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Intestinal fatty acid binding protein as a predictor for intra-abdominal pressure-related complications in patients admitted to the intensive care unit; a prospective cohort study (I-Fabulous study)

Objective: Critically ill patients admitted to the Intensive Care Unit (ICU) are at risk for intra-abdominal hypertension (IAH) and related complications such as organ failure, abdominal compartment syndrome (ACS), and death. The aim of this study was to determine the value of urinary and serum intestinal fatty acid binding protein (I-FABP) levels as early marker for IAH-associated complications.

Design: Prospective multicenter observational study of 198 patients admitted to the ICU with risk factors for IAH. Urinary and serum I-FABP and intra-abdominal pressure (IAP) were measured during 72 hours. Diagnostic performance of I-FABP was determined using univariate analysis, linear mixed-effect models, receiver operating characteristics (ROC) analysis, and generalized linear mixed models (GLMM).

Results: Fifteen (8%) patients developed ACS and 74 (37%) developed new organ failure. I-FABP and IAP were positively correlated. Patients who developed ACS had higher median baseline levels of urinary I-FABP (235 (P₂₅-P₇₅ 85-1747) µg/g creat) than patients with IAH who did not develop ACS (87 (P₂₅-P₇₅ 33-246) µg/g, p=0.037). I-FABP had no discriminatory ability on ACS development; the area under the ROC curve (AUC) was 0.53 (95% CI 0.46–0.61) for urinary I-FABP and 0.65 (95% CI 0.56-0.74) for serum I-FABP. With an odds ratio of 1.00, neither urinary nor serum I-FABP indicated increased risk for developing new organ failure or ACS.

Conclusions: While statistical differences between groups were observed, urinary and serum I-FABP levels have no value in the early identification of individual patients at risk for IAH-related complications and should not be used in clinical practice.