



ORIGINAL ARTICLE

Febrile seizures: a population-based study[☆]



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KEYWORDS

Prevalence;
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Abstract

Objectives: To determine the prevalence of benign febrile seizures of childhood and describe the clinical and epidemiological profile of this population.

Methods: This was a population-based, cross-sectional study, carried out in the city of Barra do Bugres, MT, Brazil, from August 2012 to August 2013. Data were collected in two phases. In the first phase, a questionnaire that was previously validated in another Brazilian study was used to identify suspected cases of seizures. In the second phase, a neurological evaluation was performed to confirm diagnosis.

Results: The prevalence was 6.4/1000 inhabitants (95% CI: 3.8–10.1). There was no difference between genders. Simple febrile seizures were found in 88.8% of cases. A family history of febrile seizures in first-degree relatives and history of epilepsy was present in 33.3% and 11.1% of patients, respectively.

Conclusions: The prevalence of febrile seizures in Midwestern Brazil was lower than that found in other Brazilian regions, probably due to the inclusion only of febrile seizures with motor manifestations and differences in socioeconomic factors among the evaluated areas.

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PALAVRAS-CHAVE

Prevalência;
Crise febril;
Epidemiologia

Convulsão febril: estudo de base populacional

Resumo

Objetivos: Estabelecer a prevalência das crises febris e descrever o perfil clínico e epidemiológico dessa população.

Métodos: Estudo transversal de base populacional realizado na cidade de Barra do Bugres (MT), no período de agosto de 2012 a agosto de 2013. Os dados foram coletados em duas etapas. Na primeira fase utilizamos um questionário validado previamente em outro estudo brasileiro, para identificação de casos suspeitos de crises epiléticas. Na segunda etapa realizamos a avaliação neuroclínica para confirmação diagnóstica.

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Resultados: A prevalência de crise febril foi de 6,4/1000 habitantes (IC95% 3,8; 10,1). Não houve diferença entre os sexos. As crises febris simples foram encontradas em 88,8% dos casos. A história familiar de crise febril e epilepsia em parentes de 1° grau esteve presente em 33,3% e 11,1% dos pacientes, respectivamente.

Conclusões: A prevalência da crise febril na região centro-oeste foi menor do que a encontrada em outras regiões brasileiras, provavelmente relacionado à inclusão apenas das crises febris com manifestações motoras e as diferenças de fatores socioeconômicos entre as regiões pesquisadas. © 2015 Sociedade Brasileira de Pediatria. Publicado por Elsevier Editora Ltda. Todos os direitos reservados.

Introduction

Febrile seizures are the most common seizures in children younger than 5 years, affecting 2–5% of the pediatric population¹; they are considered to be benign and self-limited,² and are classified as simple and complex.¹ Upper airway viral infections are the most common triggering factors.^{3,4} The risk of subsequently developing epilepsy is 6.9%⁵; although they have an excellent prognosis, they bring anxiety to parents and family members.⁶

The clinical signs of febrile seizures are not different among populations, but the clinical and demographic characteristics are not identical in the different parts of the world,⁷ thus justifying the necessity of the present study. There is no Brazilian study that has described the clinical and epidemiological characteristics of patients with febrile seizures.

This study aimed to determine the prevalence and describe the clinical and epidemiological characteristics of patients with febrile seizures.

Methods

Study site and assessed population

The study was conducted in the municipality of Barra do Bugres, state of Mato Grosso, Brazil, from August 2012 to August 2013. The estimated population in 2013 was 33,022 inhabitants,⁸ with 3445 inhabitants aged between 0 and 5 years and 11 months, of whom 1775 were males and 1670 females.⁸ Approximately 60% of the population is of African descent. In the municipality, 77% of the households have sewerage and 55% have water supply services. The Human Development Index of the municipality is 0.693 and the *per capita* income, based the Gross Domestic Product (GDP) of 2012 was US\$ 6740.00.⁸ The municipality has six healthcare teams working for the Family Health Program (FHP) and forty-six healthcare workers attending to 75% of the population; the population that is not assisted by the FHP receives health care in a Basic Health Unit located downtown. The fact that the municipality has good FHP coverage and that the program works regularly facilitated this study.

Study phases

This was a cross-sectional, population-based study, performed in two phases. In the first phase, the healthcare workers performed an active search at the households, seeking suspected cases of seizures. A questionnaire with eight questions was used (Table 1). The questions were modified from the guidelines of the World Health Organization and are similar to the questions used in epidemiological studies conducted in Ecuador,⁹ and were previously validated in a Brazilian study with a sensitivity of 95.8% and specificity of 97.8%.¹⁰ This screening questionnaire was also used in a prevalence study of epilepsy in childhood in the state of São Paulo.¹¹ The healthcare workers were previously trained and received explanations on seizures/epilepsy and how to apply the questionnaire. The cases in which there was at least one affirmative response to the eight questions were referred to the second phase of the evaluation (diagnostic confirmation), when the clinical history was obtained and the neurological examination was performed.

This study was approved by the Ethics Committee of Hospital Geral Universitário (Registered under n.128 CEP/UNIC–protocol n. 2011-128).

Inclusion and exclusion criteria

Children with a history of at least one episode of febrile seizure residing in Barra do Bugres and aged 0–5 years were included in the study. Patients whose condition did not fit the definition of febrile seizures were excluded. Febrile seizures without motor symptoms were not considered, due the difficulty in ascertaining whether they were really epileptic seizures according to the description of the family members.

Definitions

Febrile seizures were defined as seizures occurring in children older than 1 month and younger than 5 years associated with febrile illness. This definition excluded seizures that occurred in the presence of central nervous system infection or cases with a history of epileptic seizures in the neonatal period, unprovoked seizures, and acute symptomatic seizures.¹² Febrile seizures can be classified as simple or complex; simple seizures are primarily generalized, lasting less than 15 min with no recurrence within 24h, whereas

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