P5674

Direct comparison of three high-sensitivity cardiac troponins in syncope

J. Du Fay De Lavallaz[1], P.B. Badertscher[2], T.Z. Zimmermann[1], J.W. Walter[1], I.S. Strebel[1], C.P. Puelacher[1], F.P. Peacock[3], J.B. Boeddinghaus[1], T.N. Nestelberger[1], N.G. Geigy[4], O.M. Miro[5], M.K. Kuehne[1], T.R. Reichlin[6], C.M. Mueller[1]

[1]University Hospital Basel, Cardiology, Basel, Switzerland; [2]University of Illinois at Chicago, Chicago, United States of America; [3]Baylor College of Medicine, Houston, United States of America; [4]University Hospital Liestal, Liestal, Switzerland; [5]Hospital Clinic San Carlos, Madrid, Spain; [6]Preventive Cardiology & Sports Medicine, Inselspital Bern, Bern, Switzerland

Funding Acknowledgement: Swiss National Science Foundation, Swiss Heart Foundation, Cardiovascular Research Foundation, Basel (Switzerland), University Basel (Switzerland)

Background: It is unknown, whether high-sensitivity cardiac troponin I (hs-cTnI) or hs-cTnT provide higher accuracy for the diagnosis and risk-stratification of patients with syncope.

Methods: We directly compared the diagnostic and prognostic accuracy of hs-cTnI and hs-cTnT in a prospective international multicenter study enrolling patients older than 40 years presenting with syncope to the emergency department (ED). Hs-cTnI/T concentrations were measured in a blinded fashion using three assays. Cardiac syncope, as adjudicated by two independent physicians using all available clinical information including 1-year follow-up, was the diagnostic endpoint. Death and nonfatal major adverse cardiovascular events (MACE) at 5, 30 and 720 days were the prognostic endpoints.

Results: Among 1219 patients, cardiac syncope was the adjudicated final diagnosis in 204 (16.7%). All three hs-cTn showed higher concentrations in patients with cardiac syncope compared with other causes (all $p<0.01$, Figure 1) and remained independent predictors of cardiac syncope in multivariable models. While the diagnostic accuracy of the three assays for cardiac syncope was similar (area under the curve (AUC) of 0.76–0.77 (95% CI, 0.72–0.80, $p>0.05$ for all direct comparisons)), the percentage of patients above/below the assay-specific cut-off strongly varied (Figure 1). The prognostic accuracy of hs-cTnI/T was comparable among the assays and very high for imminent (within 5 days) death (AUC 0.93–0.94), and high for 30 and 720-day death (AUC 0.74–0.8), as well as MACE (AUC 0.74–0.78).

Conclusion: Hs-cTnI/T concentrations may have clinical utility in patients presenting with syncope as they provide diagnostic as well as prognostic information.

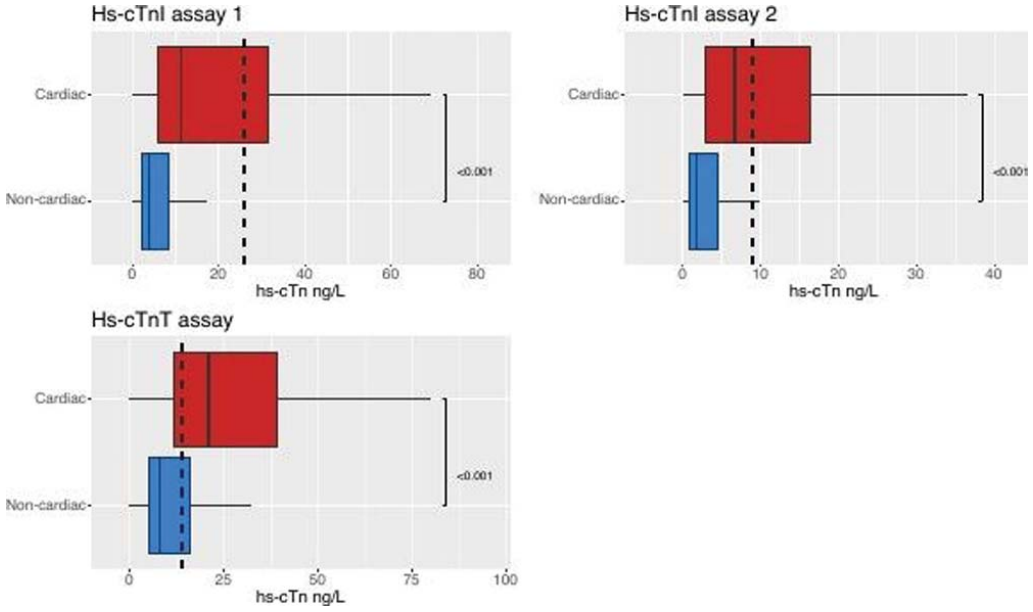

Figure 1