effect of maternal hypertension. J Pediatr (Rio J). 2015;91:256–62.
2. American College of Obstetricians and Gynecologists. Task Force on Hypertension in Pregnancy. Hypertension in pregnancy. Report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy. Obstet Gynecol. 2013;122:1122–31.
3. Greenwood C, Yudkin P, Sellers S, Impey L, Doyle P. Why is there a modifying effect of gestational age on risk factors for cerebral palsy? Arch Dis Child Fetal Neonatal Ed. 2005;90:F141–6.

Tanara Vogel Pinheiro, Marcelo Zubaran Goldani, Juliana Rombaldi Bernardi*

Department of Pediatrics, Faculty of Medicine, Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil

* Corresponding author.
E-mail: juliana.bernardi@yahoo.com.br (J.R. Bernardi).

http://dx.doi.org/10.1016/j.jped.2015.07.005

Author's reply: Maternal hypertension and infant growth☆

Resposta do autor: Hipertensão materna e crescimento infantil

We appreciate the comments and questions about our study, which demonstrates the careful and correct assessment that focused on one aspect of concern in cohort studies: the possibility of selection bias.[1]

We will use this opportunity of scientific discussion to clarify some methodological aspects of the study and its limitations, ensuring its external validity and helping to increase knowledge on this topic, still scarcely studied in our country: low birth-weight preterm growth – the effect of maternal hypertension.

The first aspect to be discussed refers to maternal hypertension classification, which in our study was performed using the criteria of the National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy.[2] As shown in the first paragraph of the results section, preeclampsia was the predominant manifestation in the group of hypertensive women, corresponding to 80% ($n = 63$), which is classically described in the literature.[3] The remaining 20% of this group had gestational hypertension. No pregnant woman had chronic hypertension.

The second aspect is the subject of much discussion in the literature: what would be the ideal control group in studies on prognosis of preterm infants?

In development studies, it is important to assess the damage in premature infants in relation to the general population.[4] In relation to growth, this comparison is obtained by the analysis of the *Z*-scores of anthropometric measurements.

Our objective was to analyze the growth pattern of low birth weight preterm infants and the effect of maternal hypertension, using a cohort study design. Thus, the groups were formed based on the exposure or not to maternal hypertensive syndrome, excluding cases of multiple pregnancies, infection/congenital malformations, which are classic factors associated with growth alterations. The neonatal characteristics were similar between groups, as well as the post-natal factors that are known to influence growth, such as morbidity and dietary patterns. Logistic regression models were constructed to control for possible confounding factors.

Although the selection of a control group consisting of preterm infants may limit result interpretation, we do not consider that they should be attributed to selection bias. The data obtained allowed us to answer the study question on the effect of maternal hypertension on the growth of preterm low birth-weight infants: there were no risk or protective effects. Also, two important and potentially avoidable risk factors were highlighted: adequacy of birth weight and growth in the first year of life, which are clinically relevant aspects that contribute to guide the obstetric and pediatric conduct in daily practice.

Regarding the third question, the authors consider that there is a low possibility of selection bias, as the study sample size consisted of a population treated at the Brazilian Unified Health System, quite homogeneous in socio-demographic characteristics, which did not differ between the two assessed groups. Smoking was infrequent, observed in 10% of hypertensive and 20% of normotensive women ($p = 0.103$). It is necessary to highlight two aspects of methodological rigor in our study: control of the effect of time on the evolution of anthropometric measurements, and postnatal nutrition assessment, which is an important growth modulating factor in the first years of life.[5]

Finally, we expect that the aspects discussed herein can contribute to improve the interpretation of our study and encourage new studies to investigate other factors that can influence growth in low birth weight preterm infants.

Conflicts of interest

The authors declare no conflicts of interest.

DOI of refers to article:
http://dx.doi.org/10.1016/j.jped.2015.07.005

☆ Please cite this article as: Kiy AM, Rugolo LM. Author's reply: Maternal hypertension and infant growth. J Pediatr (Rio J). 2015;91:604–5.

References

1. Grimes DA, Schulz KF. Cohort studies: marching towards outcomes. Lancet. 2002;359:341–5.
2. Report of the National High Blood Pressure Education Program Working Group on high blood pressure in pregnancy. Am J Obstet Gynecol. 2000;183:S1–22.
3. Duley L. The global impact of pre-eclampsia and eclampsia. Semin Perinatol. 2009;33:130–7.
4. Saigal S, Doyle LW. An overview of mortality and sequelae of preterm birth from infancy to adulthood. Lancet. 2008;371:261–9.
5. Nzegwu NI, Ehrenkranz RA. Post-discharge nutrition and the VLBW infant: to supplement or not supplement? A review of the current evidence. Clin Perinatol. 2014;41:463–74.

Alice Maria Kiy[a,*], Ligia Maria Suppo de Souza Rugolo[b]

[a] *Neonatal Unit, Hospital das Clínicas, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista (UNESP), Botucatu, SP, Brazil*
[b] *Department of Pediatrics, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista (UNESP), Botucatu, SP, Brazil*

* Corresponding author.
E-mail: alicekiy@zipmail.com.br (A.M. Kiy).

http://dx.doi.org/10.1016/j.jped.2015.09.001