (RBD) protein could be used as a therapeutic agent against SARS-CoV-2 and SARS-CoV infection (from results <i>in vitro</i>)</p> <p>-> RBD in SARS-CoV-2 S protein was identified</p> <p>-> RBD protein bound strongly to human and bat angiotensin-converting enzyme 2 (ACE2) receptors.</p> <p>- SARS-CoV RBD-specific antibodies could crossreact with SARS-CoV-2 RBD protein</p> <p>- SARS-CoV RBD-induced antisera could cross-neutralize SARS-CoV-2 -> potential to develop SARS-CoV RBD-based vaccines for prevention of SARS-CoV-2 and SARS-CoV infection.</p>
NEJM 19MAR2020	A trial of lopinavir-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 ?	<p>Randomized, controlled trial, open-label trial</p> <p>☑ 199 patients included: 99 received lopinavir-ritonavir and 100 standard care alone:</p> <ul style="list-style-type: none"> • 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] <p>Others outcomes:</p> <ul style="list-style-type: none"> • 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 <p>Overall mortality at 22.1%</p> <p>No benefit was observed with lopinavir-ritonavir treatment</p>

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NEJM 19MAR2020	SARS-CoV2 Infection in children	Lu X. et al, China https://www.nejm.org/doi/pdf/10.1056/NEJM2005073?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.
World Journal of Pediatrics 19MAR2020	Clinical features of severe pediatric patients with coronavirus disease 2019 in Wuhan: a single center's observational study	Sun D et al, China https://link.springer.com.proxy.insermbiblio.inist.fr/content/pdf/10.1007/s12519-020-00354-4.pdf	Description of severely or critically ill children with COVID-19 in Wuhan Hospital	8 children included: 5 severely ill and 3 critically ill 2 months to 15 years Symptoms: - Polypnea 100% - Fever (6/8) - Cough (6/8) - Expectoration (4/8) Abnormalities in chest scanning 100% patients: - multiple patch-like shadows - ground glass opacity Biological: - increase CRP, PCT and LDH - elevated ALAT - increase IL6 (2/8), IL10 (5/8), IFN- γ (2/8) Level of IL6 and IL10 were significantly increase in 2 critically ill patient who remained in ICU for 20 days. Specific laboratory abnormalities and excessive immune responses may lead to long-term lung damage and severe health complication
Cell and Mol Biol 17MAR2020	Elevated exhaustion levels and reduced functional diversity of T cells in peripheral blood may predict severe progression in COVID-19 patients	Zheng et al., USA https://www.nature.com/articles/s41423-020-0401-3	Potential immunological risk factors ?	Immunological characteristics of peripheral blood leukocytes from 16 patients: Compared to healthy group (n=6): - Frequency of multi-functional CD4+ T cells (positive for at least two cytokines) decreased significantly in the severe group - The proportion of non-functional (IFN- γ -TNF- α -IL-2-) subsets increased significantly. - No increase in neutrophils or decrease in lymphocytes. - No statistical differences in interleukin-6 (IL-6) and tumor necrosis factor- α (TNF- α) plasma concentrations were found among the three groups - Levels of interferon- γ (IFN- γ) and TNF- α in CD4+ T cells were lower in the severe group than in the mild group, whereas the levels of granzyme B and perforin in CD8+ T cells were higher in the severe group than in the mild group. - Frequency of multi-functional CD4+ T cells decreased significantly in the severe group and proportion of non-functional subsets increased significantly -> Identification of potential immunological risk factors for COVID-19 pneumonia and provided clues for its clinical treatment.
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/NEJM2004973?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

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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 ?	Previously known: 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.
International journal of infectious diseases 17MAR2020	Transmission potential and severity of COVID-19 in South Korea	Shim et al., Rep of Korea https://www.ijidonline.com/article/S1201-9712(20)30150-8/fulltext		- COVID-19 caused 6,284 cases and 42 deaths in South Korea as of March 8, 2020. - The mean reproduction number R_t of COVID-19 in Korea was estimated at 1.5 (95% CI: 1.4-1.6) - The intrinsic growth rate was estimated at 0.6 (95% CI: 0.6, 0.7) and the scaling of growth parameter was estimated at 0.8 (95% CI: 0.7, 0.8), indicating sub-exponential growth dynamics of COVID-19 - The crude case fatality rate is higher among males (1.1%) compared to females (0.4%) and increases with older age, from 0.1% among those 30-39 yrs to 6% among those > = 80 yrs as of March 6, 2020. - Results indicate early sustained transmission of COVID-19 in South Korea and support the implementation of social distancing measures to rapidly control the outbreak.
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/ijid/advance-article/doi/10.1093/infdis/jiaa119/5807958	Asymptomatic carriers: who are they ?	55 asymptomatic carriers Conclusions: -> 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. Analysis of additional cases is necessary to determine if this remains true.
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.

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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	<p>Prisons are epicentres for infectious diseases:</p> <ul style="list-style-type: none"> - 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 <p>-> 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.</p>
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 ?	<p>Analyzing literature describing 38 pregnant women with COVID-19 and their newborns in China</p> <p>-> 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</p> <p>There is no evidence that SARS-CoV-2 undergoes intrauterine or transplacental transmission from infected pregnant women to their fetuses.</p>
Gynecologie, obstetrique, fertilité & senologie 16 MAR2020	Infection with SARS-CoV-2 in pregnancy. Information and proposed care. CNGOF	Peyronnet et al, France https://www.sciencedirect.com/science/article/pii/S2468718920301100?via%3Dihub	Description COVID-19 and pregnancy	<p>Few pregnant women have been described Same symptoms as rest of adult's patients Some cases of ARDS or pneumonia</p> <p>2 pregnant women with invasive ventilation have been described Risk: cesarian and prematurity No miscarriage described</p> <p>Neonatal:</p> <ul style="list-style-type: none"> - no case of vertical transmission - milder symptomatic - symptoms probably due to maternal hypoxemia
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 ?	<p>-> 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.</p> <p>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:</p> <p>-> ASCs appeared in the blood at the time of viral clearance (day 7; 1.48%) and peaked on day 8 (6.91%).</p> <p>-> Emergence of cTFH cells in blood at day 7 (1.98%), increasing on day 8 (3.25%) and day 9 (4.46%)</p> <p>-> 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.</p> <p>-> 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).</p> <p>-> Interestingly, minimal pro-inflammatory cytokines and chemokines were found in this patient with COVID-19, even at days 7–9.</p>

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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/langas/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
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: <ul style="list-style-type: none"> • 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 negatively related to death • 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.
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

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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, not throat swabs , should be assessed as a criterion for releasing COVID-19 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. Real rates: - 5-6% for China - 15-2% outside China Current figures might underestimate the potential threat of COVID-19 in symptomatic patients
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 higher risk 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 suitable alternative treatment in these patients.
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/lanct/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
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.
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%)

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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	To know: RNA Helicase nsP13 is essential for the viral RNA replication of the SARS coronavirus Here: ->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.
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
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 Chloroquine 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).
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 in Mainland China -> More marked effect at the international scale , 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
EuroSurveillance 05MAR2020	Evaluation of a quantitative RT-PCR assay for the detection of the emerging coronavirus SARS-CoV-2 using a high throughput system	Pfefferle et al. Germany https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7068162		Assessment of a molecular assay for the detection of SARS-CoV-2 on a high-throughput platform, the cobas 6800, using the 'open channel' for integration of a laboratory-developed assay. Evaluated samples are swab samples. Good analytical performance in clinical specimens. The fully automated workflow enables high-throughput testing with minimal hands-on time, while offering fast and reliable results. Special notes : by its nature as a screening test targeting only a single viral gene, positive results should always be confirmed with an independent PCR as recommended]. Importance of closely coordinating with local reference centres and public health authorities for determining clinical indications for testing -> Priming of S proteins by host cell proteases (TMPRSS2) is

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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/ta-b-pdf	What do we learn from the structural basis of ACE2 ?	<p>-> 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</p> <p>-> ACE2 may be a homodimer even in the absence of B0AT1</p> <p>-> A dimeric ACE2 can accommodate two S protein trimers, each through a monomer of ACE2</p> <p>-> 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.</p>
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 ?	<p>-> Multiplex <i>in vitro</i> diagnostic test for the qualitative detection of 20 pathogens directly from nasopharyngeal swab specimens.</p> <p>-> Results available in approximately 69 minutes</p> <p>-> 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, Chlamydia pneumoniae and Mycoplasma pneumoniae</p> <p>-> Compared to the BioFire FilmArray Respiratory Panel version 1.7: percent agreement: 99,5% . negative percent agreement of ≥ 97.9%</p> <p>Robust and accurate assay for rapid, comprehensive testing for respiratory pathogens.</p>
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 ?	<p>-> Laboratory-confirmed positive for the COVID-19 (pharyngeal swab)</p> <p>-> No obvious symptoms at time of screening (all of them)</p> <p>-> 20.8% developed symptoms (fever, cough, fatigue, etc.)</p> <p>-> 50.0% cases showed typical CT images of ground-glass chest</p> <p>-> 20.8% presented stripe shadowing in the lungs</p> <p>-> 29.2% cases showed normal CT image and had no symptoms during hospitalization (these cases were younger)</p> <p>-> Epidemiological investigation revealed asymptomatic transmission</p>
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 ?	<p>Extensive environmental contamination by 1 SARS-CoV-2 patient with mild upper respiratory tract involvement</p> <p>-> Toilet bowl and sink samples were positive</p> <p>-> Swabs taken from the air exhaust outlets tested positive</p> <p>-> Air samples were negative</p> <p>-> Risk of transmission from contaminated footwear is likely low: negative results in the anteroom and clean corridor</p> <p>Limit of the study: viral culture was not done to demonstrate viability</p>
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?searchres=ult=1	How did SARS-CoV-2 evolve ?	<p>-> Assessment of the molecular phylogeny and the divergence between SARS-CoV-2 and related coronaviruses.</p> <p>-> Population genetic analyses of 103 genomes of SARS-CoV-2 indicate that there are two major types of viruses (designated L and S) currently circulating between humans.</p> <p>-> The L type is predominant (70% against 30% for S type).</p> <p>-> This article suggests that the L type is more aggressive.</p>

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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?	<p>-> 18 patients diagnosed with SARS-CoV-2 infection in Singapore between January 23 and February 3, 2020</p> <p>-> Respiratory tract infection with prolonged viral shedding from the nasopharynx of 7 days or longer in 15 patients (83%)</p> <p>-> Supplemental oxygen was required in 6 patients (33%), 5 of whom were treated with lopinavir-ritonavir, with variable clinical outcomes following treatment.</p>
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 ?	<p>- 46-year-old woman with multiple patchy ground glass opacities in bilateral subpleural areas by CT</p> <p>- Oropharyngeal swab test was positive by RT-PCR.</p> <p>-> Received symptomatic treatment and antimicrobial therapy including oseltamivir, arbidol, Lopinavir/ritonavir and moxifloxacin</p> <p>-> 6 testing from 28 Jan to 17FEB, all negative but one the 2FEB Discharged on 9FEB and testing remained negative during follow-up.</p> <p>SARS-CoV-2 RNA of respiratory tract specimen may be persistent or recurrent positive during the course.</p>
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 ?	<p>-> Confirmation of the relationship of SARS-CoV-2 with other beta coronaviruses on the amino acid level.</p> <p>-> Hyper-variable genomic hotspot established in SARS-CoV-2 population at the nucleotide but not the amino acid level -> means no beneficial mutations.</p> <p>-> Mutations in nsp1, nsp3, nsp15, and gene S would be associated with the SARS-CoV-2 epidemic (compared with RaTG13) / required for human adaptation?</p>
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 ?	<p>1-> Characterization of the spike glycoprotein to obtain immunogenic epitopes</p> <p>2-> Immunoinformatic analysis of 13 MHC I and 3 MHC II epitopes which have antigenic properties</p> <p>3-> These identified epitopes are candidate to formulate a multi-epitopic peptide vaccine.</p> <p>Need for <i>in vitro</i> and <i>in vivo</i> validations</p>
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&doi=10.1056/NEJMoa2002032	What are the clinical characteristics of COVID-19 ?	<p>Median age : 47 years / Female: 41.9%</p> <p>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.</p> <p>History of direct contact with wildlife: 1.9%</p> <p>Among nonresidents of Wuhan, 72.3% had contact with residents of Wuhan, including 31.3% who had visited the city.</p> <p>Most common symptoms: fever (43.8% on admission and 88.7% during hospitalization) and cough (67.8%). Diarrhea was uncommon (3.8%).</p> <p>Median incubation period: 4 days (interquartile range, 2 to 7).</p> <p>CT: ground-glass opacity was the most common radiologic: 56.4%.</p> <p>No radiographic or CT abnormality: 17.9% with nonsevere disease and 2.9% with severe disease.</p> <p>Lymphocytopenia: 83.2%</p>

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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		<p>-> 2 woman arriving in Thailand at different times (8 and 13 January)</p> <p>-> The two viral genomes are identical to four sequences from Wuhan, while no direct link to the Huanan Seafood Market.</p> <p>-> Identical genomes of up to 30 kb are rare and a strong sign of recent transmission linkage</p> <p>-> Data suggest that transmission within Wuhan beyond the Huanan Seafood Market is likely to have occurred in the first week of January or earlier.</p>
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 ?	<p>-> Non-virological descriptive characteristics could have determined that the outbreak is caused by a novel pathogen in advance of virological testing.</p> <p>-> Characteristics of the outbreak were collected in real time and compared with characteristics of eleven pathogens that have previously caused cases of atypical pneumonia.</p> <p>-> The probability that a new virus was driving the outbreak was assessed as over 29% on 31 December 2019, one week before virus identification.</p>
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 ?	<p>The Ro value only captures the average dynamics of transmission.</p> <p>The secondary attack rate (SAR) is the probability that an infection occurs among susceptible people within a specific group.</p> <p>SAR among close contacts would be of 35% (95% CI 27–44).</p> <p>-> An infection with a high household SAR but a modest R0 suggests transmission is driven by a relatively small number of high-risk contacts.</p> <p>-> A large household SAR further suggests that between-household transmission risk is lower; otherwise the observed R0 would be larger.</p> <p>More data are needed.</p>
The Lancet 27FEB2020	COVID-19: combining antiviral and anti-inflammatory treatments COMMENT	Stebbing et al., UK https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30132-8/fulltext	Use of Baricitinib?	<p>-> COVID-19 characterised by an overexuberant inflammatory response</p> <p>SARS -> viral load is not correlated with the worsening of symptoms</p> <p>-> Inhibition of numb-associated kinase (NAK) family would reduce viral infection in vitro (inhibit clathrin-mediated endocytosis and thereby inhibit viral infection of cells)</p> <p>-> 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</p> <p>-> Baricitinib is a NAK inhibitor (anti-viral)</p> <p>-> Baricitinib, fedratinib, and ruxolitinib are JAK inhibitors (anti-inflammatory)</p> <p>-> Baricitinib is the best of the group</p>
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 ?	<p>Little attention has been paid to the follow-up of recovered patients so far.</p> <p>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.</p>

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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
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 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
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-CoV. -> 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
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.
The Lancet 25FEB2020	Potential association between COVID-19 mortality and health-care resource availability	Ji et al., China https://www.thelancet.com/journals/lanlco/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 isolation and quarantine to maximise impact.

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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 resulting estimated epidemiological impact and predicted economic fallout .
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.
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 individuals.	- 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.
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

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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 findings in relation with time between symptom onset to initial CT scan	Frequency of CT findings is related to infection time course.
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/laninf/article/PIIS1473-3099(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
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.
THE NEJM, 19FEB2020	SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients	Zou et al, Ching 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 Chloroquine 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.

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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.
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.
Biochem Biophys 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/S006291X20303399	The receptor ACE-2: Where is it found (which organisms, which part of the organisms?) What does 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 the animal kingdom (possible hosts ?)</u> Since ACE2 is predominantly expressed in intestines, testis, and kidney, <u>fecal-oral</u> and <u>other routes</u> of transmission are also <u>possible</u> . 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.
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
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.
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 .

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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.
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.
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.