

Abstract Title: Are there sex-based differences in myocardial injury in Acute Heart Failure?

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Background and Hypothesis:

Myocardial injury in acute heart failure (AHF) contributes to worse outcomes. Whether there are sex-based differences in organ injury in AHF is not well known. This study was designed to assess potential sex-based differences in myocardial injury, as defined by high-sensitivity troponin T (hsTnT) levels, in patients presenting in ED with AHF. We hypothesized that men with AHF have higher hsTnT levels.

Project Methods:

This is a preliminary analysis from the TACIT study, a large, prospective, multi-center, observational, biomarker cohort study. Adult patients diagnosed and treated for AHF, with a systolic blood pressure >100mmHg, and enrolled within 3 hours of first AHF therapy were eligible. Febrile patients, short life-expectancy, ACS, AF with RVR >130bpm, transplant, VAD, or ESRD were excluded. hsTnT were drawn at baseline and 3 hours later. Hemolyzed samples were disregarded as hemolysis falsely lowers hsTnT. A multivariable linear regression model was used to adjust for potential differences in baseline hsTnT using clinically meaningful covariates.

Results:

Of 527 enrolled, 499 comprised the final analysis set. Of these patients, 413 had a non-hemolyzed baseline hsTnT. Notably, more men than women were enrolled; men had higher mean baseline hsTnT values (48.3ng/mL, SD(74.5)) than women (28.3ng/mL SD(39.9)). After multivariable adjustment, baseline hsTnT differences by sex remained significant ($p < 0.0001$).

Conclusion and Potential Impact:

Men with AHF have higher baseline levels of myocardial injury than women. These differences may need to be taken into account for risk-stratification as well as management.