

Acute Kidney Injury in Hypernatremic Dehydration in Exclusively Breastfed Babies: Don't Ignore It!

Sir,

Exclusive breastfeeding is a natural way of feeding newborn and has become the norm of feeding infants until 6 months of age. Hypernatremic dehydration is a well-recognized complication of unrecognized lactational insufficiency in exclusive breastfed babies.^[1-4] Exclusively breast fed babies presenting with acute renal failure secondary to hypernatremic dehydration is a relatively less recognized entity and is seldom focused upon. We present two babies with hypernatremic dehydration with acute kidney injury (AKI) consequent to inadequate breast feeding. Both the babies were term normal birth weight without an uneventful antenatal history with normal transition at birth. One was born by normal vaginal delivery and the other by elective cesarean section. Breastfeeding was started soon after birth but the babies developed fever irritability and hypernatremic dehydration with AKI on the 3rd day of life. Both the babies were adequately hydrated using supplemental milk and intravenous fluid, but renal function took more than 48 hrs to return to normal thus indicating that they were not pre renal failure [Table 1]. Renal ultrasounds of both the babies were unremarkable. Both the Mothers were counseled regarding the need and technique of breast feeding and babies were successfully discharged on exclusive breastfeeding. Babies are doing well on subsequent follow-ups.

AKI associated with hypernatremic dehydration, though not uncommon, is a relatively less recognized condition. Studies done by Bhat *et al.* and Boskabadi *et al.* did not mention about the presence or absence of AKI in their respective prospective series of exclusively breast fed babies with hypernatremia (Na >150) and excessive weight loss (>10%).^[1,2] Oddie *et al.* and Livingstone *et al.* also failed to mention about AKI in their series even if

there series had babies with weight loss up to 27% and 30% and serum sodium up to 175 and 207 respectively.^[3,4] However, there is documentation of AKI in various series of "hypernatremic dehydration."^[5] Though so many reports have emphasized the incidence and concern regarding hypernatremia, the AKI in such setting has never been highlighted. Of particular concern is that neonatal AKI can have a complete recovery or may have residual renal damage which may translate into sequelae in later life such as hypertension and chronic renal insufficiency.^[6] Renal failure in setting of hypernatremic dehydration may be underreported because there could be a notion that that most are expected trivial complication.

As exclusive breast feeding is the norm of infant feeding in first 6 months of life and incidence of hypernatremic dehydration is not uncommon, it is important to recognize AKI in these neonates and the potential for its long-term consequences in such setting. AKI in the setting of hypernatremic dehydration should be looked for and not be ignored. These babies may merit long term follow-up for possible sequelae. Therefore, there is an urgent need for follow-up studies of such babies into childhood and adulthood to look for unrecognized sequelae of such insult.

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Table 1: Day wise biochemical profile of both the babies

Day of NICU admission	Serum sodium		Serum creatinine		Blood urea		BUN-Serum creatinine ratio		Percentage weight loss	
	Baby 1	Baby 2	Baby 1	Baby 2	Baby 1	Baby 2	Baby 1	Baby 2	Baby 1	Baby 2
1	152	163	2.6	1.5	73	148	10.0	35.2	18.3	21.5
2	155	171	3.2	1.7	81	143	9.0	30.0		
3	137	149	1.1	1.4	88	118	28.6	30.1		
4	136	143	0.8	1.2	66	67	29.5	19.9		
5	-	139	-	1.1	-	19		6.2		

Day indicates the day of NICU admission and not the day of life; NICU – Neonatal intensive care unit; BUN – Blood urea nitrogen

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