



ORIGINAL ARTICLE

Influence of breastfeeding in the first months of life on blood pressure levels of preschool children[☆]

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KEYWORDS

Child;
Breastfeeding;
Blood pressure

Abstract

Objective: To investigate whether breastfeeding in early life affects blood pressure of preschoolers.

Methods: Cross-sectional study nested in a cohort from a municipality in the state of Minas Gerais, Brazil. All children in the cohort were invited for this study. Thus, between 2009 and 2010, blood pressure of 230 preschool children and their mothers, in addition to anthropometric variables, previous history, and socioeconomic status were evaluated. Blood pressure measurement was assessed in the morning, using automatic Omron[®] HEM-714INT and HEM-781INT devices to measure the blood pressure of preschool children and their mothers, respectively. Logistic regression was used to study the association between breastfeeding and blood pressure. The significance level was set at 5%.

Results: This study identified 19 (8.26%) preschool children with high blood pressure (values above the 90th percentile). High systolic blood pressure was associated with low birth weight (OR = 5.41; 95% CI = 1.45–20.23) and total breastfeeding duration of less than six months (OR = 4.14; 95% CI = 1.40–11.95). High diastolic blood pressure was not associated with any variable, whereas high systolic blood pressure/diastolic blood pressure ratio was associated with breastfeeding duration of less than six months (OR = 3.48; 95% CI = 1.34–9.1).

Conclusion: The results of this study indicate that preschoolers breastfed for a period of less than six months were more likely to have high blood pressure when compared to those breastfed for a longer period, suggesting a protective effect of breastfeeding against high blood pressure in this population.

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PALAVRAS-CHAVE

Criança;
Aleitamento
materno;
Pressão arterial

Influência do aleitamento materno nos primeiros meses de vida na pressão arterial de pré-escolares**Resumo**

Objetivo: Investigar se aleitamento nos primeiros meses de vida tem influência sobre a pressão arterial de pré-escolares.

Métodos: Estudo transversal aninhado numa coorte de nascidos num município mineiro. Foram convidadas para este estudo todas as crianças da coorte. Desse modo, entre 2009 e 2010, foram avaliados pressão arterial (PA) de 230 pré-escolares e de suas mães, além de variáveis antropométricas e pregressas e condição socioeconômica. A medida da PA foi feita de manhã, com os monitores automáticos de braço Omron® modelo HEM-714INT e HEM-781INT para medir a pressão arterial dos pré-escolares e de suas mães, respectivamente. Para o estudo da relação entre aleitamento materno e pressão arterial usou-se a regressão logística. O nível de significância adotado foi 5%.

Resultados: Foram identificados 19 (8,26%) pré-escolares com pressão arterial elevada (valores acima do percentil 90). A pressão arterial sistólica (PAS) elevada se associou ao baixo peso ao nascimento (OR = 5,41; IC 95% = 1,45-20,23) e ao período total de aleitamento materno inferior a seis meses (OR = 4,14; IC 95% = 1,40-11,95). Elevada pressão arterial diastólica (PAD) não se associou a qualquer variável e a PAS/PAD elevadas se associaram ao período de aleitamento materno inferior a seis meses (OR = 3,48; IC 95% = 1,34-9,1).

Conclusão: Os pré-escolares amamentados por um período inferior a seis meses, quando comparados com os que amamentaram por um período superior, apresentaram maior chance de estar com pressão arterial elevada, o que sugere efeito protetor do aleitamento materno contra elevação da pressão arterial na população estudada.

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Introduction

Some diseases that are usually observed in adults have been affecting children at an alarming rate; among them, excess weight and high blood pressure (BP) should be highlighted. Excess weight – overweight/obesity – has been considered a worldwide epidemic. The Household Budget Survey 2008–2009¹ disclosed that this problem affected approximately 33.5% of Brazilian children aged 5–9 years. According to Friedman et al.,² excess weight often accompanies an increase in BP.

High BP levels in childhood increase the chance of systemic arterial hypertension (SAH) in adults, and also contribute to cardiovascular disease.² Thus, the identification and early treatment of hypertension in childhood can prevent future adverse outcomes.

The Brazilian Society of Cardiology³ recommends that BP should be measured after three years of age, annually, or before that, when there are risk factors. However, the complex methodology established to verify BP in children makes many professionals exclude it from the routine examination or incorrectly interpret the measured values, which may result in underdiagnosis and undesirable consequences for these individuals.⁴ Thus, likely due to these factors, the prevalence of high BP in the pediatric group has long been considered irrelevant. However, several studies have identified that this condition has been common at this stage of life.^{5–11}

As with most chronic, noncommunicable diseases, the risk factors for hypertension include genetic components, lifestyle,^{3,12} and inadequate feeding practices.^{3,10} Some studies have suggested that breastfeeding may also be an important protective factor against cardiovascular diseases, hypertension, dyslipidemia, and obesity during childhood.¹³

However, the protective effect of breastfeeding against high BP is still controversial; while some studies have identified this effect,^{11,14} others have not.^{9,15}

For Balaban and Silva,¹⁶ nutritional experiences occurring during infants' first months of life can affect their susceptibility to chronic diseases in adulthood; this has been called metabolic imprinting, a term that describes a phenomenon by which an early nutritional experience that acts during a critical and specific period of development, which could lead to regulatory mechanism programming, such as BP regulation throughout life.¹⁷

In this sense, Horta et al.¹⁷ mention that different biological mechanisms can have an effect on this programming, among them the high concentration of long-chain polyunsaturated fatty acids, which are important structural components of cell membrane including the vascular endothelium.

Considering the abovementioned aspects, this study aimed to determine whether breastfeeding in the first months of life influences the BP of preschoolers.

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