Beyond the Initial Episode, Recurrent Hemolytic Uremic Syndrome Unveiled

Dear Editor,

Atypical hemolytic uremic syndrome (aHUS) is characterized by hemolytic anemia, thrombocytopenia, and acute kidney injury (AKI). It occurs due to an underlying complement pathway dysregulation with a genetic predisposition.[1,2] We report a case of aHUS with CD46 mutation.

A 4-year-old female had fever, vomiting, lethargy, and reduced urine output. She had shock with respiratory failure. A written informed consent was obtained from the father. Investigations revealed severe metabolic acidosis, hyperkalemia, hyponatremia, urea, and creatinine levels of 275 and 9.5 mg/dl, respectively. ECG revealed tall T waves. She was given respiratory support and peritoneal dialysis. Hemogram showed anemia with thrombocytopenia and schistocytes (5%). Urinalysis revealed nephritic range proteinuria and microscopic hematuria. The serum lactate dehydrogenase was highly elevated. Septicemia, malaria, leptospirosis, dengue, and DIC were ruled out. Her renal function slowly improved. Enalapril was started for hypertension. Serum complement levels were normal, and anti-factor H (FH) antibodies were nonreactive. After 2 months, she had a similar presentation with AKI, hyperkalemia, and microangiopathic hemolytic anemia. Whole exome sequencing revealed a novel mutation (p.Asn235Lysfs*21) in exon 6 in CD46 gene, which was later confirmed with Sanger sequencing [Figure 1]. Sibling screening turned out to be normal. The child is currently normotensive and achieving age-appropriate growth parameters.

Heterozygous loss-of-function human CD46 mutations account for 5–20% of all aHUS cases with high rates of recurrence after the first flare.[3] Plasma exchange, or plasma infusions, remains the chief option for patients with aHUS without anti-FH antibodies in India.[1] Patients with aHUS due to the CD46 mutation show a low risk of posttransplant recurrence.[4]

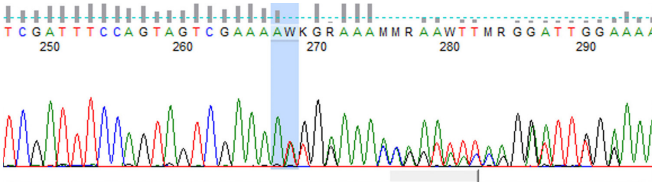

Figure 1: Sanger sequencing data (electropherogram) showing nucleotide change at c.704dupA (p.Asn235Lysfs*21) in the CD46 gene. Red, green, black, and blue color peaks show thymine, adenine, guanine, and cytosine bases, respectively.

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Conflicts of interest

There are no conflicts of interest.

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