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Reference values of troponin-T and its potential use in diagnosis of acute Myocardial infarction

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Introduction of methods capable of measuring the low levels of the heart damage marker Troponin T (TnT) among healthy increases our ability to detect small acute myocardial infactions (AMI) but also has the potential toincrease the number of admissions and health care costs. Since many patients now present with a measurable TnTclinical decisions could be facilitated by knowledge of common TnT levels in different populations. Here we have determined non-parametric reference values for TnT in different populations with and without AMI. The 99th percentile in populations without known TnT elevating conditions was highly age dependent with abreakpoint around 65 years, especially prominent among patients at the emergency department. The 99th percentile were stable around 11 ng/L among patients below 65 years, but increased in an age dependent manner when older patients were included in the calculations. Among patients from the cardiac care unit without AMI the 99th and the 97.5th percentile of TnT were also highly age dependent and markedly elevated among patients with heart failure but not elevated among patients with stable atrial fibrillation. The 1st percentile of TnT among patients with non-ST elevation myocardial infarction (NSTEMI) remained below 11 ng/L until 10 hours after onset of symptom. The 97.5th percentile of TnT dynamic among patients without AMI was around 60% irrespectively of time between blood samples, underlying heart condition and TnT level. The 1st percentile of TnT dynamic among patients with NSTEMI remained below 60% until 13-16 hours after onset of symptom. These reference values will aid in the complicated clinical judgement surrounding unclear TnT elevations.