



Tuning In:

Patients with Pituitary Disease and COVID-19

Endocrine News tuned into a *Pituitary World News* podcast to hear two neuroendocrinologists discuss treatment options for COVID-19 patients with underlying pituitary conditions.

BY KELLY HORVATH

The ongoing COVID-19 pandemic brings an unprecedented kind of challenge to both patients and healthcare personnel. Patients with complex endocrine disorders are already shouldering the heavy burden of trying to self-educate to understand and better manage their disease.

With the extremely contagious coronavirus circulating, these patients have additional concerns about their particular susceptibility; whether their treatments need to change and, if so, how; and what to do if they become infected with COVID-19. But how do clinicians advise patients about a disease we still know very little about?

In a recent *Pituitary World News (PWN)* podcast, neuroendocrinologists and specialists in pituitary diseases Lewis Blevins, MD, medical director of the California Center for Pituitary Disorders at the University of California, San Francisco, and *PWN* cofounder, and Kevin Yuen, MD, medical director of the Barrow Pituitary Center at the Barrow Neurological Institute, in Phoenix, Ariz., came together to provide some answers to these critical questions, emphasizing that there's still much to be investigated and learned.

As Blevins explains, “the podcast came about because Yuen wanted an efficient way for patients to get their questions answered. Instead of him answering the same questions over and over, he wished to direct his patients to a podcast. He and I are friends, and, both being pituitary experts, we run in the

same medical circles. We had accomplished a successful podcast together and decided to do another on this topic. It's clear that podcasts provide a means of educating a lot of people about one topic."

"This pandemic is causing a lot of anxiety, and generally the more 'well-known' diseases like hypertension and diabetes get a lot of publicity, whereas pituitary patients who are also susceptible to infections may feel left behind. I personally wanted to do this [podcast] to provide some guidance to my pituitary patients," Yuen says. "I want to let them know that they are not forgotten and hopefully give them some tips on how to optimally manage their condition during these stressful times as well as perhaps some hope." PWN's other cofounder as well as chairman and CEO, Jorge Faccinetti, facilitated their discussion.

What Patients Are More Susceptible to Infection?

According to Yuen, patients with poorly controlled diabetes, hypertension, obesity, sleep apnea, severe adrenal insufficiency, high levels of cortisol (e.g., severe Cushing syndrome), and those on high-dose steroids — in other words, patients who probably have some form of immunosuppression — may be more susceptible to developing COVID-19 infection, as they are with any other infections.

Blevins agreed that the morbidity associated with those conditions could increase susceptibility, but we don't know for certain yet. However, given the extreme infectivity of this virus, he raised the possibility that these patients may not actually be more susceptible per se, but they are likely to do more poorly if infected than would an otherwise healthy patient. Susceptibility may be more a function of the degree to which a patient expresses the angiotensin-converting enzyme-2 (ACE2) receptor that the virus binds to in the lungs and also possibly whether the lineage of the virus contracted binds with lesser or greater affinity to the receptor.

COVID-19 and Adrenal Insufficiency or Cushing Syndrome

Yuen stated that patients with severe adrenal insufficiency, in general, are more prone to develop infections. Their concomitant electrolyte imbalances are exacerbated by infection, causing dehydration, which, in turn, can propagate an adrenal crisis.

According to Blevins, the risk is compounded by the fact

“Patients with adrenal insufficiency who become ill are going to require careful adjustments in steroid therapy,” he says. **“As we explained in the podcast, that’s why we give stress-dose steroids for illness and infection in these patients anyway, so you have to make sure that you do that in the setting of adrenal insufficiency and COVID-19 or you get a potentially fatal cytokine storm.”**

— LEWIS BLEVINS, MD, MEDICAL DIRECTOR, CALIFORNIA CENTER FOR PITUITARY DISORDERS, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, CALIF.

“

This pandemic is causing a lot of anxiety, and generally the more ‘well-known’ diseases like hypertension and diabetes get a lot of publicity, **whereas pituitary patients who are also susceptible to infections may feel left behind** I personally wanted to do this [podcast] to provide some **guidance to my pituitary patients.”**

— KEVIN YUEN, MD, MEDICAL DIRECTOR, BARROW PITUITARY CENTER AT THE BARROW NEUROLOGICAL INSTITUTE, PHOENIX, ARIZ.



that if these patients don't make the appropriate increase in glucocorticoid supplementation early enough, they can become rapidly overwhelmed by COVID-19. “Patients with adrenal insufficiency who become ill are going to require careful adjustments in steroid therapy,” he says. “As we explained in the podcast, that's why we give stress-dose steroids for illness and infection in these patients anyway, so you have to make sure that you do that in the setting of adrenal insufficiency and COVID-19 or you get a potentially fatal cytokine storm.” One of the reasons for stress dosing is to modulate the effects of such immune system hyperactivity.

Yuen advised patients to be very cognizant of how they are feeling and to maintain a low threshold to stress dose with doubling or tripling the normal amounts of glucocorticoids they take, especially if high fever is present. That amount should be maintained until symptoms start to subside. However, there is a danger of potential immunosuppression if patients overdo it for too long to prevent problems from excess steroid administration.

“It's a balancing act with these patients and with patients with

Pituitary World News

To tune into the podcast, “Critical COVID-19 Information for Pituitary Patients,” go to the *Pituitary World News* site at: www.pituitaryworldnews.org

Cushing syndrome,” agreed Blevins. It may seem counterintuitive to give more steroids to a patient with excess steroid production, but they could otherwise be unable to mount an adequate response to infection.

By definition, these patients are hypercortisolemic, explained Yuen. First-line treatment is surgery, but because many elective surgeries are being deferred during this pandemic, appropriate medical treatment should be the first line to reduce cortisol levels and keep these patients in eucortisolemic range, or to reduce cortisol action.

But what if a patient on one of these medications such as mifepristone develops COVID-19? Yuen believes these patients need to be well educated on this issue. They should stop the mifepristone immediately and replace it with levels of steroid even higher than stress doses to ward off a cytokine storm, which would be in the form of dexamethasone, and seek medical attention early.

Patients in Quarantine

Blevins advises quarantined patients to call their clinicians to get medication instruction and then figure out where to get tested to find out whether they actually have COVID-19. These patients should work with their clinicians to determine whether they can and should stay home, or if they instead need hospitalization. He also favors social distancing and sheltering at home to prevent the spread.

Yuen added that if patients have already been tested, they should assume that they are COVID-19 positive until proven otherwise so they don't unwittingly infect others.

Final Thoughts

“It may be that genetics is behind all of this and that we'll learn through the process of getting through this illness that that's the case,” Blevins said. “It's speculative at best, but we need to try to understand what's going on.” In the meantime, clinicians can direct their patients with pituitary disease to the podcast to get some interim advice from the experts, rather than attempt to sift through the abundance of misinformation online. “What we're trying to do on *PWN* and with that podcast is to help patients and their physicians understand how we as experts are understanding how this coronavirus infects people and the risk factors and poor outcomes — how do we really fit this into the practice of pituitary endocrinology?” Blevins says.

“Doing the podcast was a great way to share my experience with another esteemed colleague and to likewise learn from his experience,” Yuen says. “We are all trying to do the best for our patients. Ultimately, we should pay close attention to our patients' concerns and symptoms as well as advise them not to take their symptoms lightly during this pandemic, to manage their diabetes and adrenal insufficiency optimally, and to seek medical help expeditiously if they are in doubt of what they are doing.” **EN**

— HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD., AND A FREQUENT CONTRIBUTOR TO *ENDOCRINE NEWS*. SHE WROTE ABOUT THE **ENDO ONLINE 2020** SESSION, “THE YEAR IN PITUITARY” IN THE MAY ISSUE.



AT A GLANCE

- ▶ A recent podcast conducted by two neuroendocrinologists delved into treatment options for COVID-19 patients with underlying pituitary issues.
- ▶ Patients with adrenal insufficiency who develop COVID-19 infection require stress-dose steroids to prevent a potentially fatal cytokine storm.
- ▶ Despite having endogenous high levels of stress hormones, patients with even mild Cushing syndrome who develop COVID-19 infection may also require stress-dose steroids in order to be able to mount the appropriate immune response.