

9-10-2020

Covid-19 Clinical Update 9/10/2020

George Washington University

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COVID-19 UPDATE

HANA AKSELROD, MD, MPH

GW DIVISION OF INFECTIOUS DISEASES

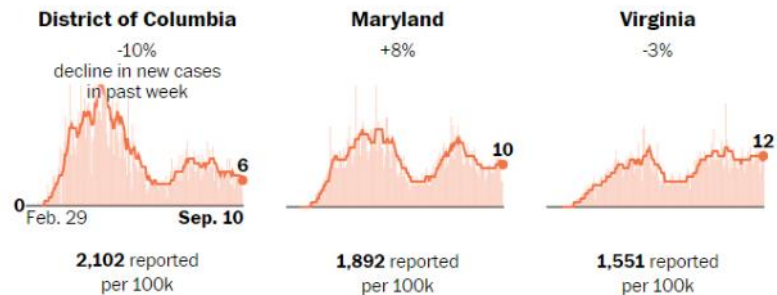
9/10/2020

1. EPIDEMIOLOGY

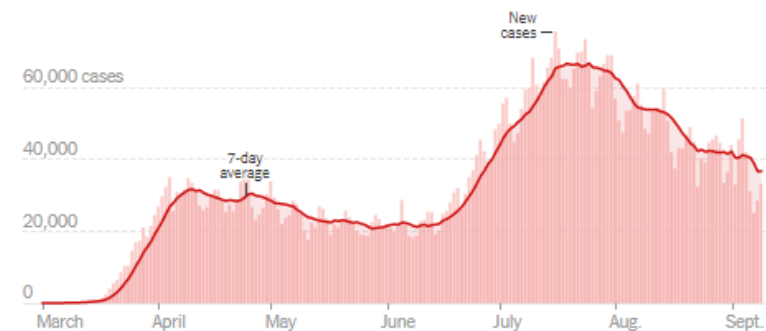
2. VACCINE

3. PATHOPHYSIOLOGY

4. GW UPDATES

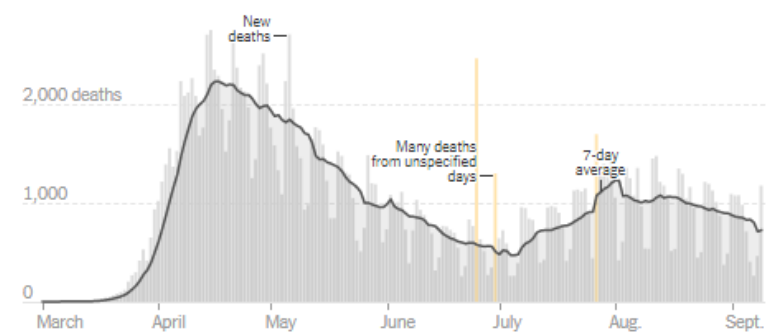


New reported cases by day in the United States

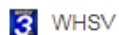


Note: The seven-day average is the average of a day and the previous six days of data.

New reported deaths by day in the United States



These are days with a data reporting anomaly. Read more [here](#).



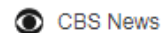
JMU seeks disciplinary action against over 100 students for not following COVID-19 guidelines

HARRISONBURG, Va. (WHSV) - James Madison University has reached over 1,000 positive COVID-19 cases. As of Sept. 7, 440 positive cases ...



A student learning campus housing at the University of North Carolina at Chapel Hill last month. (Associated Press/Reuters)

The virus moves off campus

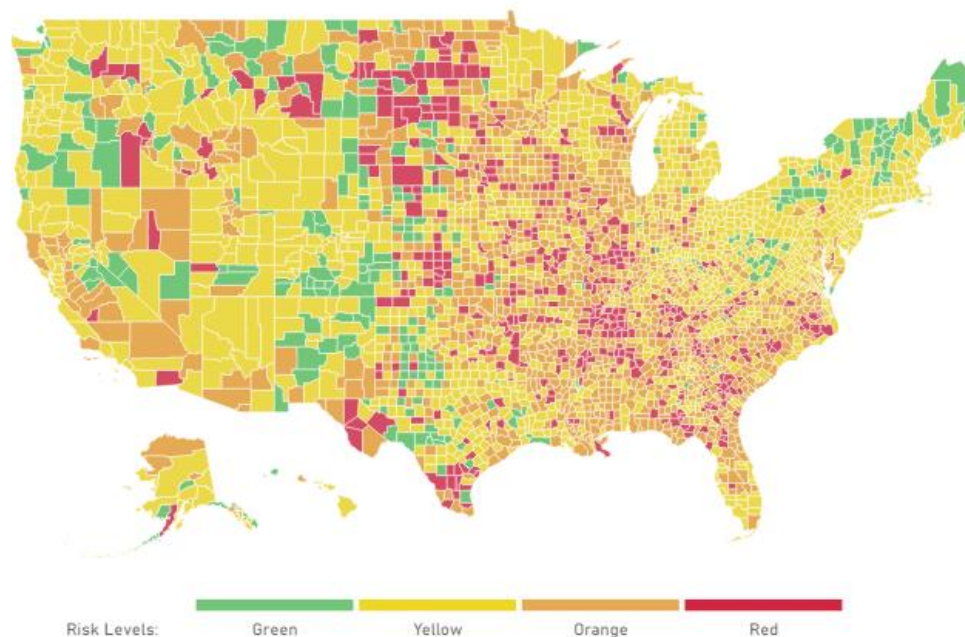


Illinois university quarantines entire student body due to coronavirus outbreak

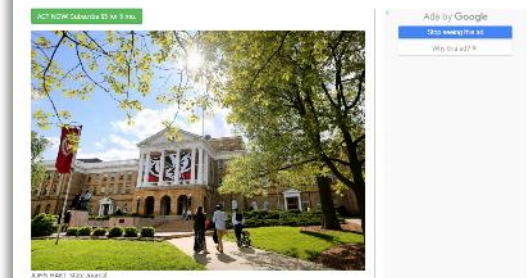
Dozens of cases crop up among thousands enrolled at Bradley University in Peoria, which is turning to remote learning for at least two weeks.



Northeastern is not the only school cracking down on students for partying



UW-Madison moves to all-online classes amid growing COVID-19 case count








SPUTNIK-V

ARTICLES | ONLINE FIRST

PDF [661 KB] Figures

Safety and immunogenicity of an rAd26 and rAd5 vector-based heterologous prime-boost COVID-19 vaccine in two formulations: two open, non-randomised phase 1/2 studies from Russia

Denis Y Logunov, DSc   · Inna V Dolzhikova, PhD   · Olga V Zubkova, PhD · Amir I Tukhvatullin, PhD
Dmitry V Shcheblyakov, PhD · Ailina S Dzharullaeva, MSc · et al. [Show all authors](#) · [Show footnotes](#)

Published: September 04, 2020 · DOI: [https://doi.org/10.1016/S0140-6736\(20\)31866-3](https://doi.org/10.1016/S0140-6736(20)31866-3)  Check for updates

- 76 participants in Phase I/II studies
- Gamaleya Institute in Moscow, funded by Russian Direct Investment Fund
- Phase III trials with 40,000 participants ongoing, vaccine released for use in Russia
- Recombinant adenovirus type 26 (rAd26) and type 5 (rAd5) vectors carrying gene for SARS-CoV-2 spike protein
- Reported strong positive antibody response through day 42 and good safety profile
- Data availability and validity in question

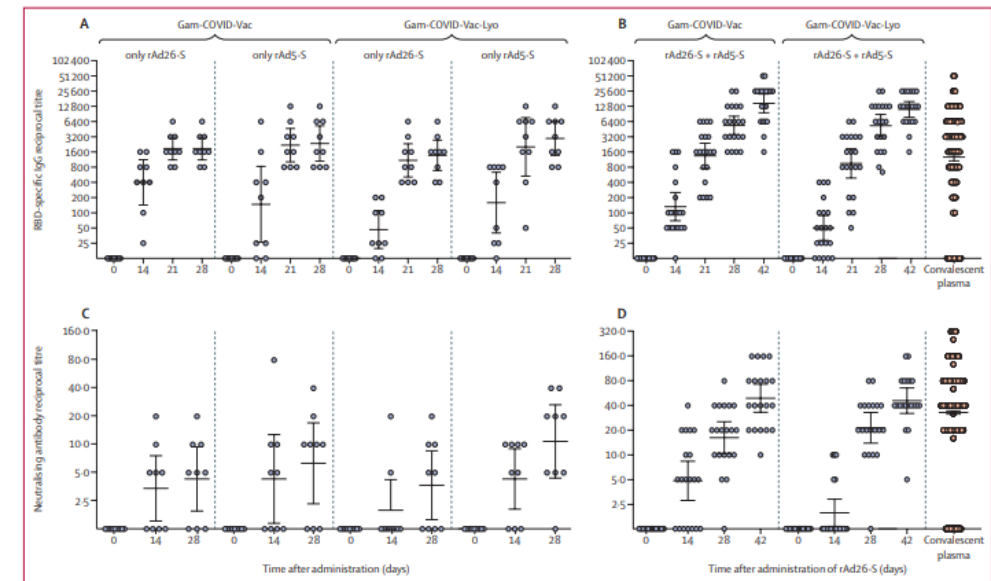


Figure 2: Humoral immune response

Data are geometric mean titres and 95% CIs. (A) RBD-specific antibodies on days 0, 14, 21, and 28, as measured by ELISA, in participants vaccinated with rAd26-S or rAd5-S only. (B) RBD-specific antibodies on days 0, 14, 21, 28, and 42, as measured by ELISA, in participants vaccinated with rAd26-S on day 0 and rAd5-S on day 21. (C) Neutralising antibodies on days 0, 14, 21, and 28, as measured by neutralisation assay with 100 TCID₅₀, in participants vaccinated with rAd26-S or rAd5-S only. (D) Neutralising antibodies on days 0, 14, 21, 28, and 42, as measured by microneutralisation assay with 100 TCID₅₀, in participants vaccinated with rAd26-S on day 0 and rAd5-S on day 21. RBD-specific IgGs and neutralising antibodies of in convalescent plasma are also shown in (B) and (D). Gam-COVID-Vac=frozen vaccine formulation. Gam-COVID-Vac-Lyo=lyophilised vaccine formulation. rAd26-S=recombinant adenovirus type 26 carrying the gene for SARS-CoV-2 full-length glycoprotein S. rAd5-S=recombinant adenovirus type 5 carrying the gene for SARS-CoV-2 full-length glycoprotein S. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. RBD=receptor-binding domain. TCID₅₀=50% tissue culture infective dose.

AstraZeneca

EXCLUSIVE

AstraZeneca Covid-19 vaccine study put on hold due to suspected adverse reaction in participant in the U.K.

By REBECCA ROBBINS @rebeccarobbins, ADAM FEUERSTEIN @adamfeuerstein, and HELEN BRANSWELL @HelenBranswell / SEPTEMBER 8, 2020

[Reprints](#)



EXCLUSIVE

Covid-19 vaccine trial participant had serious neurological symptoms, but could be discharged today, AstraZeneca CEO says

By ADAM FEUERSTEIN @adamfeuerstein / SEPTEMBER 9, 2020

[Reprints](#)



Case Report 7/2020

Article
TextArticle
info

Findings that shed new light on the possible pathogenesis of a disease or an adverse effect
Case report

Acute transverse myelitis in COVID-19 infection

 Chian Chiang Nicholas Chow¹, John Magnussen¹, Jerome Ip^{1,2} and  Yuen Su¹

- 60 yo M presented to hospital with bilateral lower limb weakness, urinary retention and constipation.
- Diagnosed with COVID-19 by SARS-CoV-2 RT-PCR ten days prior.
- Clinical examination revealed global weakness, increased tone, hyperreflexia and patchy paresthesia in his lower limbs bilaterally.
- Mildly elevated CRP and ESR, labs otherwise unremarkable.
- MRI demonstrated hyperintense T2 signal centrally from T7 to T10, suggestive of acute transverse myelitis.
- LP showed elevated protein count but normal glucose and white blood cell count. SARS-CoV-2 RT-PCR from NP swab and CSF was negative. Serology for SARS-CoV-2 c/w recent infection (IgM+ IgG+ IgA+). Testing for other viruses was negative.
- Neuro symptoms improved significantly after IV methylprednisone.

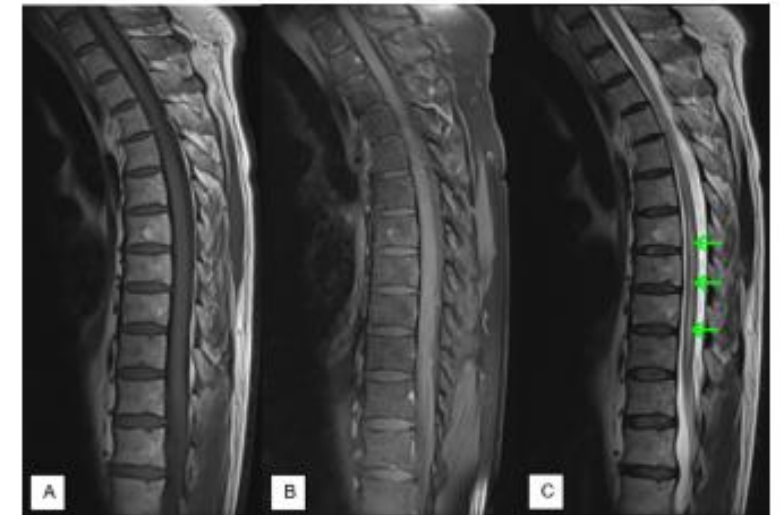


Figure 2 MRI of the patient's thoracic spine. (A) Sagittal T1 sequence of the thoracic spine. (B) Fat-saturated sagittal T1 sequence of the thoracic spine postintravenous gadolinium contrast. (C) Sagittal T2 sequence of the thoracic spine, demonstrating a long segment of T2 signal elevation centrally in the spinal cord from T7 to T10. No significant canal stenosis or paravertebral mass was observed.

Letters | 10 August 2020

Myasthenia Gravis Associated With SARS-CoV-2 Infection FREEDomenico A. Restivo, MD, PhD  Diego Centonze, MD,  Alessandro Alesina, MD  Rosario Marchese-Ragona, MD

Myasthenia?

- 64 yo M p/w fever to 39°C for 4 days, followed 5 days later by diplopia and muscular fatigability. CXR was normal, NP swab was positive for SARS-CoV-2 by RT-PCR. Serum AChR antibody elevated (22.8 pmol/L; NL <0.4 pmol/L). Improved on pyridostigmine + prednisone.
- 68 yo M with fever to 38.8 °C for 7 days, on day 7 developed general muscular fatigability, diplopia, and dysphagia. Chest CT scan was normal, NP swab RT-PCR positive for SARS-CoV-2. Nerve studies showed postsynaptic deficit of facial and ulnar nerves. Serum AChR antibody elevated (27.6 pmol/L). Improved on IVIG.
- 71 yo F with cough and fever to 38.6 °C for 6 days who received HCQ, on day 5 developed bilateral ocular ptosis, diplopia, and hypophonia, followed on day 6 by dysphagia and respiratory failure requiring ICU care. Chest CT revealed bilateral interstitial pneumonia. Initial NP swab RT-PCR for SARS-CoV-2 was negative but when repeated after 5 days it was positive. Nerve stimulation showed postsynaptic deficit of ulnar nerve and serum AChR antibody was elevated (35.6 pmol/L). Improved after plasmapheresis.
- Cross-reactivity of S protein and AChR antibodies? Or unmasking of subclinical MG?
- Short duration of illness prior to detection of relatively high AChR antibodies suggests the latter.

Neurology and COVID-19

Proposed mechanisms:

- Inflammatory neuronal damage
- Thrombotic cerebrovascular damage
- Antibody-mediated immunologic damage
- Neuropsychiatric damage and PTSD
- Direct neuroinvasion?
 - “In brain autopsy from patients who died of COVID-19, we detect SARS-CoV-2 in the cortical neurons, and note pathologic features associated with infection with minimal immune cell infiltrates”



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bioRxiv is receiving many new papers on coronavirus SARS-CoV-2. A reminder: these are preliminary reports that have not been peer reviewed, and should not be used to guide practice/health-related behavior, or be reported in news media as established information.

New Results

[Comments \(1\)](#)

Neuroinvasion of SARS-CoV-2 in human and mouse brain

[Eric Song](#), [Ce Zhang](#), [Benjamin Israelow](#), [Alice Lu-Culligan](#), [Alba Sprado](#), [Sophie Striban](#), [Peiwen Lu](#), [Orr-El Weizman](#), [Feimei Liu](#), [Yile Dai](#), [Klara Szigeti-Buck](#), [Yuki Yasumoto](#), [Guilin Wang](#), [Christopher Castaldi](#), [Jaime Heltke](#), [Evelyn Ng](#), [John Wheeler](#), [Mia Madel Alfajaro](#), [Etienne LEVAVASSEUR](#), [Benjamin Fontes](#), [Neal Ravindra](#), [David van Dijk](#), [Shrikant Mane](#), [Murat Gunel](#), [Aaron Ring](#), [Syed Kazmi](#), [Kai Zhang](#), [Craig B Wilen](#), [Tamas Horvath](#), [Isabelle Plu](#), [stephane Haik](#), [jean-leon thomas](#), [Angeliki LOUVI](#), [Shelli Farhadian](#), [Anita Huttner](#), [danielle seilhean](#), [Nicolas RENIER](#), [Kaya Bilguvar](#), [Akiko Iwasaki](#)

doi: <https://doi.org/10.1101/2020.06.25.169946>

GW Updates



- Moderna mRNA vaccine trial ongoing
- GW COVID-19 Intelligence Reports now monthly
<https://guides.himmelfarb.gwu.edu/SituationReport>
- Send us your COVID-19 publications and updates!