



Trends &
Technology

5

Meet Your 2021
ASA Officers!

8

ANESTHESIOLOGY® 2021
Submit Your Work!

16



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In the Know

Long-Term Effects of SARS-CoV-2 in 'Long-Haulers'

Richard Simoneaux

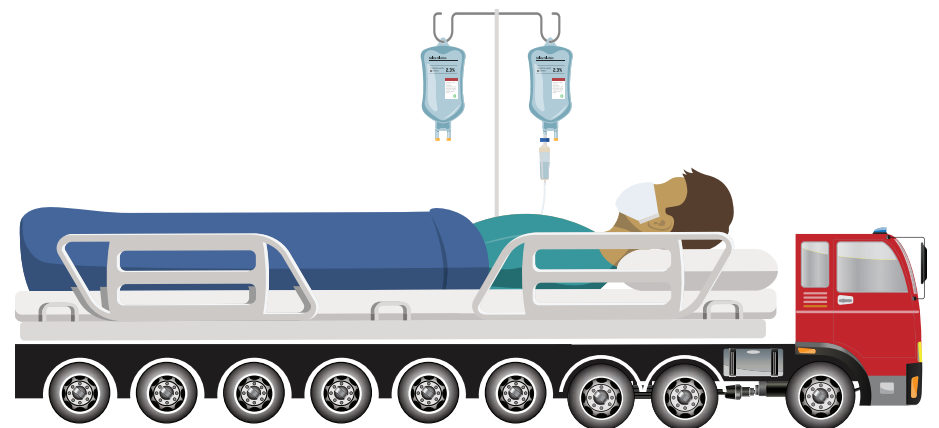
Steven L. Shafer, MD
Editor-in-Chief

Although many patients with COVID-19 recover from the initial infection, a significant number suffer long-term effects consisting of an array of different symptoms. According to the CDC, some of the most frequently reported long-term effects of COVID-19 include fatigue, dyspnea, chest pain, cough, and joint pain (asamonitor.pub/21QmCU2). Other common symptoms are: headaches, difficulty thinking or concentrating (sometimes colloquially referred to as “brain

fog”), depression, intermittent fevers, tachycardia, and muscle aches.

MMWR report

A July 2020 report in the MMWR detailed results from a telephone survey among patients having a positive first reverse transcription polymerase chain reaction (MMWR Morb Mortal Wkly Rep. 2020;69:993-8). The telephone survey, which was conducted between April 15, 2020, and June 25, 2020, among adults 18 years or older, 14-21 days after testing,



included questions about demographics, baseline medical conditions, and symptoms/state of health at time of interview.

Of the 292 responders to this survey, a vast majority (94%) reported one or more

symptoms at testing, and of these, more than one-third (35%) stated that they had not returned to their usual state of health by the survey date (a median 16 days post-

Continued on page 4

Final ASA Survey Results: Top Career Concerns

Catlin Nalley

In July, ASA Monitor conducted an email survey that polled readers on their top perceived challenges facing today's anesthesiology profession. You shared your greatest concerns regarding various topics and offered some innovative solutions to those challenges.

This final article in a four-part series dissecting the survey results focuses on readers' key career concerns. With a work environment that is often high-stress and extremely

demanding, anesthesiologists face a number of career-related challenges on a daily basis. At the top of that list, according to a recent ASA Monitor survey, are non-physician scope of practice, burnout/work-life balance, and negotiating contracts.

Non-physician scope of practice

As the discussion regarding non-physician scope of practice continues, anesthesiol-

Continued on page 14



Residents'
Review

Assisting Asylum Seekers: The Unique Expertise of Anesthesiologists

Andrew R. Milewski, MD, PhD

The numerous scars marking his arms, legs, back, chest, and face told the story of the horrific, state-sponsored torture that Mr. A had endured. Mr. A, a 25-year-old man from a small country in West Africa, was persecuted because his HIV/AIDS advocacy contradicted a false “presidential cure” contrived by the ruling regime. On multiple occasions, military police detained Mr. A in a squalid prison where they beat him with metal cables, wooden rods, and plastic clubs; battered him with the butts of their AK-47 rifles; threatened to feed him to the president's crocodiles; simulated drowning by forcibly holding his head underwater; chained his wrists and ankles for hours on end; deprived him

of food and water for days at a time; and stripped away his dignity through a variety of other tactics.

Each year, tens of thousands of individuals like Mr. A flee their home countries to seek asylum in the United States (asamonitor.pub/3INpzCx). To prevail in their asylum claims, applicants must demonstrate that they have been persecuted or have a well-founded fear of persecution based on their race, religion, nationality, political opinions, or membership in particular social groups (e.g., LGBTQ). Whereas individuals indicted for a crime are innocent until proven guilty, asylum applicants bear the burden of collecting evidence that proves their claims. The scars that asylum

Continued on page 7



SPECIAL SECTION

Serving the Health Care Needs
of Vulnerable Populations 18-26

Guest Editor: Gunisha Kaur, MD, MA

PERIODICALS

In the Know
Continued from page 1

testing). The age distribution for these patients who had not returned to normal health was as follows: 50 years or older, 47%; 35-49 years, 32%; 18-34 years, 26%. Of the 274 symptomatic responders in the survey, the median number of symptoms displayed was seven (17 were listed in the interview questionnaire). The most commonly reported were: fatigue (71%), headache (61%), and cough (61%). Among respondents who had not returned to normal health, the symptoms least likely to have resolved included: cough (43%), fatigue (35%), and dyspnea (29%).

Adjusted odds ratios were presented for several potential risk factors, such as age, existing co-morbidities and other medical factors. (See Table 1.)

Emergency medicine physician ‘long-hauler’

In a recent JAMA opinion article, Jeffrey N. Siegelman, MD, an emergency medicine physician at Emory University School of Medicine, Department of Emergency Medicine, described his case of COVID-19 and the ensuing long-term effects he experienced (JAMA 2020;324:2031-2). His initial symptoms included sequentially: headache, fever, and loss of taste. Even though his case was considered mild, having mild respiratory symptoms and not requiring hospitalization, he describes the effects as “anything but mild.” Because of persistent, low-grade fevers, he remained quarantined from his family in his basement for a period of 40 days.

What was especially perplexing in his case was the array of diagnostics which indicated he should feel “normal,” such as a negative nasopharyngeal swab for SARS-CoV-2, adequate oxygen saturation, which told him that he was cured. Yet despite reassuring laboratory tests, in his words, he suffered from a “rotating constellation of symptoms, different each day and worse each evening: fever, headache, dizziness, palpitations, tachycardia, and other symptoms.” What he learned from his own experience with “long-haul” COVID-19 was “the need to listen to the patient first, even in the absence of conclusive testing.”

32-year-old female ‘long-hauler’

A recent news article in JAMA described Hanna Lockman of Louisville, Kentucky,

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| Table 1: Characteristics Associated With Not Returning to Usual Health | | |
|--|---------------------|-------------------------|
| Factor | Adjusted Odds Ratio | 95% Confidence Interval |
| Age (≥50 years vs. 18-34 years) | 2.29 | 1.14-4.58 |
| Chronic Medical Conditions (≥3 vs. 0) | 2.29 | 1.07-4.90 |
| Obesity (BMI ≥30 kg/m ²) | 2.31 | 1.21-4.42 |
| Reported a Psychiatric Condition | 2.32 | 1.17-4.58 |

| Table 2: Hazard Ratios for First Psychiatric Diagnosis for COVID-19 (14-90 Days Post-diagnosis) Compared to 6 Other Medical Events | | | |
|--|--------------|-------------------------|----------|
| Factor | Hazard Ratio | 95% Confidence Interval | P-value |
| COVID-19 vs. influenza | 2.1 | 1.8-2.5 | P<0.0001 |
| COVID-19 vs. other respiratory tract infection | 1.7 | 1.5-1.9 | P<0.0001 |
| COVID-19 vs. skin infection | 1.6 | 1.4-1.9 | P<0.0001 |
| COVID-19 vs. cholelithiasis | 1.6 | 1.3-1.9 | P<0.0001 |
| COVID-19 vs. urolithiasis | 2.2 | 1.9-2.6 | P<0.0001 |
| COVID-19 vs. large bone fracture | 2.1 | 1.9-2.5 | P<0.0001 |

a 32-year-old “long-hauler” who presented with COVID-19 in March, 2020. (JAMA 2020;324:1381-3). Ms. Lockwood seemingly recovered, but nevertheless had 16 emergency room visits and an additional three short-term hospitalizations within 5 months of her initial presentation. As JAMA reported:

“I joke, ‘Well, COVID has eaten my brain, because I can’t remember how to remember words, keep track of medication,’” she said. “My brain just feels like there’s a fog.”

The JAMA report goes on to document that many “long-haulers” seen early in the pandemic were health care workers who had massive viral exposure early in the epidemic or those who spent several weeks intubated in intensive care. However, more recently the presentation has changed, and now most “long-haulers” are patients who initially had mild-to-moderate symptoms requiring little or no hospitalization.

Another potential issue for female patients is the potential gender bias that they are more prone to be perceived as dramatic and not believed when they report vague symptoms for which there is no direct diagnostic evidence for. As described by Ms. Lockman, “We’ve experienced so much medical gaslighting, basically doctors telling us, ‘That’s not what you have. It’s just anxiety.’” Ms. Lockwood feels she is improving but remains concerned. “I definitely feel better than I did a month ago, but I still wake up not knowing what I’m going to deal with today.”

Neurological symptoms

In a recent review, two researchers from the University of Brescia, Italy, describe neurological symptoms present in the bur-

geoning COVID-19 literature (Nat Rev Neurol 2020;16:636-44). The authors pose a serious question about the neurological symptoms displayed by patients with COVID-19: Are these neurological symptoms a direct result of SARS-CoV-2 infection or are they complications arising from critical illness? If SARS-CoV-2 does is directly responsible for these neurologic sequelae, does SARS-CoV-2 directly damage the nervous system, or are the symptoms a manifestation of parainfectious mechanisms, such as inflammation-related processes?

The authors divided the neurological symptoms into three distinct groups, differing in their presumptive mechanism:

1. Neurological symptoms issues arising from pulmonary and associated systemic diseases, such as sepsis, inflammation, multi-organ failure (e.g., encephalopathy or stroke)
2. Neurological symptoms arising from post-infection immune system-mediated complications (e.g., Guillain-Barré syndrome, acute disseminated encephalomyelitis)
3. Neurological symptoms arising as a direct result of CNS invasion by SARS-CoV-2 (e.g., encephalitis. The researchers conclude that SARS-CoV-2 is likely responsible for many of this group of neurological symptoms.

A recent online article from Lancet Psychiatry detailed anonymized data obtained from 62,354 U.S.-based patients diagnosed with COVID-19 between January 20 and August 1, 2020 (Lancet Psychiatry November 2020). In this retrospective study, the Oxford University-based authors assessed the incidence and determined hazard ratios for psychiatric disorders, dementia, and insomnia for the first 14 to 90 days after COVID-19 diagno-

sis. For patients without a prior psychiatric diagnosis, hazard ratios were calculated for COVID-19 (14-90 days post-diagnosis) compared with six other medical events. (See Table 2).

The authors note that with COVID-19, the greatest hazard ratio values obtained were for anxiety disorders, insomnia, and dementia. A total of 18.1% of patients (95% CI: 17.6%-18.6%) received one or more psychiatric diagnoses 14 to 90 days after COVID-19 diagnosis. For 5.8% (95% CI: 5.2%-6.4%) of those diagnosed with COVID-19, this was their first psychiatric diagnosis.

The authors also reported a higher incidence of COVID-19 diagnosis if there was a psychiatric diagnosis in the previous year (relative risk: 1.65; 95% CI: 1.59%-1.71%; P<0.0001). This risk was considered by the authors to be “independent of known physical health risk factors for COVID-19,” although they could not exclude possible confounding by socioeconomic factors.

The Oxford-based authors conclude that “Survivors of COVID-19 appear to be at increased risk of psychiatric sequelae, and a psychiatric diagnosis might be an independent risk factor for COVID-19.” They further acknowledge that their findings, although preliminary, have implications for clinical services.

Conclusions

In their conclusions, the MMWR study authors note that their findings “have important implications for understanding the full effects of COVID-19, even in persons with milder outpatient illness.” They also note that post-COVID diagnosis convalescence can be quite extensive, even in those populations who might not consider themselves to be at great risk from this disease (e.g., young adults or those with no chronic medical conditions).

As a result of this potential risk, the authors recommend that “Public health messaging should target populations that might not perceive COVID-19 illness as being severe or prolonged, including young adults and those without chronic underlying medical conditions. Preventative measures, including social distancing, frequent handwashing, and the consistent and correct use of face coverings in public, should be strongly encouraged to slow the spread of SARS-CoV-2.”

As the time of this writing (December 2020), COVID-19 has become the leading cause of death in the United States. While current efforts are focused on reducing COVID-19 spread and quickly ramping up vaccination, “long-haul” COVID-19 will affect hundreds of thousands of patients with this newly recognized and poorly understood illness in the years ahead. ■