

Speaker 1: [00:01](#) Quality Improvement in the Time of COVID is brought to you by the American Heart Association, with support from Novartis Pharmaceuticals. As physicians, scientists, and researchers worldwide struggle to understand the COVID pandemic, the American Heart Association has developed its COVID Registry, powered by Get With The Guidelines, to aggregate data and aid research on the disease, treatment protocols and institutions in the US. And for registries like the Get With The Guidelines Stroke registry, that registers such a proportion of the strokes that occur in US hospitals.

They also offer the opportunity to actually serve as a surveillance registry, so that you can really track what's happening with stroke care in large proportion of patients with stroke in the US. And that can really be advantageous when you're trying to think about, well, how did the pandemic affect stroke care in general? And even more specifically, for example, how the pandemic might affect



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other areas. So there has been a lot of interest as to whether COVID patients may have higher risks of ischemic stroke.

Sandy Doss: [07:25](#)

Thanks. So there's two interesting comparative groups. One is people with, versus without, COVID that presented to the hospital with stroke, and the second interesting comparison is people who presented with stroke the pre- versus post COVID era. Taking either one of those groups or populations on is at your choice. Can you tell us a little bit about the effect of COVID on the timing of time-sensitive treatments, either diagnostic procedures, like CTEs or ~~done~~ needle or endovascular therapies?

James de Lemos: [07:54](#)

Well, yeah, maybe first I'll talk about the time course analysis. So what the team did first is looked at all the strokes that occurred in 2019, over the period from February to April or May time period, and then looked again during the first COVID year, and simply to ask the question, were the rates of reported stroke different and were the timeliness metrics different? And what we're seeing, and these are huge numbers, because this Get With The Guidelines- Stroke Registry, like I mentioned, records a huge proportion of US strokes, but it was 40,000 patients in 2019 and 40,000 patients in 2020.

And what they saw was a lower rates of stroke presentations during the 6 (i)-3.3 (n)-160.6 8ui

But I think the impressive thing for the neurologic community is that overall timeliness metrics, the things that we measure to look at the quality of stroke care, things like how long it takes to get the CAT scan, how long it takes to deliver TPA or endovascular treatments, were really minimally impacted. The only thing the COVID, the door-endovascular treatment time was slightly longer, but really, only by about four minutes, which I think I have to credit all the hospitals that are

of. But it's important to remember that most of the strokes and the vast majority of the heart attacks that occurred, even in our terrible year of COVID, occurred in patients without COVID.

But, like I said, about two percent of the strokes occurred in COVID-positive patients. Those patients were younger, they were a little bit more likely to be Hispanic or non-Hispanic black or more ethnic minorities had COVID-related strokes than non-COVID strokes. Which, I think, almost certainly is explained by the much higher proportion of black and Hispanic individuals that have had COVID and COVID requiring hospitalization.

And then there were some important differences in the strokes that occurred with COVID. One of the big ones is that a much larger percentage of the strokes with COVID occurred in the hospital, really in the setting of a known COVID infection. So 90... of the non-COVID strokes occurred outside of the healthcare setting, only 70% of the COVID strokes, meaning 30% of them either occurred during the hospitalization or in some kind of chronic care facility. Suggesting the point that you brought up earlier, the possibility that COVID itself and the thrombotic milieu with COVID may have contributed.

patients being critically ill and potentially isolated. I think we should keep in mind that there are indirect effects of isolation, whether it's in the hospital or at home, that may have contributed to delays in diagnosis of symptoms and signs that are not directly related to COVID.

Sandy Doss: [14:48](#)

Yeah, I think that's a great point. I mean, I think by and large, the nurses have been heroic, but nursing contact with patients has been, would have necessarily had to be down compared to what it normally would be. And we, for a very long time, had no family in the rooms, et cetera. So it's quite possible that something bad would happen and it would take a little while for us to even alert to it. So I totally get that that may have also been associated with increased severity. So what did we learn from our stroke COVID experience, either good or bad, with respect to systems of care, systems of stroke care?

James de Lemos: [15:22](#)

Well, not surprisingly, the timeliness metrics, how long it takes to get the CT scan, how long it takes to get TPA and endovascular treatment, were longer in strokes accompanied with COVID-19, which obviously, reflects the extra precautions necessary to prepare the environment, and the medical personnel and the patient, to undergo these procedures when they're under a COVID-related isolation procedures. So there were modest differences in this, and I think the other piece of it could have been, as we've talked about, the delay to diagnosis. It may have been harder to make the stroke diagnosis. But there were important differences in door-to-CT and door-to-reperfusion time in the COVID-positive patients, about 20 minutes extra for each of these.

Sandy Doss: [16:08](#)

So let's say the president puts you in charge of preparedness for the next pandemic, in terms of systems of care approaches to either MI or stroke or both, what are the things that you would require or recommend that we do to be prepared next time?

James de Lemos: [16:22](#)

I think we learned a lot in the beginning. And I would say that our initial fear reaction in the hospitals with regard, in particular, acute AMI and stroke are time-dependent therapies that require rapid systems of care delivered emergently to achieve optimal results. And I would say there

And what we learned, very quickly, was that these procedures

impressed with what's been done and what's been maintained over the years.

Sandy Doss: [19:16](#)

Well, thanks very much. Appreciate your time. I enjoy talking to you and I appreciate your coming here and sharing your