

Publication

Adding stress biomarkers to high-sensitivity cardiac troponin for rapid non-ST-elevation myocardial infarction rule-out protocols

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 4664938

Author(s) Restan, Ingar Ziad; Sanchez, Ana Yufera; Steiro, Ole-Thomas; Lopez-Ayala, Pedro; Tjora, Hilde L.; Langørgen, Jørund; Omland, Torbjørn; Boeddinghaus, Jasper; Nestelberger, Thomas; Koechlin, Luca; Collinson, Paul; Bjørneklett, Rune; Vikenes, Kjell; Strand, Heidi; Skadberg, Øyvind; Mjelva, Øistein R.; Larsen, Alf Inge; Bonarjee, Vernon V. S.; Mueller, Christian; Aakre, Kristin M.

Author(s) at UniBasel [Lopez Ayala, Pedro](#) ; [Yufera Sanchez, Ana](#) ; [Mueller, Christian](#) ;

Year 2022

Title Adding stress biomarkers to high-sensitivity cardiac troponin for rapid non-ST-elevation myocardial infarction rule-out protocols

Journal European Heart Journal – Acute CardioVascular Care

Volume 11

Number 3

Pages / Article-Number 201-212

Keywords Cardiovascular disease; Copeptin; Glucose; NSTEMI; NSTEMI rule-out; biomarkers

Mesh terms Biomarkers; Female; Humans; Male; Middle Aged; Myocardial Infarction, diagnosis; Non-ST Elevated Myocardial Infarction, diagnosis; Prospective Studies; Troponin I; Troponin T

This study tested the hypothesis that combining stress-induced biomarkers (copeptin or glucose) with high-sensitivity cardiac troponin (hs-cTn) increases diagnostic accuracy for non-ST-elevation myocardial infarction (NSTEMI) in patients presenting to the emergency department.; The ability to rule-out NSTEMI for combinations of baseline hs-cTnT or hs-cTnI with copeptin or glucose was compared with the European Society of Cardiology (ESC) hs-cTnT/I-only rule-out algorithms in two independent (one Norwegian and one international multicentre) diagnostic studies. Among 959 patients (median age 64 years, 60.5% male) with suspected NSTEMI in the Norwegian cohort, 13% had NSTEMI. Adding copeptin or glucose to hs-cTnT/I as a continuous variable did not improve discrimination as quantified by the area under the curve {e.g. hs-cTnT/copeptin 0.91 [95% confidence interval (CI) 0.89-0.93] vs. hs-cTnT alone 0.91 (95% CI 0.89-0.93); hs-cTnI/copeptin 0.85 (95% CI 0.82-0.87) vs. hs-cTnI alone 0.93 (95% CI 0.91-0.95)}, nor did adding copeptin <9 mmol/L or glucose <5.6 mmol/L increase the sensitivity of the rule-out provided by hs-cTnT <5 ng/L or hs-cTnI <4 ng/L in patients presenting more than 3 h after chest pain onset (target population in the ESC-0 h-algorithm). The combination decreased rule-out efficacy significantly (both $P < 0.01$). These findings were confirmed among 1272 patients (median age 62 years, 69.3% male) with suspected NSTEMI in the international validation cohort, of which 20.7% had NSTEMI. A trend towards increased sensitivity for the hs-cTnT/I/copeptin combinations (97-100% vs. 91-97% for the ESC-0 h-rule-out cut-offs) was observed in the Norwegian cohort.; Adding copeptin or glucose to hs-cTnT/I did not increase diagnostic performance when compared with current ESC guideline hs-cTnT/I-only 0 h-algorithms.

Publisher Oxford University Press

ISSN/ISBN 2048-8726 ; 2048-8734

edoc-URL <https://edoc.unibas.ch/94283/>

Full Text on edoc Available;

Digital Object Identifier DOI 10.1093/ehjacc/zuab124

PubMed ID <http://www.ncbi.nlm.nih.gov/pubmed/35024819>

ISI-Number WOS:000770392700007

Document type (ISI) Journal Article