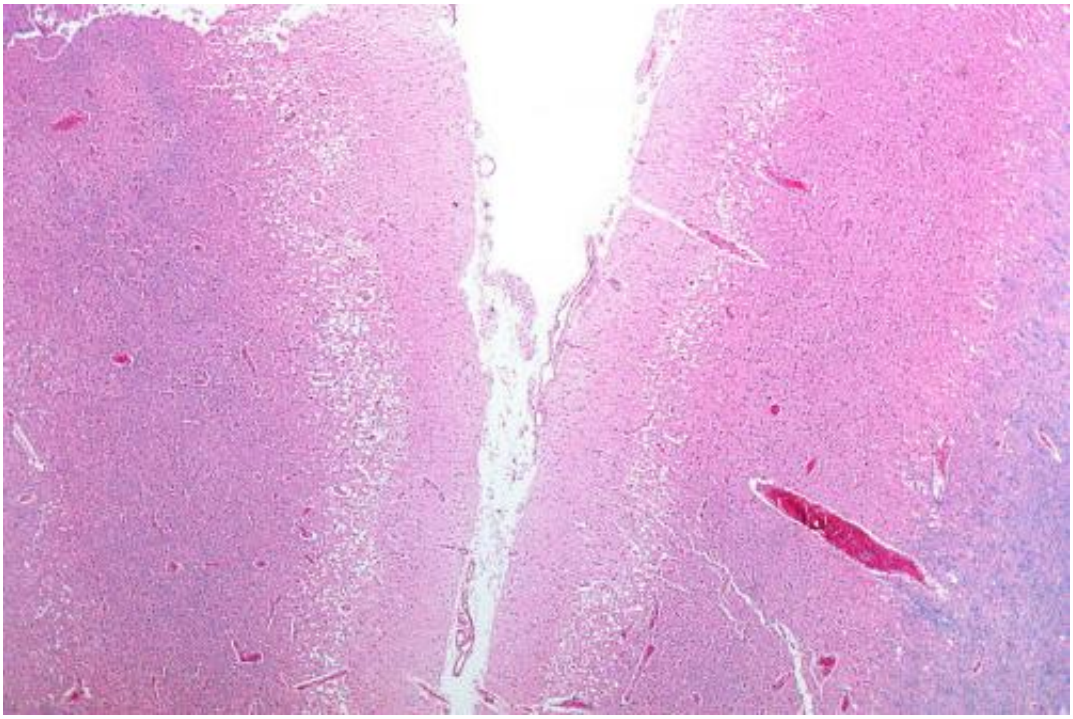
COVID-19 patients may have lower stroke rates than previously suggested

May 20 2020



Micrograph showing cortical pseudolaminar necrosis, a finding seen in strokes on medical imaging and at autopsy. H&E-LFB stain. Credit: Nephron/Wikipedia

Fewer people than previously reported suffer from stroke as a result of COVID-19, a new analysis finds. However, strokes that accompany the pandemic virus, SARS-CoV-2, appear to be more severe.

In the NYU Grossman School of Medicine-led study, researchers found

that fewer than 1 percent of hospitalized patients who tested positive during one month for the virus also suffered from a stroke. This contrasts with the rates reported recently in small studies in China and Italy, which ranged from 2—5 percent.

However, the current investigation also revealed that people with both conditions were younger, had worse symptoms, and were at least seven times more likely to die than stroke victims who were not infected.

"Our study suggests that stroke is an uncommon yet important complication of coronavirus given that these strokes are more severe when compared with strokes occurring in patients who tested negative for the virus," says study lead author Shadi Yaghi, MD, an assistant professor in the Department of Neurology at NYU Langone Health.

Yaghi, who is also the director of clinical vascular neurology research at NYU Langone, cautions that the public should always take stroke symptoms seriously. Should they experience symptoms like trouble walking or speaking, or sudden paralysis of the face or limbs, they should seek immediate medical care regardless of concerns about exposure to the virus.

The new study, publishing May 20 in the journal *Stroke*, is the largest of its kind, says Yaghi, among COVID-19 stroke victims and adds valuable insight into the poorly understood complications of COVID-19 disease.

For the investigation, the researchers used medical records to identify 32 stroke patients among 3,556 people who were being treated for COVID-19 at NYU Langone hospitals in New York City and Long Island between March 15 and April 19. Then, they compared the characteristics of this group with stroke patients without the virus admitted during the same timeframe, and with patients from the previous year, before the pandemic began.

The research team found that stroke patients with COVID-19 disease had more severe symptoms than their counterparts without the virus. In fact, during the study period, 63 percent died, compared with just 9 percent for those without the virus and 5 percent of pre-pandemic stroke patients.

The results also add to other early research suggesting that strokes among COVID-19 patients form differently than the majority of strokes. The condition, the researchers say, usually occurs when a blood vessel suddenly gets blocked, preventing blood from reaching the brain. Among study patients with COVID-19, at least 56 percent of the strokes appeared to arise from increased blood-clotting throughout the body. This finding may offer a clue to how physicians can better treat stroke occurring in patients who have the virus, the study authors say.

"Our findings provide compelling evidence that widespread blood-clotting may be an important factor that is leading to stroke in patients with COVID-19," says study senior author Jennifer Frontera, MD, a professor in the Department of Neurology at NYU Langone. "The results point to anticoagulant, or blood thinner therapy, as a potential means of reducing the unusual severity of strokes in people with the coronavirus."

In addition to investigating anticoagulant therapy, both Frontera and Yaghi plan to continue the study to see if the findings hold true through the end of the year.

More information: Shadi Yaghi et al. SARS2-CoV-2 and Stroke in a New York Healthcare System, *Stroke* (2020). DOI: 10.1161/STROKEAHA.120.030335

Provided by NYU Langone Health

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