The Diagnostic Value of Brain-Fatty Acid Binding Protein in Traumatic Brain Injury
Hulscher, Jan B.; Vervliet, Broes H. D.; Wilczak, Nadine; van der Naalt, Joukje

Published in:
Journal of Neurotrauma

DOI:
10.1089/neu.2013.3099

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2014

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment.

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Download date: 17-09-2023
Letter to the Editor

The Diagnostic Value of Brain-Fatty Acid Binding Protein in Traumatic Brain Injury

Jan B. Hulscher,1 Broes H.D. Vervliet,1 Nadine Wilczak,2 and Joukje van der Naalt3

Dear Editor,

WITH interest we have read the article by Walder and colleagues1 in which they report the results of the assessment of Heart-Fatty Acid Binding Protein (H-FABP) as a biomarker for patients with severe traumatic brain injury (TBI). H-FABP was increased in patients with multitrauma compared with mon trauma and showed an inverse correlation with outcome as determined by the Glasgow Outcome Scale Extended at 3 months. H-FABP is a non-specific biomarker released in several tissues such as the brain and heart. FABPs are involved in intracellular transport of long-chain fatty acids and are rapidly released from damaged cells into the circulation. Therefore, FABP is increasingly investigated as a marker for injury of different organs. One of the other subtypes of this biomarker, Brain-FABP (B-FABP), is also reported to reflect brain injury in cerebrovascular disease and in mild traumatic brain injury.2,3

We performed a study in which we assessed B-FABP and S100B in 120 patients with various severity of TBI.4 All serum samples were obtained early after injury (mean 1.1 [standard deviation (SD)] 0.36 h). CT on admission (classified according to the Marshall criteria) was abnormal in 36% of patients. Median B-FABP was significantly increased in patients with severe TBI compared with those with mild and moderate TBI (40.9 [SD 18.1] vs. 31.8 [SD 15.6 μg/L, p = 0.049]). Further, in patients with CT abnormalities, median B-FABP was significantly increased compared with patients without CT abnormalities (41.7 vs. 28.2 μg/L, p = 0.04). S100B was not significantly related to injury severity or CT classification.

Based on these findings, the question arises whether it would be valuable to assess B-FABP in addition to H-FABP. A study in mild TBI revealed a ratio of H-FABP to B-FABP of 0.58, indicating a relatively higher release of B-FABP, although no comparison with imaging was performed.5 Both biomarkers were found to be increased in 70% of patients.

Although H-FABP is 10-fold more present in TBI, it is also increased in ischemic heart disease.5 This might be considered an important confounder in severe TBI, because in this category of patients, often injuries to other systems, in particular thorax and abdomen, are present. Unfortunately, in the study of Walder and associates,1 biomarkers of cardiac damage were not obtained.

Nevertheless, Walder and coworkers1 have demonstrated that biomarkers such as H-FABP can be an important adjunct to clinical decision making. We would like to underline the importance of the assessment of FABP, but challenge clinicians to consider the additional value of each specific biomarker in multimarker detection strategies.

References


Address correspondence to:
Joukje van der Naalt, MD, PhD
Department of Neurology
University Medical Center Groningen
PO Box 30001
Groningen 9700RB
The Netherlands
E-mail: j.van.der.naalt@umcg.nl

Departments of 1Surgery, 2Laboratory Medicine, and 3Neurology, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.