

Serum ammonia, hospital mortality linked in ICU cirrhosis patients

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For patients with cirrhosis in the intensive care unit (ICU), there is an

association between early serum ammonia and hospital mortality, according to a study published online July 20 in *Alimentary Pharmacology and Therapeutics*.

Filipe S. Cardoso, M.D., from Nova Medical School in Lisbon, Portugal, and colleagues assessed the impact of serum ammonia variation on outcomes in [critically ill patients](#) (aged 18 years and older) with cirrhosis. The derivation cohort included 492 patients, and the validation cohort included 600 patients.

The researchers found that median ammonia was higher for patients with grade 3/4 [hepatic encephalopathy](#) (HE) than those with grade 2 or grade 0/1 HE (112 $\mu\text{mol/L}$ versus 88 and 77 $\mu\text{mol/L}$, respectively) on ICU day 1. Furthermore, compared with survivors, hospital nonsurvivors had higher median ammonia (99 versus 86 $\mu\text{mol/L}$). Higher day 2 ammonia was independently associated with higher hospital mortality (adjusted odds ratio per 10 $\mu\text{mol/L}$ increment, 1.11) after adjustment for significant confounding variables (age, HE, vasopressor use, and renal replacement therapy delivery). A model with serial ammonia (ICU days 1 and 3) predicted [hospital mortality](#) with reasonably good discrimination (C-statistic, 0.73) and calibration (R^2 , 0.19) in the validation model.

"We believe our study adds to the current literature by further supporting the potential clinical utility of serial serum ammonia measurements in the ICU," the authors write. "In fact, serial serum ammonia measurements may help to follow patients' clinical trajectories and improve prognostic evaluations in this setting."

More information: Filipe S. Cardoso et al, Early serum ammonia variation in critically ill patients with cirrhosis: A multicentre cohort study, *Alimentary Pharmacology & Therapeutics* (2023). [DOI: 10.1111/apt.17650](#)

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