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PREDICTORS OF POOR OUTCOME IN CHILDREN WITH TYPICAL HEMOLYTIC UREMIC SYNDROME

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Objectives: To identify potential risk factors for short-term outcomes in children with typical HUS who required dialysis.

Methods: This retrospective study included data from 77 pediatric patients < 18 years of age with typical HUS who were admitted to the National Research Center for Maternal and Child Health, Astana, Kazakhstan between 2008 and 2018 and received dialysis treatment. We analyzed the effect of the following characteristics: complete blood count (hemoglobin < 6.5g/dL, leukocytes >15x10^{3}mL, platelets <80x 0^{3}mL) on admission, serum sodium, ionized calcium, total protein on admission and 10 days after initiation of dialysis, hydration status and presence of hypertension on admission, anuria/oliguria day of starting dialysis, length of anuria > 10 days, - on death and development of CKD Stage 3–5 over 90 days following initiation of dialysis. Association with outcomes were assessed using logistic regression and adjusted for age.

Results: The median age of our cohort was 1,6 (IQR 0.95-2.4) with boys accounted for 53% (n=41). 5 (6.5%) patients died and 7 patients (9%) developed CKD Stage 3–5 with 3 of them receiving permanent dialysis by the 90th day after initiation of dialysis due to HUS. Patients with leukocytosis >15x10^{3}mL at the time of dialysis initiation had a high risk for combined poor outcomes (death or development of CKD) in the following three months (OR 4,1 95% CI: 1.1-15.25). Persistent hyponatremia <135mmol/L (OR: 19.35, 95% CI: 2.29-163,31) and hypoproteinemia <50g/L (OR: 4,54, 95% CI: 1.1-18,45) on the 10th day after starting dialysis were also associated with increased risk for combined outcomes. Other variables did not show any statistically significant association with death, development of short-term CKD or combined outcomes.

Conclusions: Leukocytosis at the time of dialysis initiation, persistent hyponatremia and hypoproteinemia 10 days after might be important predictors for poor outcomes (development of CKD Stage 3-5 or death).