

Commentary: Short Body Height and Pre-pregnancy Overweight for Increased Risk of Gestational Diabetes Mellitus: A Population-Based Cohort Study

Babu, Giridhara R.; Nakamura, Akinobu; Jurišić Eržen, Dubravka

Source / Izvornik: **Frontiers in Endocrinology, 2018, 9, 1 - 2**

Journal article, Published version

Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

<https://doi.org/10.3389/fendo.2018.00575>

Permanent link / Trajna poveznica: <https://um.nsk.hr/um:nbn:hr:184:061218>

Rights / Prava: [Attribution 4.0 International](#) / [Imenovanje 4.0 međunarodna](#)

Download date / Datum preuzimanja: **2025-01-12**



Repository / Repozitorij:

[Repository of the University of Rijeka, Faculty of Medicine - FMRI Repository](#)





Commentary: Short Body Height and Pre-pregnancy Overweight for Increased Risk of Gestational Diabetes Mellitus: A Population-Based Cohort Study

Giridhara R. Babu^{1*}, Akinobu Nakamura² and Dubravka Jurišić Eržen³

¹ Epidemiology, Public Health Foundation of India, New Delhi, India, ² Hokkaido University, Sapporo, Japan, ³ Faculty of medicine, University of Rijeka, Rijeka, Croatia

Keywords: diabetes, height, Asians, type 2 diabetes mellitus, screening, short stature

OPEN ACCESS

Edited by:

Wei Bao,
University of Iowa, United States

Reviewed by:

Claudio Daniel Gonzalez,
Centro de Educación Médica e
Investigaciones Clínicas Norberto
Quirno (CEMIC), Argentina

*Correspondence:

Giridhara R. Babu
epigiridhar@gmail.com

Specialty section:

This article was submitted to
Diabetes,
a section of the journal
Frontiers in Endocrinology

Received: 08 July 2018

Accepted: 10 September 2018

Published: 12 October 2018

Citation:

Babu GR, Nakamura A and
Jurišić Eržen D (2018) Commentary:
Short Body Height and Pre-pregnancy
Overweight for Increased Risk of
Gestational Diabetes Mellitus: A
Population-Based Cohort Study.
Front. Endocrinol. 9:575.
doi: 10.3389/fendo.2018.00575

A Commentary on

Short Body Height and Pre-pregnancy Overweight for Increased Risk of Gestational Diabetes Mellitus: A Population-Based Cohort Study.

by Li J, Wang P, Zhang C, Leng J, Li N, Wang L., et al. (2018). *Front. Endocrinol.* 9:349. doi: 10.3389/fendo.2018.00349

Li J et al. conduct a sufficiently large cohort study and show that the risk of gestational diabetes mellitus (GDM) is inversely correlated with the height of the pregnant women (1). This association is particularly seen among Asians and may not warrant biological plausibility for using short stature as screening criteria due to several reasons (2).

First, short stature can be associated principally through the mechanism of greater risk of obesity/fat mass (3). Co-presence of short stature and overweight in the pre-pregnant women might be more useful screening criteria (4). Second, the same adaptive alterations that protected these women from undernourishment during their early development could have led them to short stature, as well as lead to glucose intolerance (thrifty phenotype hypothesis) (5, 6). It is also possible that a genetically determined insulin effect could lead to both failure to grow and to diabetes (thrifty genotype); which might have contributed to a predisposition for GDM (7, 8).

GDM, as a form of diabetes is multifactorial disease in origin. Several factors such as greater prepregnancy BMI, age, weight gain and a parental history of diabetes mellitus are independently associated with the GDM (9). The epidemiologic studies using the selective criteria such as height as a risk factor may not mean much in a heterogeneous population with different types of genetic lineage and environmental influences. Height is merely a function of nutrition and genetic lineage; therefore, measuring the height of the women in childbearing age will not reflect undernourishment or frequent infections in their infancy and through their life-course. Future studies have to reflect height as an intermediate variable between early exposures in fetal and childhood with subsequent risk of non-communicable diseases including the GDM.

AUTHOR CONTRIBUTIONS

GB wrote the first draft and reviewed all drafts of the commentary. AN reviewed and provided inputs for finalization of the commentary. DJ reviewed and provided inputs for finalization of the commentary through all stages.

ACKNOWLEDGMENTS

This work is supported by the Wellcome Trust DBT India Alliance Fellowship to GB (Grant Number: IA/CPHI/14/1/501499).

REFERENCES

- Li J, Wang P, Zhang C, Leng J, Li N, Wang L, et al. Short body height and pre-pregnancy overweight for increased risk of gestational diabetes mellitus: a population-based cohort study. *Front Endocrinol.* (2018) 9:349. doi: 10.3389/fendo.2018.00349
- Brite J, Shiroma E, Bowers K, Yeung E, Laughon S, Grewal J, et al. Height and the risk of gestational diabetes: variations by race/ethnicity. *Diabetic Med.* (2014) 31:332–40. doi: 10.1111/dme.12355
- Desai M, Jellyman J, Ross M. Epigenomics, gestational programming and risk of metabolic syndrome. *Int J Obesity* (2015) 39:633. doi: 10.1038/ijo.2015.13
- Branchtein L, Schmidt MI, Matos M, Yamashita T, Pousada JMDC, Duncan BB, et al. Short stature and gestational diabetes in Brazil. *Diabetologia* (2000) 43:848–51. doi: 10.1007/s001250051460
- Asao K, Kao WHL, Baptiste-Roberts K, Bandeen-Roche K, Erlinger TP, Brancati FL. Short stature and the risk of adiposity, insulin resistance, and type 2 diabetes in middle age. The Third National Health and Nutrition Examination Survey (NHANES III), 1988–1994. *Diabetes Care* (2006) 29:1632–7. doi: 10.2337/dc05-1997
- Hales CN, Barker DJ. The thrifty phenotype hypothesis. *Br Med Bull.* (2001) 60:5–20. doi: 10.1093/bmb/60.1.5
- Dunger DB, Ong KK, Huxtable SJ, Sherriff A, Woods KA, Ahmed ML, et al. Association of the INS VNTR with size at birth. *Nat Genet.* (1998) 19:98. doi: 10.1038/ng0598-98
- Terauchi Y, Kubota N, Tamemoto H, Sakura H, Nagai R, Akanuma Y, et al. Insulin effect during embryogenesis determines fetal growth: a possible molecular link between birth weight and susceptibility to type 2 diabetes. *Diabetes* (2000) 49:82–6. doi: 10.2337/diabetes.49.1.82
- Jang H, Min H, Lee H, Cho N, Metzger B. Short stature in Korean women: a contribution to the multifactorial predisposition to gestational diabetes mellitus. *Diabetologia* (1998) 41:778–83. doi: 10.1007/s001250050987

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright © 2018 Babu, Nakamura and Jurišić Eržen. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.