

# A Clinical Study of Dehydration, Dyselectrolytemia, Hyperthermia and Azotemia among Neonates Admitted to Tertiary Care Centre

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## Abstract

**Background:** Fever and hypernatremia are often found in neonates with excessive weight loss. In low-risk full-term infants, fever with no other symptoms during the first days of life is primarily related to dehydration and breast-feeding. Hypernatremia occurs primarily because of water deprivation and secondarily because of an accumulation of sodium in an attempt to maintain a proper circulating volume. Azotemia occurs in these patients as a consequence of impaired renal blood flow or decreased perfusion resulting from decreased blood volume. As the literature regarding the association between dehydration, dyselectrolytemia, hyperthermia and azotemia is less, a study on this subject would help in early detection, prevention and better management.

**Objectives:** To study the clinical, biochemical profile and outcome of neonates who presented with dehydration and hyperthermia to a tertiary care centre.

**Methodology:** All neonates admitted with dehydration and hyperthermia during the study period of 18 months, were enrolled for the study. Results: In this study of 241 neonates, most common symptom found were decreased voiding of urine (27.71%), followed by fever (26.29%), refusal to feed (24.29%), jaundice (19.43%) and convulsions (2.29%) and the most common biochemical derangement observed were Azotemia (69.52%), followed by

MC Kay and Smith [13] referred it to rise in temperature to 100-104°F on the second or third day. Whereas a clinical Study by Yadav [14] found that dehydration fever was second commonest cause of neonatal fever after sepsis.

Breastfeeding is universally considered to be the best and the safest way to feed neonates. Most of the babies lose at least 10% of body weight in the early days after birth. A steady state increase in weight gain is observed provided the neonate is fed with adequate breast milk. A very small number of breast-fed neonates do not establish an adequate milk intake, continue to lose weight and may develop hypernatremic dehydration [15,16]. Azotemia occurs in these patients as a consequence of impaired renal blood flow or decreased perfusion resulting from decreased blood volume. The association of hypernatremia with significant hyperbilirubinemia, might enhance the risk of bilirubin encephalopathy [17].

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## Objectives

To study the clinical, biochemical profile and outcome of neonates who presented with dehydration and hyperthermia to a tertiary care centre.

## Materials and Methods

After obtaining institute ethical committee clearance, with level IV evidence, a descriptive study was performed from 2016 to 2018 in the department of Paediatrics, NICU of BCH and RI, CGH and WCH attached to JIM Medical College, Davangere, Karnataka, India. The cases for this study were recruited by convenient sampling technique. All 241 neonates admitted with dehydration and hyperthermia during the study period of 18 months will be enrolled for the study. A pre structured proforma were used to record the relevant information from individual case selected for the study. All cases were taken into consideration for statistical analysis (IBM SPSS Statistics for Windows, Version 20.0, IBM Corp, Chicago, IL).

The

## Results

A total of 241 cases were enrolled in the study and the treatments were instituted as per our study protocol. The descriptive statistics were reported as mean (SD) for continuous variables, frequencies (percentage) for categorical variables. Data were statistically evaluated with IBM SPSS Statistics for Windows, Version 20.0, IBM Corp, Chicago, IL. The association between categorical data were analysed by using chi square test and p value <0.05 were considered statistically significant.

intact milk-ejection reflex. The volume of human milk consumed daily

