

Auxological characteristics of persistent hyperinsulinemic hypoglycemia at birth

Hironori Shibata¹, Mamiko Yamada¹, Tomohiro Ishii¹, Yohei Matsuzaki¹, Kazushige Ikeda¹, Yuka Nagashima², Masaki Takagi², Yukihiro Hasegawa² and Tomonobu Hasegawa¹

¹ Department of Pediatrics, Keio University School of Medicine, Tokyo, Japan

² Department of Endocrinology and Metabolism, Tokyo Metropolitan Children's Medical Center, Tokyo, Japan

Nothing to disclose

Take Home Message

Infants with PHH show excessive prenatal growth in weight and length but not in head circumference

Introduction

- Insulin is considered as one of the fetal growth factors
- Most infants with persistent hyperinsulinemic hypoglycemia (PHH) are born large for gestational age (LGA)
- This increased birth weight is supposed to result from increased lipogenesis by prenatal hyperinsulinism
- Other auxological characteristics than weight in infants with PHH have not been described previously

Objective

To characterize anthropometric parameters at birth (weight, length, and head circumference) in PHH compared with those in idiopathic LGA

Methods

Design and Settings

Reviewed medical records retrospectively in two institutions

Participants

< PHH >

- Included full term infants with PHH followed in two institutions between January 2000 and December 2014
- Excluded infants of diabetic mothers or those with known overgrowth syndrome

< Idiopathic LGA >

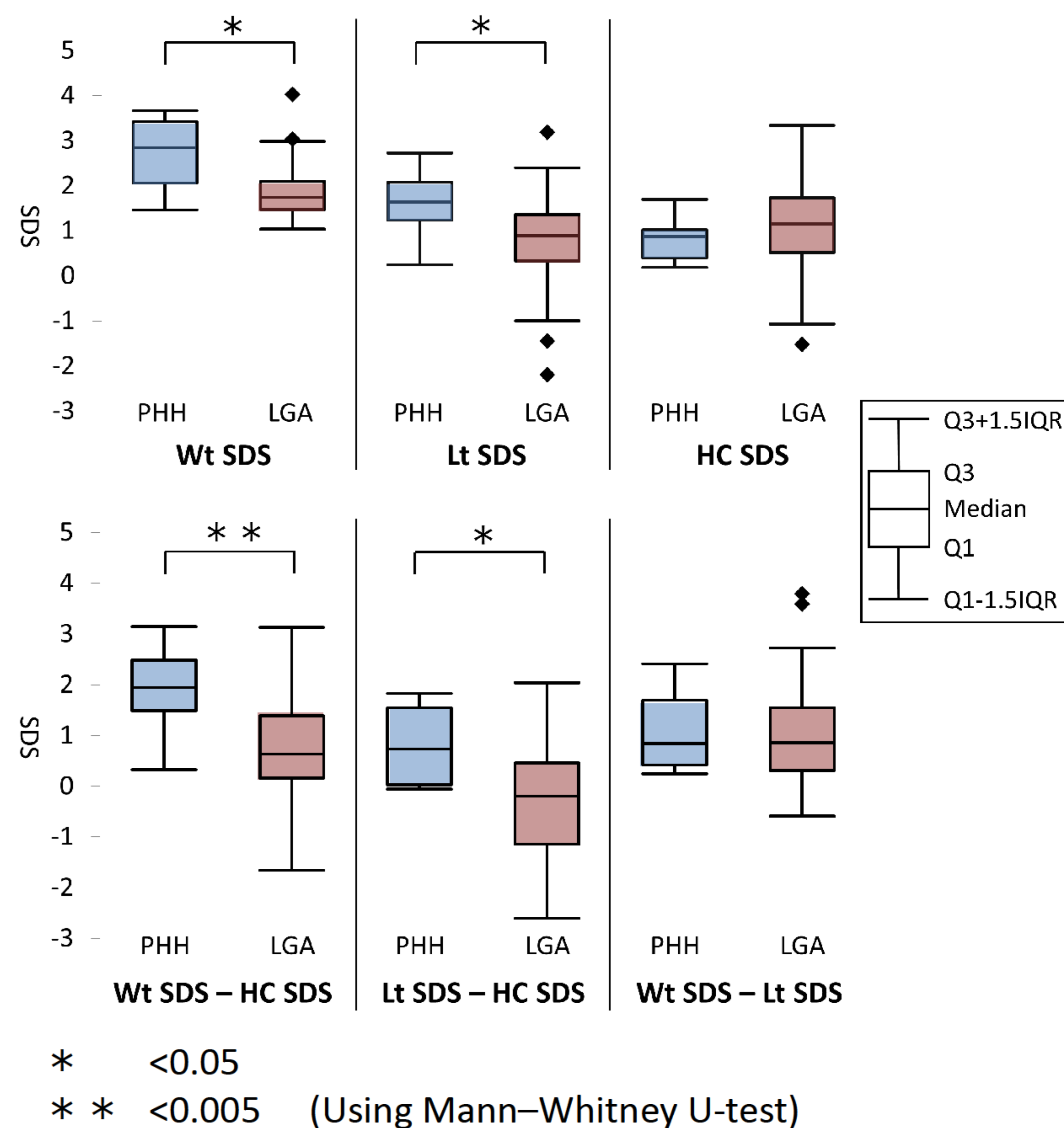
- Defined LGA as infants with birth weights greater than the 90th percentile for gestational age
- Included full term LGA infants born at Keio university hospital January 2012 and December 2014
- Excluded infants of diabetic mothers or those with known overgrowth syndrome

Variables

- Birth weight SDS (Wt SDS)
- Birth length SDS (Lt SDS)
- Birth head circumference SDS (HC SDS)
- Difference between Wt SDS and HC SDS
- Difference between Lt SDS and HC SDS
- Difference between Wt SDS and Lt SDS

Results

Figure 1. Box plot showing variables in PHH infants as compared with idiopathic LGA infants



Discussion

- The Wt SDS and Lt SDS in PHH were significantly greater than those in idiopathic LGA
 - There was no significant difference in the HC SDS between PHH and idiopathic LGA
 - The difference between Wt SDS and HC SDS, and between Lt SDS and HC SDS in PHH were significantly greater than that in idiopathic LGA
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- **These data indicate excessive prenatal growth in Wt and Lt for infants with PHH, but not in HC**
 - **Increased lipogenesis caused by prenatal hyperinsulinism may result in the difference between body and brain size**