

Postnatal linear Growth and Weight Gain in Infants of Non-Diabetic Mothers (INDM) Who were Born Preterm or Near Term and had Significant Neonatal Hypoglycemia



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Introduction

Preterm babies born to non-diabetic mothers (INDM) who experience significant hypoglycemia may have postnatal growth abnormalities

Objective

This study evaluated the growth pattern from birth to the age of 2 years of 40 INDM who were born at or near term with significant hypoglycemia

Materials

Anthropometric measures (z scores) from birth, 2,4,6,12,18 and 2 years were measured in 40 INDM who presented with significant neonatal hypoglycemia (plasma value less than 20-25 mg/dL (1.1-1.4 mmol/L)) that required proper therapy (IV glucose bolus followed by IV glucose infusion) for two days or more.

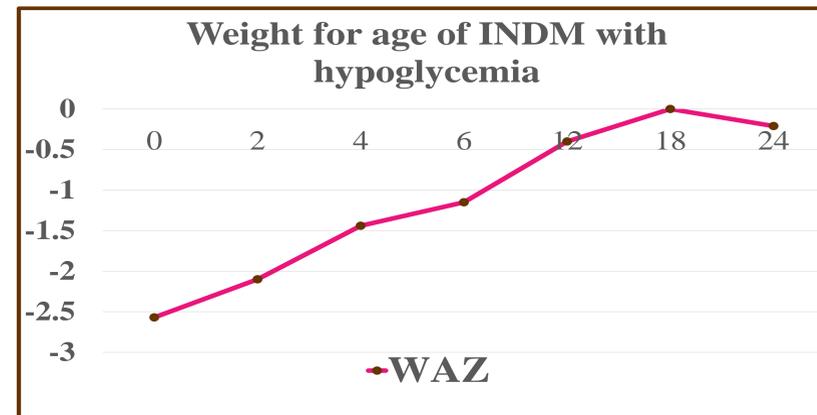
Their anthropometric data were compared to standard growth for normal age and sex-matched infants (WHO growth standards). All preterm babies were started on preterm formula until their Wt. z score (WAZ)) became >-1 SD. (average of 6 months)

Results

Their gestational age (GA) at delivery was 36.4 +/-2 weeks. They had WAZ = -2.6 +/-1.8,, length Z score (LAZ) = -2 +/-2.3 and Wt. for L. Z score (WLZ) = -2.9 +/-1.9

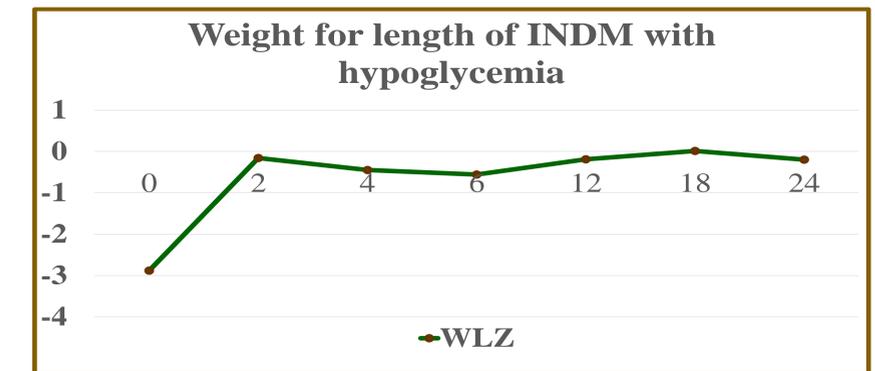
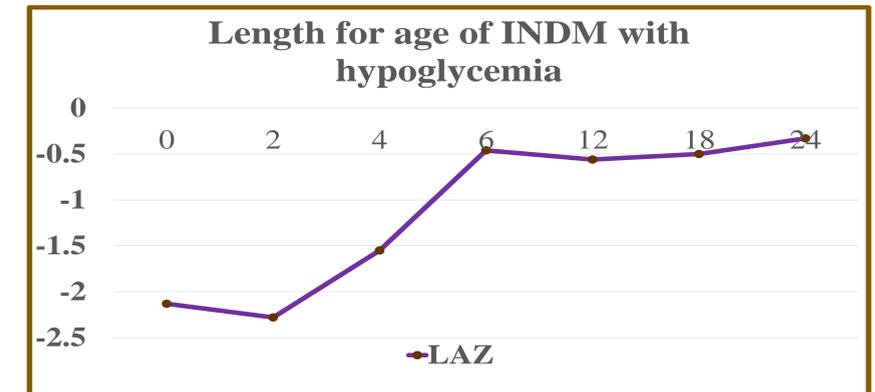
Results (cont'd)

- At birth :
- 24/40 (60%) had LAZ <-2,
- 30/40 (75%) had WAZ < -2.
- 29/40 (72.5%) had WLZ <-2.



- They had a progressive gain in WAZ for the first 18 months (from -2.6 to 0).
- They had a progressive increase in the LAZ for the first 6 months (from -2.1 to -0.46)
- This was followed by stable LAZ (normal growth velocity) until 2 years of age.
- By the age of 12 months 4/40 (10%) had LAZ < -2, 4/40 (10%) had WAZ <-2 and only one had WLZ <-2. One infant had WLZ > 2.
- By the age of 2 years, none had LAZ or WAZ <-2, and only one infant had WLZ <-2.
- None of those infants had WLZ > 2 (overweight).

Results (cont'd)



Conclusion

INDMs born preterm or at near term with severe neonatal hypoglycemia had significant short stature and underweight when plotted on WHO growth charts

. Feeding preterm formula resulted in a fast postnatal growth pattern with normalization of their linear growth and WAZ during the first year of life. None had overweight at 2 years of age

