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Acute peritoneal dialysis, complications and outcomes in 389 children with STEC-HUS: a multicenter experience

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Abstract

Background: Management of acute kidney injury (AKI) in children with hemolytic uremic syndrome induced by a Shiga toxin-producing *Escherichia coli* infection (STEC-HUS) is supportive; however, 40 to 60% of cases need kidney replacement therapy (KRT). The aim of this study was to analyze procedure complications, especially peritonitis, and clinical outcomes in children with AKI secondary to STEC-HUS treated with acute PD.

Methods: This is a multicenter retrospective study conducted among thirty-seven Argentinian centers. We reviewed medical records of 389 children with STEC-HUS hospitalized between January 2015 and February 2019 that required PD.

Results: Complications associated with PD were catheter malfunction (n = 93, 24%), peritonitis (n = 75, 19%), fluid leaks (n = 45, 11.5%), bleeding events (n = 23, 6%), and hyperglycemia (n = 8, 2%). In the multivariate analysis, the use of antibiotic prophylaxis was independently associated with a decreased risk of peritonitis (hazard ratio 0.49, IC 95% 0.29-0.81; p = 0.001), and open-surgery catheter insertion was independently associated with a higher risk (hazard ratio 2.8, IC 95% 1.21-6.82; p = 0.001). Discontinuation of PD due to peritonitis, severe leak, or mechanical complications occurred in 3.8% of patients. No patient needed to be transitioned to other modality of KRT due to inefficacy of the technique. Mortality during the acute phase occurred in 2.8% patients due to extrarenal complications (neurological and cardiac involvement), not related to PD.

Conclusions: Acute PD was a safe and effective method to manage AKI in children with STEC-HUS. Prophylactic antibiotics prior to insertion of the PD catheter should be considered to decrease the incidence of peritonitis.

Keywords: Acute kidney injury; Acute peritoneal dialysis; Children; Hemolytic uremic syndrome; Kidney replacement therapy; Peritonitis; Shiga toxin-producing *Escherichia coli*.

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