Antenatal Indomethacin Use Altering the Initial Presentation of Type 4A Bartter Syndrome

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To the Editor: A 30-wk-3-d appropriate-for-gestational-age male neonate was born to a third degree consanguineous couple, with birth weight of 1.26 kg. The mother was a 27-y-old primigravida, with polyhydramnios detected at 25-wk gestation. Fetal growth was normal, with bilateral urinary tract dilatation and normal urinary bladder. Indomethacin was started and continued till delivery. Mother received antenatal steroids and MgSO₄ for anticipated preterm delivery. She had premature rupture of membranes and preterm vaginal delivery. In NICU, the neonate had excess weight loss (10% birth weight) by 24 h-of-life. The fluid intake and urine output were appropriate; serum sodium - 124 mEq/L, creatinine - 1.8 mg/dL, urea - 130 mg/dL, and high anion gap metabolic acidosis (HAGMA) were noted. In addition, we noted low serum chloride; normal potassium, calcium, blood pressures, cortisol, 17-hydroxy progesterone, and sepsis markers; increased urine osmolality and FeNa, hypercalciuria; and abnormal renal sonogram (bilateral renal parenchymal changes with mild pelviectasis). As the maternal uncle had congenital deafness, possibility of type 4A Bartter syndrome (BS) was considered and clinical exome sequencing was conducted. Serum creatinine and metabolic acidosis normalized, but there was new-onset hypokalemia. With appropriate fluid and electrolyte supplementation, the neonate started gaining weight.

Clinical exome sequencing revealed homozygous missense variation in exon 1 of the *BSND* gene (chr1:g.54999214G > A; Depth:362x), confirming type 4A BS with sensorineural deafness [1, 2]. Parents were counseled regarding the prognosis, and the need for parental and prenatal testing. The baby was discharged on day 33 at a weight of 1.42 kg. At 3 ½ mo-of-life, the child was weighing 2.5 kg. BERA confirmed profound hearing loss.

The neonate had several features of BS, but presence of HAGMA, normokalemia, and AKI posed diagnostic dilemma. Antenatal use of indomethacin can cause oliguria, AKI, edema, and hyperkalemia [3, 4]. The index case highlights the altered presentation of BS because of transient renal adverse effects of antenatal indomethacin.

Declarations

Conflict of Interest None.

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