PANCREAS

Prognostic indicator in acute pancreatitis

Serial measurements of blood urea nitrogen (BUN) predict mortality in acute pancreatitis, according to investigators based in the Boston area, MA, USA.

> “...our study calls for the reconsideration of [BUN] in the early assessment of acute pancreatitis”

The early assessment of acute pancreatitis is crucial to identify patients at increased risk of severe disease who might benefit from vigorous fluid resuscitation in an intensive care setting. “Although numerous clinical scoring systems, such as the Ranson criteria published in 1974, have been proposed, none has had widespread acceptance in clinical practice [owing] either … to their complexity or reliance on data that are not routinely collected during hospitalization”, comments Bechien Wu, lead author of the study. Wu and colleagues’ observational cohort study analyzed data from 5,819 cases of acute pancreatitis. All patients had at least three BUN and hemoglobin measurements taken within 48 h of hospitalization.

The BUN trend revealed a significant difference between survivors and nonsurvivors during the first 48 h of hospitalization. Overall BUN levels among nonsurvivors increased over the first 48 h, whereas this parameter decreased among survivors. No such difference existed between survivors and nonsurvivors for hemoglobin levels. Both BUN and changes in BUN were independent predictors of mortality—with every 5 mg/dl (1.79 mmol/l) increase in BUN, the odds ratio for mortality increased by 2.2. BUN was more informative than hemoglobin at admission, 24 h and 48 h, and an increase of BUN at 24 h was particularly associated with an increased risk of mortality.

“Although change in BUN at 48 h was one of the original Ranson criteria, it has not received much attention recently. I believe our study calls for the reconsideration of the importance of this routine laboratory test in the early assessment of acute pancreatitis,” says Wu. “We are now enrolling patients in a randomized, controlled trial to determine whether adjusting fluid parameters on the basis of changes in BUN during the first 24 h of hospitalization can prevent complications related to acute pancreatitis”, he concludes.

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Original article Wu, B. U., Johannes, R. S., Sun, X., Conwell, D. L. & Banks, P. A. Early changes in blood urea nitrogen predict mortality in acute pancreatitis. *Gastroenterology* **137**, 129–135 (2009).