Blood Thinners, Blood Pressure Meds May Improve COVID-19 Survival Rate

Researchers are investigating why the new coronavirus appears to affect the cardiovascular system, and how blood pressure medications and blood thinners might help. Getty Images

- Researchers are looking into why the new coronavirus seems to affect the cardiovascular and respiratory systems.
- One study concluded blood pressure medications may help with survival rates among people with COVID-19.
- Another study said blood thinners could help reduce the severity of outcomes among people with COVID-19.

All data and statistics are based on publicly available data at the time of publication. Some information may be out of date. Visit our coronavirus hub and follow our live updates page for the most recent information on the COVID-19 pandemic.

While COVID-19 is a respiratory disease, the new coronavirus that causes it seems to affect the cardiovascular system as well.

Early on, researchers realized that many people with COVID-19 had developed tiny blood clots throughout their bodies, including in their lungs.

In addition, some people, including professional athletes, have been found to have an inflammation of their heart called myocarditis related to COVID-19.

The full picture of exactly how this respiratory virus affects the cardiovascular system is still coming into focus.

But in the past few months, researchers have already uncovered a wide range of ways in which the new coronavirus might affect the blood and heart.

And those discoveries might shed light on treatments or preventive measures for the virus in general.

The latest findings came in two studies published this week.

Researchers at the University of East Anglia in the United Kingdom concluded that people taking certain high blood pressure medications may have a lower risk for severe illness or death from COVID-19.

And at the Icahn School of Medicine at Mount Sinai in New York, researchers found more evidence that drugs that help prevent blood clots may improve survival in people with COVID-19.

Both findings are based only on observations and need further research, but they underline the extent to which cardiovascular issues and COVID-19 appear to be tied together.

Blood types and COVID-19

Some of the ways in which heart and blood issues have been thought to be tied to COVID-19 have turned out to likely be wrong.

Early on, for instance, reports from Wuhan, China, suggested that people with certain blood types were more likely to have severe complications from the virus.

A study

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released last month by researchers at Harvard Medical School in Massachusetts looked into those ideas and largely dispelled them.

“It kind of put this blood-type thing to rest,” Dr. Anahita Dua, MBA, the Harvard study’s lead author and an assistant professor of surgery and vascular surgeon at Massachusetts General Hospital, told [name removed].

The effects of blood pressure meds

Another suggested connection was that ACE inhibitors and angiotensin receptor blockers, both medications for treating high blood pressure, might have an adverse effect on people with COVID-19.

“This related to potentially allowing more coronavirus to enter cells,” Vassilios Vassiliou, PhD, MA, MBBS, an associate professor of cardiology at the University of East Anglia, told [name removed].

Their study released this week on these medications looked into the question.

“Our study can conclusively say that these medications are safe in COVID-19,” said Vassiliou, who was the study’s lead researcher.

Moreover, the researchers saw a potential benefit of the medications for a certain group of patients.

People who had COVID-19 but who were taking these medications to treat high blood pressure, also known as hypertension, had a 33 percent reduction in critical outcomes from COVID-19, such as being admitted to an intensive care unit, needing ventilation, or dying.

“The one take-home message is that if you are prescribed such medication for any underlying medical condition, then you should definitely continue to take them,” Vassiliou said.

“If the underlying condition is hypertension, then this might even improve the prognosis if you were to be infected with COVID,” he said.

How blood thinners might help

As for clots, the typical way to treat or prevent them is with anticoagulant medications that help prevent the blood from excessively clotting.

In May, Mount Sinai researchers found that using anticoagulants on people hospitalized with COVID-19 was linked with improved survival rates.

In new research out this week, they dove further into the details and the potential benefits of that treatment.

The researchers concluded that both people on a full dose of anticoagulants and those on a lower dose had about a 50 percent higher chance of survival and a 30 percent lower chance of needing invasive ventilation than those on no anticoagulants.

“Incredibly careful to stipulate that this is an observational study, so there are inherent limitations there, and we need to be very careful not to blow it out of proportion, and the results need to be confirmed in clinical trials,”

said Dr. Anu Lala-Trindade, an assistant professor of medicine and director of heart failure research at Mount Sinai.

Lala-Trindade, one of the authors of the new study, told [name removed] that clinical trials are underway internationally, including at Mount Sinai.

Those trials might be able to more definitely answer questions like how, which, when, and for whom anticoagulants should be used.

How the research can be used

Those are just some of the many questions researchers have started to answer about how the new coronavirus works and how to limit its impact.

But looking into the heart and blood aspects of the virus has helped them narrow down those inquiries.

“Everyone wants to know how can we sort of stratify illness in these patients, how can we future out who’s gonna get worse,” Dua said. “We’re just saying if you have a lot of comorbidities, you’re more at risk. Well, what comorbidities?”

Researchers hope to look into questions around blood type or what hypertension meds you’re taking, or how likely you are to clot is all a part of that.

They'd also like to focus on why people are more likely to clot or bleed.

One of the next big waves of research Dua sees is looking into the formation and effects of tiny blood clots.

"Why that's happening and if it's something we can intervene on, and is that something we can potentially halt?" she explained.

"Maybe it's as simple as putting patients on blood thinners when they walk through the door, or maybe we need to be more thoughtful about what blood thinners and what's causing them to clot," Dua added.

"And we need to think about the why.… The blood element and the clotting element — we're still teasing out the details there. Knowing why those clots happen could give us a better sense of what COVID-19 is and how it works.

"As a cardiovascular community, we're still very intrigued as to how (the virus) causes cardiovascular complications. We know from a variety of reports that cardiovascular manifestations are indeed common in COVID-19… But the role it has in leading to those complications is unclear," Dua said.

Dua says the virus could be the direct cause, or the cardiovascular issues could be indirectly due to an "inflammatory cascade" that the body activates when sick.

More research — including more autopsies — are needed.

“If we get a second wave, we’re ready with questions now,” Dua said. “From when the disease first started till now, how much we’ve figured out, how much (knowledge) we’ve developed is just amazing.”