Providing Rapid Out of Hospital Acute Cardiovascular Treatment (PROACT-4)

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Introduction: Early troponin testing has transformed the diagnosis of patients presenting to the emergency department (ED) with acute cardiovascular (CV) symptoms. Whether point-of-care (POC) troponin testing in the ambulance can further accelerate the time to diagnosis is unknown. We conducted a randomized trial of POC troponin testing in the ambulance.

Methods: Patients with chest pain (CP) presenting via ambulance were included; STEMI patients or those with a clear non-CV cause for their symptoms were excluded. Patients were randomized to usual care or POC-Troponin. The POC-Troponin arm had a high-sensitivity troponin (99%ile: 0.02 ng/ml) drawn pre-hospital and analyzed on a POC device in the ambulance: results were available to the paramedic and ED staff. The final diagnosis was centrally adjudicated. The primary endpoint was time from first medical contact to final ED disposition i.e. discharge from ED or admission to hospital.

Results: We randomized 601 patients in 19 months; 296 to usual care and 305 to POC-Troponin. Patients were 57% male, median age of 66 years (53-78), 30% had prior CAD and 25% had diabetes. After the 911 call, the first troponin was available a median of 139 min (101-218) in usual care and 38 min (28-55) in POC-Troponin. In POC-Troponin, the troponin was >0.01 ng/ml in 17.4% and >0.03 ng/ml in 9.8%. In the entire cohort and after diagnosis adjudication, patients had angina (n=24), acute coronary syndrome (n=112), acute heart failure (n=16), other cardiovascular (n=27), chest pain not yet diagnosed (n=289) and other (n=126) causes for chest pain. Patients spent a median of 8.97 hours (6.47-10.98) from first medical contact to final disposition, and 165 (27.4%) were admitted to hospital. The primary endpoint was shorter in patients randomized to POC-Troponin (median 8.75 hours [6.2 - 10.77] compared to usual care (median 9.14 hours [6.69 - 11.17], p=0.05). There was no difference in the secondary endpoint of repeat ED visits, hospitalizations or death in the next 30 days.

Conclusions: In this broad population of patients with CP, POC troponin in the ambulance accelerated the time to final disposition. The potential for enhanced and more cost effective early ED triage of the majority of low-risk patients with CP is an unrealized opportunity.

Disclosure: