New troponin test improves heart attack diagnostics
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In a collaboration study between the Heart Center of Turku University Hospital and the Biotechnology unit of the Department of Life Technologies of the University of Turku, a new simple immunoassay test was developed that detects solely the large troponin molecules. A troponin ratio was calculated by dividing the level of large troponin molecules, determined by the new test, by the level of all troponin molecules, determined by the test currently at use in hospitals. This troponin ratio was remarkably higher in MI patients than in renal insufficiency patients, although the results of the current commercial troponin test were similar in these groups.

"More than half of the small troponin elevations detected in emergency department patients are due to causes other than heart attack. The developed test seems to separate very well the small troponin elevations caused by threatening MI from more benign transient troponin elevations," says Professor Emeritus Juhani Airaksinen from the Heart Center of Turku University Hospital.

"A special feature of the test we have developed is that it would be possible to implement it in automated analysis systems in the hospital laboratories, similarly as the commercial troponin tests currently at use in the hospital laboratories," says Assistant Professor Saara Wittfooth from the Department of Life Technologies, University of Turku.

The results of this study have been published in Circulation.

More information: K.E. Juhani Airaksinen et al, Novel Troponin Fragmentation Assay to Discriminate Between Troponin Elevations in Acute Myocardial Infarction and End-Stage Renal Disease, Circulation (2022). DOI: 10.1161/CIRCULATIONAHA.122.060845