

Linear Growth and Weight gain in Infants with Significant Neonatal Hypoglycemia During the First Two Years of Age: Comparison of Infants of Diabetic Mothers (IDM) versus Infants of Non-Diabetic Mothers (INDM) with Transient Hyperinsulinemia (Non-Ketotic Hypoglycemia)

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Introduction

Infants born to mothers with glucose intolerance (IDM) are suggested to have an increased risk of having growth abnormalities at birth and postnatally

Objective

This study evaluated the growth pattern of IDMs from birth to the age of 2 years

Materials

Anthropometric measures (z scores) from birth, 2,4,6,12,18 and 2 years were measured in 60 IDM and 40 infants of non-diabetic mothers (INDM) who presented with significant neonatal hypoglycemia (plasma value less than 20-25 mg/dL that required proper therapy (IV glucose bolus followed by IV glucose infusion) for two days or more.

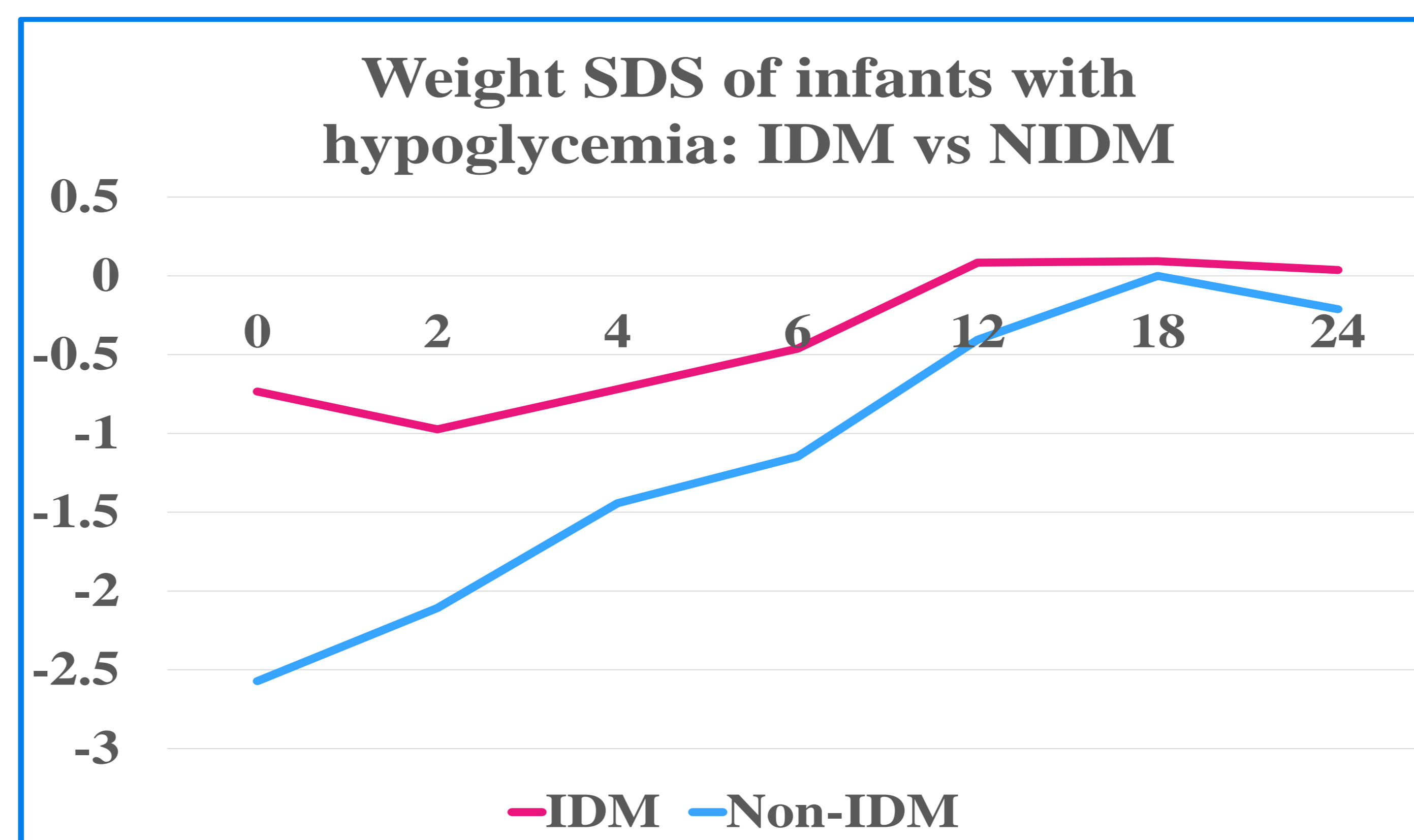
Results

IDM had Wt. z score = -0.73 ± 1.6 , L Z score = -0.57 ± 1.7 and Wt. for L Z score = -0.82 ± 1.5 .

They had higher GA and were heavier and taller than the INDM group who had Wt. Z score = -2.5 ± 1.8 , and wt. for L Z score = -2.8 ± 2 . ($p < 0.01$).

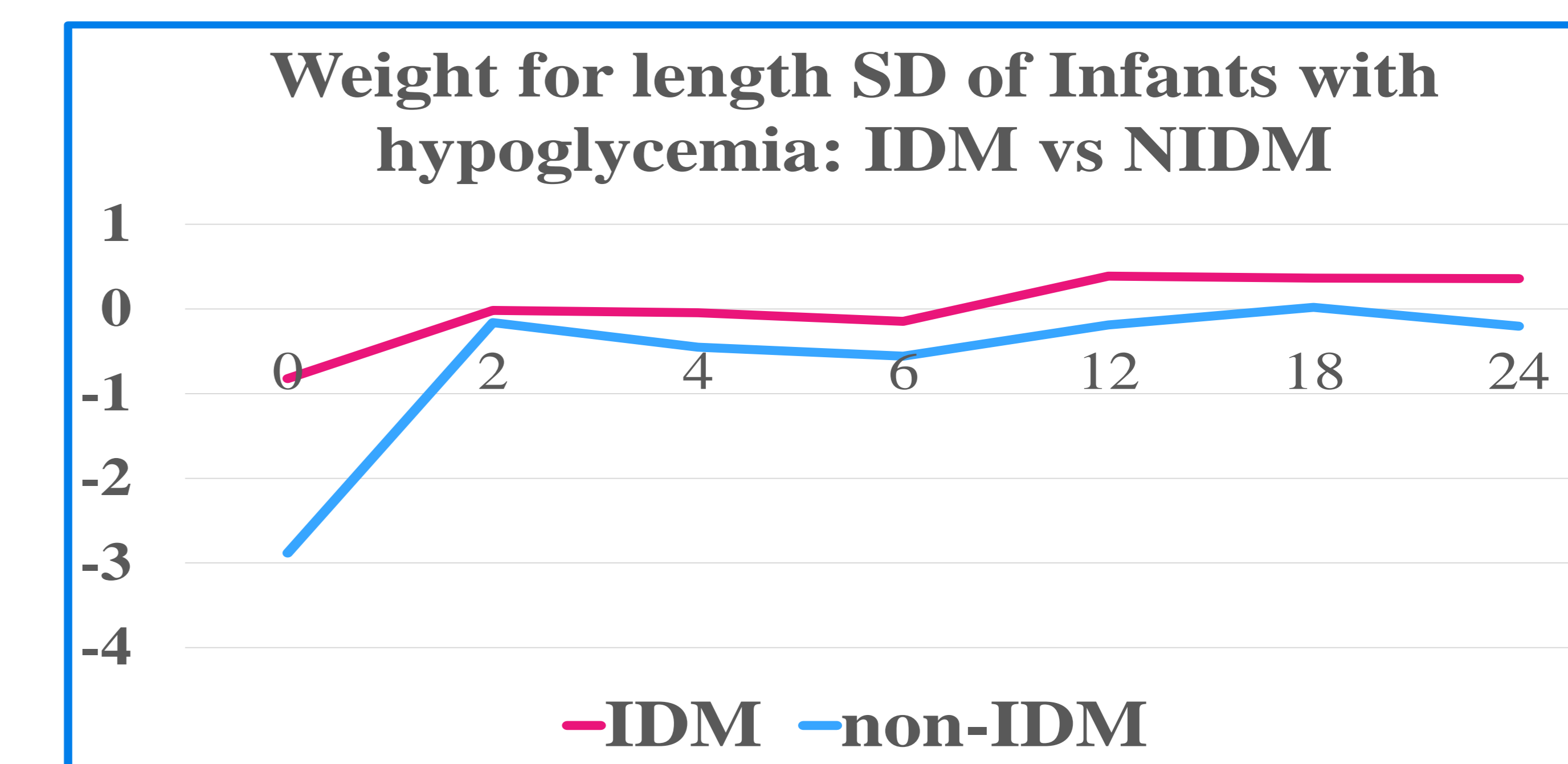
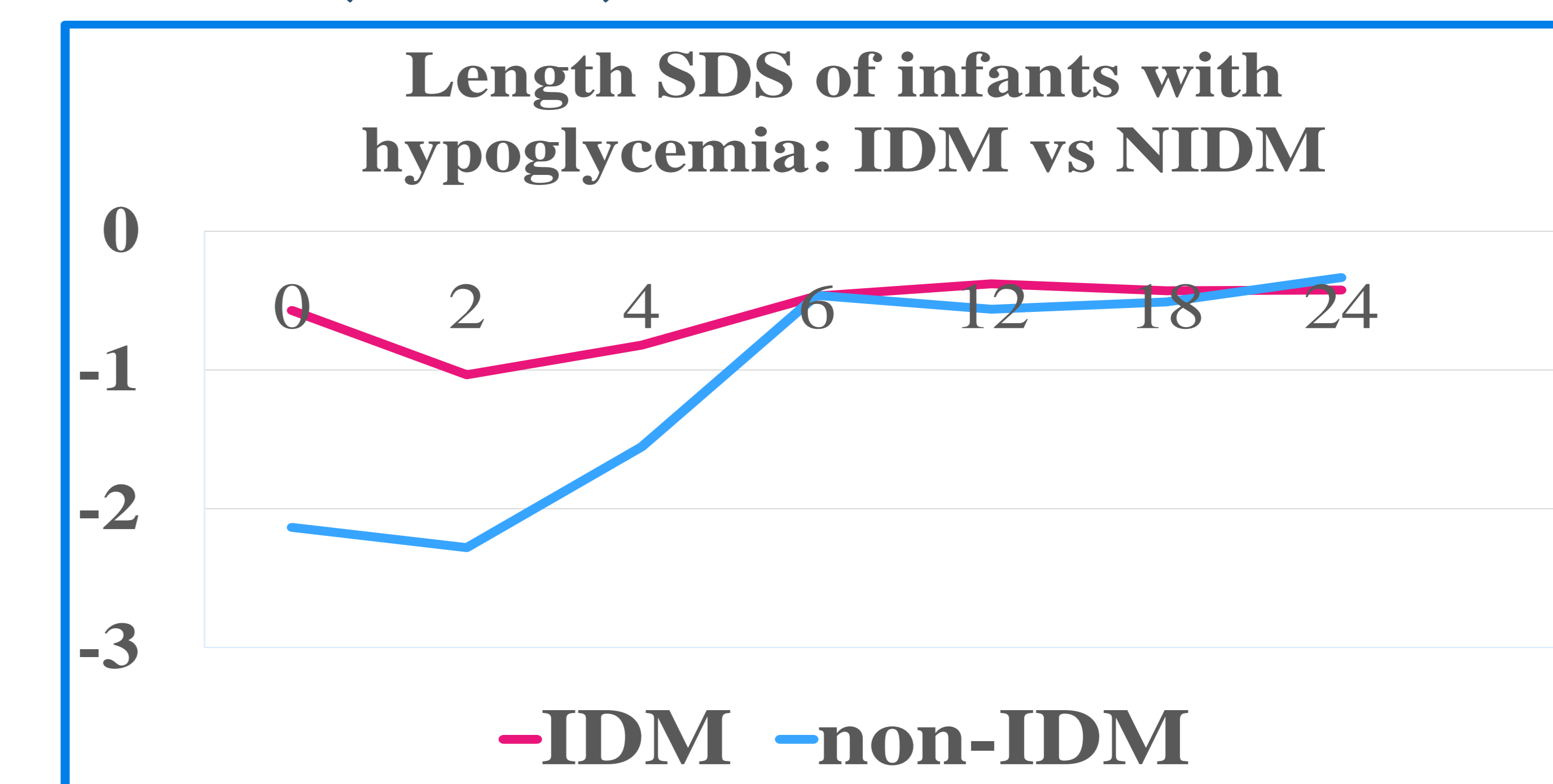
Results (cont'd)

- IDM had a progressive gain in the wt-z score that occurred during the first 12 months (from -0.7 to 0)
- stable Wt. Z score during the second year of age.
- INDM had a progressive gain in the wt-z score from birth to 18 months of life. This was followed by a stable wt-z score.
- Wt. Z score gain during the first year of life was significantly higher in the INDM versus IDM.
- At 18 months of age the wt. z score did not differ between the two groups.



- IDM had a progressive increase in the LSDS for 6 months (from -1 to -0.5) that was followed by stable LSDS (normal growth velocity) for the next 18 months.
- INDM had a progressive gain in the LSDS in the first 12 months (from -2.1 to -0.56) that followed by a stable LSDS.
- By the age of 12 months, the LSDS did not differ between IDM and INDM

Results (cont'd)



Conclusion

- IDM were born heavier and taller than INDM.
- IDM remain heavier and taller than INDM for the first 12 months of life.
- INDM had faster LSDS gain the first 12 months of life compared to the IDM.
- During the first 18 months of life, the change (delta) in weight z score and LSDS were reduced in IDM compared to INDM
- By the age of 18 months, there was no statistical difference between the two groups in all the anthropometric data.

