

# High level of heart attack protein linked to heightened risk of death from any cause

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A high level of troponin—a protein normally used to exclude the possibility of a heart attack in patients with chest pain—may signal a heightened risk of death from any cause within the next couple of years,

even in the absence of known or suspected cardiovascular disease, suggests research published online in the journal *Heart*.

The finding prompts the researchers to suggest that troponin may therefore have a role as a more general indicator of medium term survival.

High cardiac troponin levels are often seen in [hospital patients](#) who don't have specific signs of a heart attack, but the clinical significance of this has never been clear, say the researchers.

To explore this further, they tracked the survival of 20,000 hospital [patients](#) who had had a troponin blood test for any reason between June and August 2017 at a large teaching hospital, regardless of the original clinical indication. Their average age was 61 and over half (53%) were women.

Nearly half (9345; 47%) were outpatients; nearly a quarter (4947; 25%) were inpatients; and 28.5% (5708) were emergency care patients. More than 90% of them (18,282) had no clinical indication for cardiac troponin testing. In the remaining 9% (1718), doctors requested the test for clinical reasons.

Cardiac troponin was high in 1085 (just under 5.5%) patients. Some 1782 (9%) patients died after a year, and a total of 2825 (14%) had died just over 2 years (809 days) later. Patients were nearly 4 times as likely to die if their cardiac troponin test result was high (45%) as those whose test results fell within the normal range (12%).

Further analysis accounting for age, sex, hospital location, and [kidney function](#) revealed that an abnormally high cardiac troponin level was independently associated with a 76% heightened risk of death, not only from both cardiovascular disease, but also other causes.

In fact, the most common cause of death was cancer (1308;46%), followed by [cardiovascular disease](#) (363;13%).

After excluding deaths that occurred within 30 days, a parameter used to define the likelihood that this was associated with the reason for their [hospital stay](#), the link between cardiac troponin and heightened risk of death persisted. This indicates that this association wasn't driven purely by a short term risk of death, highlight the researchers.

This is an [observational study](#), and as such, no firm conclusions about cause and effect can be drawn, added to which the researchers acknowledge several limitations.

These include the fact that the study was carried out at one hospital and that potentially influential factors, such as personal background information and concurrent conditions, weren't known.

It seems biologically implausible that cardiac troponin level itself poses a heightened risk of [death](#), and more likely that it represents a broad spectrum of health issues, including those as yet undiagnosed, which increase the risk, say the researchers.

"This study suggests that [cardiac [troponin](#)] may have a more general role as a marker of medium-term prognosis outside [heart attack]," they conclude.

"Further research is required to confirm these findings across multiple settings and to evaluate whether any intervention can adjust the increased risk demonstrated," they add.

**More information:** Association between troponin level and medium-term mortality in 20 000 hospital patients, *Heart* (2023). [DOI: 10.1136/heartjnl-2023-322463](https://doi.org/10.1136/heartjnl-2023-322463)

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