COVID-19 Update November 4, 2020

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Questions

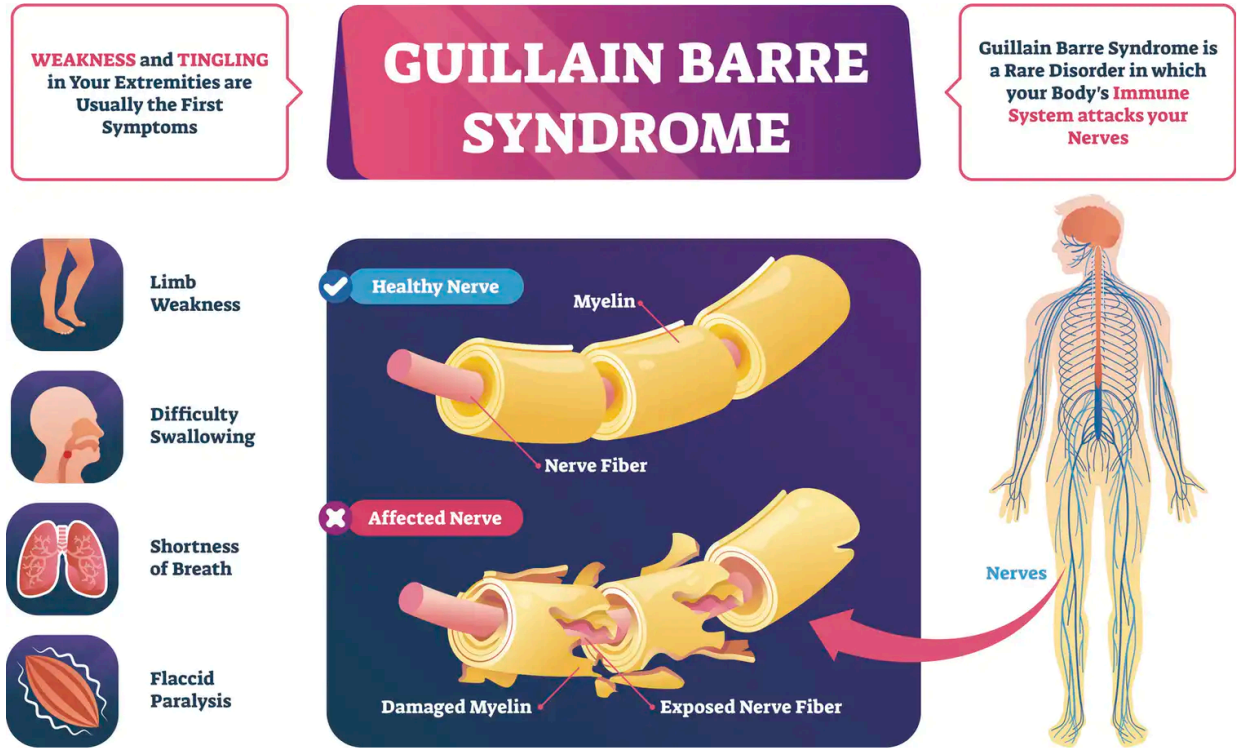
- Has anyone discussed Guillain-Barré syndrome with COVID-19? I know two people who have gotten this with COVID. it might be a future topic.

- Early on, quilt quality cotton was recommended for making masks (heavier, more tightly woven). Also, cotton was recommended over polyester or blends. Is this still good information? (My masks are 2-8 layers, depending on the folds.)

- I have lots of questions about vaccines and long term effects. We're hearing about an increase in autoimmune disorders after healing from COVID

Guillain Barre Syndrome

- It is the most common cause of acute flaccid paralysis
- The classic form is an immune-mediated acute inflammatory demyelinating polyneuropathy (AIDP)
- Typically presenting with
  - Ascending weakness
  - Loss of deep tendon reflexes
  - Sensory deficits



Guillain-Barre Syndrome is an autoimmune illness that occurs when antibodies attack the nerves. This causes weakness and abnormal sensations such as tingling or numbness. VectorMine / Getty Images

Guillain–Barré syndrome spectrum associated with COVID-19: an up-to-date systematic review of 73 cases

Clinical Spectrum of GBS

- The classic sensorimotor form
- Miller Fisher syndrome (MFS)
- Bilateral facial palsy with paresthesia
- Pure motor
- Pure sensory
- Paraparetic
- Pharyngeal–cervical–brachial variants
- Polyneuritis cranialis (GBS–MFS overlap)
- Bickerstaf brainstem encephalitis

Diagnosis

- Clinical presentation
- Electrophysiology
- Cerebrospinal fluid (CSF) examinations
  - Classically albumin-cytological dissociation

Guillain Barre Syndrome: Pathogenesis and Etiology

- **Pathogenesis**:
  - Peripheral nerve damage provoked by an aberrant immune response to infections, in some cases driven by the production of autoreactive antibodies (anti-ganglioside antibodies)

- **Potential triggering pathogens include**:
  - Virus
    - CMV, Epstein–Barr virus (EBV), influenza virus, hepatitis E virus, and Zika virus
  - Bacteria
    - Campylobacter Jejuni, Mycoplasma Pneumoniae
  - Other events
    - Vaccinations, surgery, and malignancy.

Guillain–Barré syndrome spectrum associated with COVID-19: an up-to-date systematic review of 73 cases

Journal of Neurology https://doi.org/10.1007/s00415-020-10124-x

- **Methods**
  - Systematic review of all GB presentations and COVID-19
  - Search restricted to
    - Studies published in English, Spanish, or Italian
    - Pear-reviewed publications
- **Results**
  - 101 papers identified,
    - A total of 52 studies were included in the final analysis (total patients=73).
  - Demographics
    - The mean age at onset was **55**±17 years (11–94)
    - **Predominance of men** compared to women (68.5% vs. 31.5%)
    - Comorbidities were variably reported with no prevalence of a particular disease.

Guillain–Barré syndrome spectrum associated with COVID-19: an up-to-date systematic review of 73 cases

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- All reported GBS cases (n=72) except two were symptomatic for COVID-19
  - 40 patients had a typical “ground glass” aspects or interstitial pneumonia at chest imaging (CT/MRI/Xray)
- The majority (66 patients) had a SARS-CoV-2 RT-PCR positive
- The other 6 patients tested positive at SARS-CoV-2 serology.
- In 68 patients, GBS manifestations developed after those of COVID-19
  - Median of 14 (2–33 days).
- In the other 4 patients
  - COVID-19 symptoms began concurrent (1 case), after GBS (2 cases) or never (1case).

Clinical Presentation and Diagnosis:

- Most patients presented with a classic sensorimotor variant (70.0%)
- Most patients (81.8%) fulfilled electrophysiological criteria for AIDP
- The diagnosis was established based on
  - Clinical, CSF, and electrophysiological findings in 44/73 (**60.3%**) patients
  - Clinical, and electrophysiological data in 18/73 (24.7%) patients
  - Clinical, and CSF data in 8/73 (11.0%) patients
  - Clinical findings only in 3/73 (4.1%) patients

Treatment and Outcome

- **Treatment**
  - Most cases (60) were treated with intravenous immunoglobulin (IVIG).
  - Another 10 cases received plasma exchange and steroid therapy
  - In two patients, no therapy was given.
- **Outcome**
  - 72.1% (49/68) patients demonstrated clinical improvement
  - 10.3% (7/68) cases showed no improvement
  - 11.8% (8/68) still required critical care treatment
  - 5.8% (4/68) died
- Patients with no improvement or poor outcome (n=19) were more likely to
    - Be significantly older (mean 62.7 ± 17.8 years, $p = 0.011$)
    - COVID-19 pneumonia (14/19, 73.7%. $p = 0.541$).

Peripheral Oxygen Saturation in Older Persons Wearing Nonmedical Face Masks in Community Settings

JAMA. Published online October 30, 2020. doi:10.1001/jama.2020.21905

- **Methods**
  - Participants self-measured peripheral oxygen saturation (SpO_2) before, while, and after wearing a mask.
  - Individuals aged 65 years or older were included
  - Individuals who's comorbid conditions could lead to dyspnea or hypoxia at rest or who were unable to remove the mask without assistance were excluded
  - Participants were:
    - Provided with a 3-layer plane-shaped disposable nonmedical face mask with ear loops and a portable pulse oximeter
    - Were instructed to self-monitor and record SpO_2 3 times 20 minutes apart for 1 hour before, 1 hour while, and 1 hour after wearing the mask while they were at rest or performing usual activities of daily living at home
- **Outcome:** decrease of 2% or more in SpO_2

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- **Results**
  - Twenty-five people were enrolled
    - Mean age, 76.5 years [SD, 6.1 years]
    - 48% were women
    - 36% had at least 1 medical comorbidity.
  - The pooled mean SpO_2 was 96.1% before, 96.5% while, and 96.3% after wearing the mask
  - None of the participants' SpO_2 fell below 92% while wearing masks.
- Conclusions:
  - In this small study, wearing a 3-layer nonmedical face mask was not associated with a decline in oxygen saturation in older participants.

Aspirin Use is Associated with Decreased Mechanical Ventilation, ICU Admission, and In Hospital Mortality in Hospitalized Patients with COVID-19

Anesthesia & Analgesia Journal 2020

- **Background:**
  - Coronavirus disease-2019 (COVID-19) is associated with hypercoagulability and increased thrombotic risk in critically ill patients.
- **Methods:**
  - A retrospective, observational cohort study of adult patients admitted with
  - The primary outcome was the need for mechanical ventilation.
  - Secondary outcomes were ICU admission and in-hospital mortality.
- **Results:**
  - Four hundred twelve patients were included in the study.
  - Three hundred fourteen patients (76.3%) did not receive aspirin, while 98 patients (23.7%) received aspirin within 24 hours of admission or 7 days prior to admission.

Aspirin Use is Associated with Decreased Mechanical Ventilation, ICU Admission, and In Hospital Mortality in Hospitalized Patients with COVID-19

Anesthesia & Analgesia Journal 2020

- **Results:**
  - After adjusting for 8 confounding variables, aspirin use was independently associated with:
    - Decreased risk of mechanical ventilation (adjusted HR 0.56, 95% CI 0.37-0.85, p=0.007),
    - Decreased ICU admission (adjusted HR 0.57, 95% CI 0.38-0.85, p=0.005)
    - Decreased in-hospital mortality (adjusted HR 0.53, 95% CI 0.31-0.90, p=0.02).
    - There were no differences in major bleeding (p=0.69) or overt thrombosis (p=0.82) between aspirin users and non-aspirin users.

- **Conclusions:**
  - Aspirin use may be associated with improved outcomes in hospitalized COVID19 patients. However, a sufficiently powered randomized controlled trial is needed to assess whether a causal relationship exists between aspirin use and reduced lung injury and mortality in COVID-19 patient

The Disappearance of the Primary Care Physical Examination—Losing Touch

Paul Hyman *JAMA Intern Med.* 2020;180(11):1417-1418.

"The quiet moments when I am listening to a patient's heartbeat and breath can be centering, similar to the part of a meditation where one refocuses on one's own breathing…….only now have I come to recognize the examination as a ritual that is restorative and brings me calmness and confidence."

"With telehealth, I can see patients in their home environments, which often provides me with new information on factors that influence their health behaviors. Virtual visits respect a patient's time. And, of course, in this pandemic when social distancing is so important, telehealth keeps patients safe."

The Disappearance of the Primary Care Physical Examination—Losing Touch

"While I am sympathetic to this rationale and recognize the benefits of telehealth, I struggle to find equipoise.

In attempting to keep patients at a distance, I am losing touch with a part of my professional identity."

Paul Hyman *JAMA Intern Med.* 2020;180(11):1417-1418.