



ORIGINAL ARTICLE

Growth of preterm low birth weight infants until 24 months corrected age: effect of maternal hypertension[☆]



Alice M. Kiy^{a,*}, Ligia M.S.S. Rugolo^b, Ana K.C. De Luca^a, José E. Corrente^c

^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

^c Instituto de Biociências de Botucatu, Universidade Estadual Paulista (UNESP), Botucatu, SP, Brazil

Received 26 June 2014; accepted 25 July 2014

Available online 26 November 2014

KEYWORDS

Child;
Low birth weight;
Premature;
Maternal
hypertension;
Growth

Abstract

Objective: To evaluate the growth pattern of low birth weight preterm infants born to hypertensive mothers, the occurrence of growth disorders, and risk factors for inadequate growth at 24 months of corrected age (CA).

Methods: Cohort study of preterm low birth weight infants followed until 24 months CA, in a university hospital between January 2009 and December 2010. Inclusion criteria: gestational age < 37 weeks and birth weight of 1,500–2,499 g. Exclusion criteria: multiple pregnancies, major congenital anomalies, and loss to follow up in the 2nd year of life. The following were evaluated: weight, length, and BMI. Outcomes: growth failure and risk of overweight at 0, 12, and 24 months CA. Student's t-test, Repeated measures ANOVA (RM-ANOVA), and multiple logistic regression were used.

Results: A total of 80 preterm low birth weight infants born to hypertensive mothers and 101 born to normotensive mothers were studied. There was a higher risk of overweight in children of hypertensive mothers at 24 months; however, maternal hypertension was not a risk factor for inadequate growth. Logistic regression showed that being born small for gestational age and inadequate growth in the first 12 months of life were associated with poorer growth at 24 months.

Conclusion: Preterm low birth weight born infants to hypertensive mothers have an increased risk of overweight at 24 months CA. Being born small for gestational age and inadequate growth in the 1st year of life are risk factors for growth disorders at 24 months CA.

© 2014 Sociedade Brasileira de Pediatria. Published by Elsevier Editora Ltda. All rights reserved.

[☆] Please cite this article as: Kiy AM, Rugolo LM, Luca AK, Corrente JE. Growth of preterm low birth weight infants until 24 months corrected age: effect of maternal hypertension. J Pediatr (Rio J). 2015;91:256–62.

* Corresponding author.

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

PALAVRAS-CHAVE

Criança;
Baixo peso ao nascer;
Prematuro;
Hipertensão materna;
Crescimento

Crescimento de prematuros de baixo peso até a idade de 24 meses corrigidos: efeito da hipertensão materna

Resumo

Objetivo: Avaliar o padrão de crescimento de prematuros de baixo peso nascidos de mães hipertensas, a ocorrência de distúrbios de crescimento e os fatores de risco para inadequado crescimento aos 24 meses de idade corrigida (IC).

Métodos: Estudo de coorte de prematuros de baixo peso acompanhados até 24 meses IC, em um Hospital Universitário, entre Janeiro 2009 e Dezembro 2010. Critérios de inclusão: idade gestacional < 37 semanas e peso de nascimento de 1500-2499 g. Excluídas: gestações múltiplas, anomalias congênitas maiores e perda de seguimento no segundo ano de vida. Foram avaliados: peso, comprimento e IMC. Desfechos: falha de crescimento e risco de sobrepeso com 0, 12 e 24 meses de IC. Teste t Student, X², ANOVA-RM e regressão logística múltipla foram usados.

Resultados: Foram estudados 80 prematuros de baixo peso nascidos de mães hipertensas e 101 de mães normotensas. Houve maior risco de sobrepeso em crianças de mães hipertensas aos 24 meses, entretanto a hipertensão materna não foi fator de risco para inadequado crescimento. A regressão logística mostrou que nascer pequeno para idade gestacional e ter inadequado crescimento nos primeiros 12 meses de vida associaram-se com pior crescimento aos 24 meses. **Conclusão:** Prematuros de baixo peso nascidos de mães hipertensas têm risco aumentado de sobrepeso aos 24 meses de IC. Ser pequeno para idade gestacional e ter inadequado crescimento no primeiro ano são fatores de risco para distúrbios no crescimento aos 24 meses de IC.

© 2014 Sociedade Brasileira de Pediatria. Publicado por Elsevier Editora Ltda. Todos os direitos reservados.

Introduction

Among the causes of prematurity, hypertensive disorder of pregnancy is one of the most important, affecting 5% to 10% of pregnancies and demonstrating an increasing incidence in developing countries.^{1,2} This disease is an important cause of maternal and fetal mortality and morbidity, as well as one of the main medical indications of preterm birth, often associated with fetal growth restriction.^{1,3}

Preterm infants born small for gestational age (SGA) due to intrauterine growth restriction are at higher risk of neonatal morbimortality and growth and development disorders, when compared with those born with adequate weight for gestational age (AGA).^{4,5} Another point of concern regarding the consequences of prematurity or low birth weight in the long-term is that inadequate growth during the fetal period and in the early years of life increases the risk of chronic diseases such as hypertension, myocardial infarction, and diabetes in adulthood.⁶

There are scarce and contradictory studies on the prognosis of infants born to hypertensive mothers. There is evidence that exposure to oxidative stress in utero, triggered by maternal hypertensive disease, has implications in the pathogenesis of several diseases of preterm infants,³ and is associated with higher neonatal morbimortality, although it has not been established whether the worse prognosis of these preterm infants is due to maternal disease or degree of prematurity.^{3,7} However, some studies found no differences in the prognosis of preterm infants born to hypertensive mothers^{8,9} and others have suggested that stress in utero triggered by hypertension can accelerate the maturation of organs and improve the prognosis of these preterm infants.¹⁰ A recent study showed that most preterm infants born to

mothers with severe hypertension syndrome have intrauterine growth restriction and achieve complete "catch up" in the first 4 years, but at that age, these children are smaller and thinner compared to the population mean.¹¹

The scarcity and the lack of consensus of studies on the prognosis of premature infants born to mothers with gestational hypertension syndrome justify the need for surveillance of neonatal complications, and follow-up of these infants, for better understanding the impact of maternal disease on growth and development.

This study aimed to analyze the growth pattern of low birth-weight preterm infants born to hypertensive mothers, as well as to evaluate the occurrence of growth disorders and risk factors for inadequate growth at 24 months corrected age (CA).

Methods

This was a prospective cohort study of low birth weight preterm infants admitted to the Neonatal Care Unit and followed during the first 2 years of life at the Low Birth Weight Infant Outpatient Clinic of Faculdade de Medicina de Botucatu-UNESP, from January of 2009 to December of 2010.

The study was approved by the Research Ethics Committee of the institution. Maternal and neonatal data of interest were obtained from medical records at the first outpatient routine consultation, after obtaining the signed informed consent.

A convenience sample was studied, corresponding to the total number of patients who met the inclusion criteria during a two-year enrollment period, accepting a maximum loss of 20% of the cohort.

Download English Version:

<https://daneshyari.com/en/article/4153863>

Download Persian Version:

<https://daneshyari.com/article/4153863>

[Daneshyari.com](https://daneshyari.com)