

Original Research Article

A comparative study of blood glucose and serum calcium levels in term IUGR neonates and normal neonates: a cross sectional study

Kavitha Konded, Bhavana Koppad*

Department of Pediatrics, SDM College of Medical Sciences and Hospital, Dharwad, Karnataka, India

Received: 25 August 2018

Accepted: 04 September 2018

***Correspondence:**

Dr. Bhavana Koppad,

E-mail: bhavna.d23@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Hypoglycemia and hypocalcemia are common metabolic problems occurring in the newborn and have direct consequences in the early neonatal period, prompt identification and treatment prevents severe neurodevelopmental outcomes. The primary objective was to compare blood glucose and serum calcium levels in term Intrauterine growth restriction (IUGR) babies with term appropriate for age (AGA) babies and secondarily to compute number of term IUGR babies with hypoglycemia and hypocalcemia.

Methods: Fifty term IUGR and 50 term AGA babies delivered at SDMCMSH, Dharwad during the study period of one year were included as cases and controls respectively after considering the inclusion and exclusion criteria. Two ml of peripheral venous blood was analyzed at 3 hours and 24 hours of life. Serum calcium was measured by calorimetric test method and blood glucose by auto analyzer. Statistical analysis was done using SPSS-17.

Results: At 3 hours of birth, 24% of term IUGR and 4% of AGA neonates had hypoglycemia. The mean RBS of cases at 3rd hour was 61.36 ± 23.56 mg/dl, significantly lower than control group (75.90 ± 22.57 mg/dl). The mean RBS among cases at 24 hours of life was 70.42 ± 16.14 mg/dl compared to 78.84 ± 15.90 mg/dl among controls. Both correlations were statistically significant. 8% cases had hypocalcemia at 3 hours and 6% had at 24 hours. The mean serum calcium level was lower in cases (8.50 ± 1.40 mg/dl) than controls (8.63 ± 1.14 mg/dl) at the 3rd hour of life and 24 hours of life [cases (8.42 ± 1.07 mg/dl) versus controls (8.64 ± 0.91 mg/dl)].

Conclusions: Significantly lower blood glucose levels were identified in term IUGR neonates. This association was apparent at 3 hours of life. The measurement of serum calcium & glucose in IUGR babies could predict a poorer outcome in these patients. Identifying and treating these biochemical abnormalities can avoid short term as well as long term sequelae.

Keywords: AGA, Hypoglycemia, Hypocalcemia, IUGR