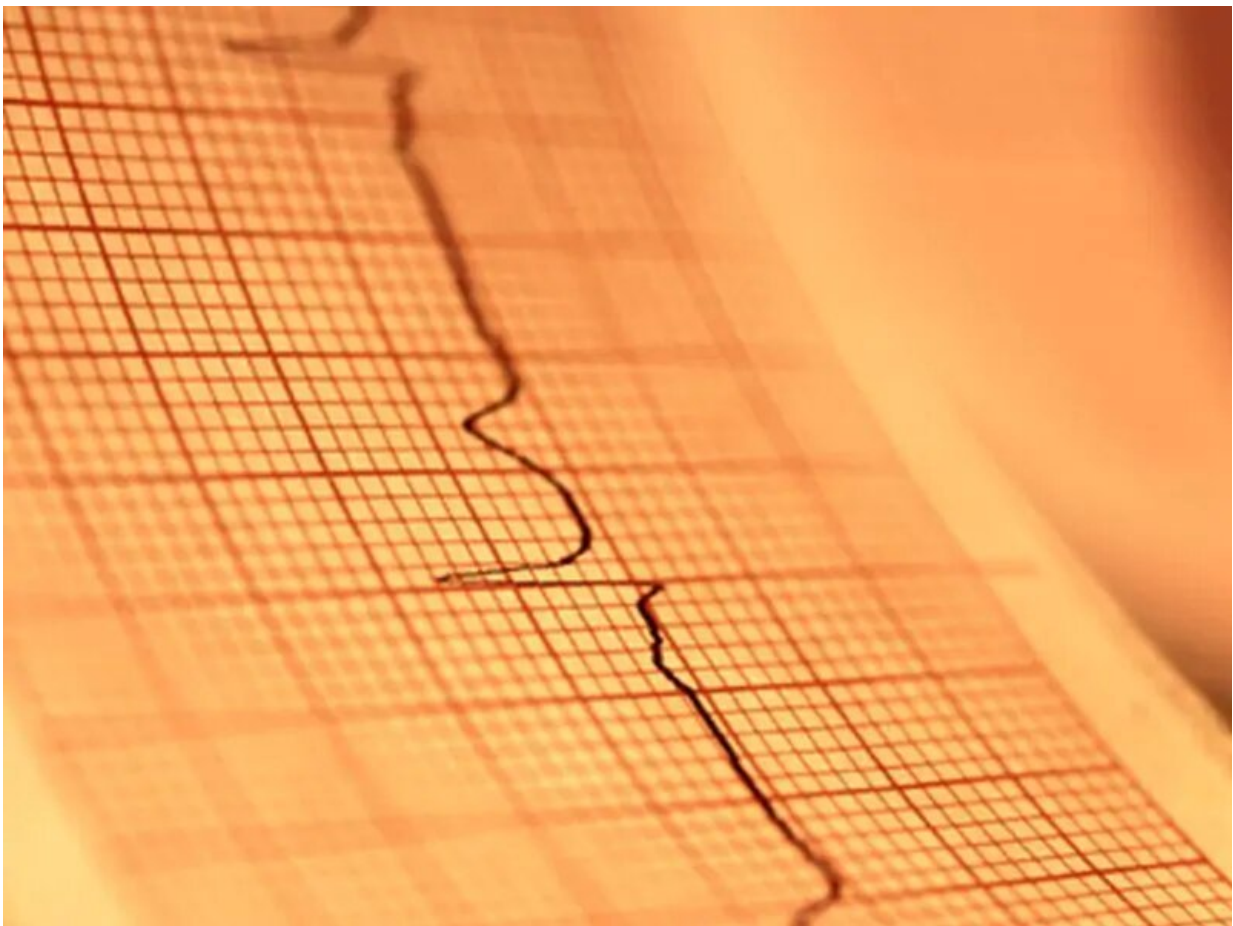


It looks like a classic heart attack, but in COVID-19 patients other issues may be at play

April 20 2020, by E.j. Mundell, Healthday Reporter



Eighteen patients with severe COVID-19 treated at a New York City hospital showed the classic signs of a heart attack on their electrocardiograms.

But a closer look at each case revealed that more than half of these patients didn't have a blockage in a major artery, the typical trigger of a heart attack. Thirteen of the 18 patients died of cardiac causes while in the hospital, said a team from the New York University Grossman School of Medicine.

These findings, published April 17 in the *New England Journal of Medicine*, suggest that there's something about the stress of severe COVID-19 that may be harming the heart in atypical ways, said one cardiologist who wasn't involved in the report.

"As we continue to learn about the impact COVID-19 has to our heart, we have begun to identify unique and unusual effects," said Dr. Satjit Bhusri, a cardiologist at Lenox Hill Hospital, also in New York City. "Some patients present with abnormal EKGs, which can classically look as an acute heart attack, but without a true finding of a blocked artery."

The real underlying cause for some cardiac deaths in these patients may be the stress, physical and otherwise, caused by COVID-19, Bhusri theorized.

"This disparity is also seen in stress-induced heart disease, otherwise known as broken heart syndrome," he noted.

The new report was led by Dr. Sripal Bangalore, a professor of medicine at NYU Langone Health. His team looked at the cases of 18 patients admitted with COVID-19 whose EKG readings indicated they had experienced a heart attack.

The EKGs displayed a classic "elevated ST segment" reading that's indicative of heart attack, the doctors said. Ten patients displayed ST elevation at the time they were admitted to hospital, while eight others showed it during their hospital stay.

However, based on coronary angiography scans and/or cath-lab investigations, 10 of the patients (56%) were found to have "non-coronary myocardial injury," Bangalore said. In layman's terms, that means a heart attack that was not caused by a blockage in an artery.

So what might have caused the fatal or near-fatal heart injuries experienced by those 10 patients? It's not clear, but Bangalore's team said COVID-19 might injure the heart through a range of causes, including a rupturing of plaques in [blood vessels](#), injury due to poor oxygenation, coronary spasm, tiny clots undetected by angiograms or more "direct" injury to vascular tissues.

"This case series highlights the complexity in caring for patients with COVID-19 who have EKG changes suggestive of a heart attack," Bangalore noted.

That's because using the standard heart treatment—clot-busting drugs—may sometimes be useless in these patients, as "half of them may not have major blockages," he explained.

"Overall, the in-[hospital](#) death rate for these patients is very high and we urgently need studies to figure out how to best care for them," Bangalore said.

Dr. Guy Mintz directs cardiovascular health at the Sandra Atlas Bass Heart Hospital in Manhasset, N.Y. Reading over the new report, he noted that the patients were "relatively young, with a median age of 63 years." The group had traditional heart risk factors: Two-thirds had [high](#)

[blood pressure](#), one-third had diabetes and 40% had high cholesterol.

Mintz noted that similar findings were observed for Chinese COVID-19 [patients](#) who experienced heart crises during their care at hospitals in Wuhan, the original epicenter of the pandemic.

Besides the formation of dangerous clots, severe COVID-19 "also stimulates the inflammatory system causing a cytokine storm— an out-of-control inflammatory response to infection—which can lead to more organ damage, whether it's the [heart](#), lungs or kidneys," Mintz explained.

More information: The U.S. Centers for Disease Control and Prevention has more on the [new coronavirus](#).

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