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Neonatal Hypernatremia Due to Increase in Sodium in Breast Milk.

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ABSTRACT

A 3 day old baby with fever who had hypernatremia on repeated occasions even after correction, was diagnosed to have neonatal hypernatremia due to increase in sodium content of breast milk. Breast feeding was stopped, hypernatremic correction done and baby was started on formula feeds following which there was no hypernatremia.

Keywords: Neonate, breast milk, hypernatremia, exclusively breast fed.

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INTRODUCTION

Neonatal hypernatremia is a serious condition, the consequences of which can be life threatening. So the diagnosis of the cause of hypernatremia in newborn is inevitable. Hypernatremia in exclusively breastfed healthy infants due to increase in sodium concentration in breast milk is a rare cause.

Case Report

A 3 day old term male baby born to 25 year old primi mother by caesarean section following an uneventful pregnancy with a birth weight of 4.095 kg , developed fever. On examination baby was normal. Investigations for sepsis screening showed no evidence of infection: total leucocyte count – 10,700/cumm , red blood cell count – 5.49 million/cumm, haemoglobin- 20.4 g/dl, PCV- 59%, platelet count- 1.3lakhs/cumm, neutrophils 62%,lymphocytes 34%, eosinophils 4%,serum sodium 160mmol/l, serum potassium 5.67mmol/l, chlorides 116.5mmol/l, C reactive protein- negative, blood culture – no growth. Baby was started on iv fluids for hypernatremic correction. The serum sodium was 158mmol/l even after hypernatremic correction for 24 hours. Breast milk hypernatremia was suspected and following investigations were done: urine sodium 70.3mmol/l, serum urea 38mg/dl, serum creatinine 0.4 mg/dl, breast milk sodium 34.8mmol/l. Since the breast milk sodium was high mother was advised to stop breast feeding. Hypernatremic correction was done. Repeat serum sodium was normal. Baby was discharged on formula feeds and was reviewed after one week. Serum sodium level was normal on review.

DISCUSSION

In this case baby had persistent hypernatremia with high level of urinary sodium. This is attributed to the high intake of sodium and increased level of sodium in breast milk. The normal levels of sodium in breast milk is <=16 mmol/l [1]. There are various literatures on the cause of increased sodium in breast milk. A decrease in breast milk production or delay in maturation can lead to increase in breast milk sodium [2]. A study done in Canada showed that a successful lactation depended on breast milk sodium content. There was a failure in lactation when breast milk sodium increased from normal level [3]. Nicholas et al showed that the osmolarity of breast milk is maintained by sodium concentration and lactose. So decrease in lactose can cause an increase in sodium level [4]. The composition of milk is also affected by infection of breast causing an increase in minerals and chlorides and decrease in lactose and fat [5].

CONCLUSION

We conclude that breast milk sodium should also be estimated in exclusively breast fed infants who present with neonatal hypernatremia.

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