Hyperammonemic Encephalopathy due to Intravenous Amino Acid Administration in a Patient with Renal Insufficiency

T.	Tekin	Akpolat
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Hacettepe University School of Medicine, Ankara, Turkey

Dr. Tekin Akpolat, Ondokuz Mayıs Üniversitesi, Tıp Fakültesi, Hemodiyaliz ve Nefrologi Bölümü, TR-55139 Samsun (Turkey)

Dear Sir,

I would like to express my thanks to Mr. N.N. Yoshimura for his contribution.

Intravenous (IV) essential amino acid (EAA) therapy is efficacious in maintaining nitrogen equilibrium or minimizing protein catabolism and reducing the rate of urea formation and it is widely used in our clinics. Amino acids are useful substrates for the body. In general, amino acids (essential plus nonessential) may be given in a dose of 1-1.7 g/kg/day and the recommended EAA dose for children is 0.5-1.0 g/kg/day [1]. In uremic patients, serum EAA levels are usually decreased and serum non-EAA levels are usually increased or normal. The reported patient had a nephrotic syndrome and severe hypoalbuminemia (her serum albumin was 1.9 g/dl) in addition to uremia. Because the patient's amino acid requirement had been increased, IV EAA was infused in higher doses. Our aim is not to discuss the advantageousness of IV EAA administration, but to warn the clinician that it may rarely cause hyperammonemic encephalopathy in higher doses and it should be considered in the differential diagnosis of encephalopathy in uremic patients.

References

Nutritional products; in Kastrup EK, Olin BR, Connell SI, Hebel SK (eds): Drug Facts and Comparisons. Philadelphia, Lippincott, 1989, pp 3-168.