

## *The NIHR Health Informatics Collaborative TROP-RISK study:*

### **Lay Summary**

A heart attack happens when there is a sudden loss of blood flow to a part of the heart muscle. Heart attacks can be diagnosed using a blood test for troponin, a muscle protein that is released into the bloodstream during a heart attack.

We examined data from over 250,000 patients who had a troponin measured. We found that in young patients, those whose blood showed a raised troponin had a 10-fold higher risk of death than those whose blood did not. This increased risk fell with age, reaching 1.5 times the risk in patients over the age of 90. Nevertheless, even in very elderly patients, a raised troponin in the blood signifies a higher risk of dying. Over the age of 80, almost half of patients with a raised troponin level died within three years.

We also found that even when doctors do not think the primary problem is a heart attack, the presence of troponin in the blood signifies a higher risk of death. Therefore, troponin provides meaningful information in all age groups, regardless of the underlying problem.

This study shows that the higher the amount of troponin in the blood, the higher the risk of death in patients with a heart attack. This pattern was seen up to moderate elevations in troponin level. Higher levels of troponin in the blood were

unexpectedly associated with a lower risk of dying. One explanation was that patients with the higher troponin levels were more likely to have a heart attack which can be treated by an operation to improve blood flow to the heart. Doctors will be able to use this information to help identify the risk of death in patients who have a troponin measured.