A 55-year-old man with cirrhosis presented with hyperammonemic encephalopathy, subsequently fatal (plasma ammonia level $410 \mu M/L$). Three-Tesla MRI initially showed restricted diffusion (figure 1A) in the cerebral cortex, suggesting poor prognosis, thalami, and striatum. Apparent diffusion coefficient pseudo-normalized 8 days after admission (figure 1B), comparable to the evolution of hypoxic encephalopathy. T2 hyperintensity of the gray matter progressively increased (figure 2A). High glutamate plus glutamine without lactate was detected on day 2 in the right thalamus, while $N$-acetylaspartate progressively declined (figure 2B). These imaging findings illustrate the time course of hyperammonemic encephalopathy.

A.A. Capizzano, MD, A. Sanchez, MD, T. Moritani, MD, PhD, J. Yager, MS, Iowa City, IA

Author contributions: Dr. Capizzano contributed to the article by overseeing the collection of imaging, MR spectroscopy, and clinical data and writing the original version of the manuscript. Dr. Sanchez contributed to the article by interpreting the clinical data and
revising the manuscript. Dr. Moritani contributed to the article by analyzing and interpreting the diffusion-weighted imaging data and revising the manuscript. Dr. Yager contributed to the article by analyzing and interpreting the MR spectroscopy data and revising the manuscript.

Disclosure: Dr. Capizzano reports no disclosures. Dr. Sanchez served on a scientific advisory board for Vertex Pharmaceuticals. Dr. Moritani and Dr. Yager report no disclosures.

Correspondence & reprint requests to Dr. Capizzano: aristides-capizzano@uiowa.edu


Figure 2 FLAIR and MR spectroscopy findings

Evolution of fluid-attenuated inversion recovery signal (A) and right thalamic (repetition time/echo time = 1,500/30 msec) metabolites (B) at 2, 4, and 8 days after maximal hyperammonemia.
Hyperammonemic encephalopathy: Time course of MRI diffusion changes
A.A. Capizzano, A. Sanchez, T. Moritani, et al.
Neurology 2012;78;600
DOI 10.1212/WNL.0b013e318247ccd1

This information is current as of February 20, 2012