



ORIGINAL ARTICLE

Prevalence of asthma and allergic diseases in adolescents: nine-year follow-up study (2003-2012)^{☆,☆☆}



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KEYWORDS

Asthma;
Adolescent;
Atopic eczema;
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Allergic rhinitis;
Rhinoconjunctivitis

Abstract

Objective: To determine the prevalence of symptoms of asthma, rhinitis, and atopic eczema in adolescents (AD; 13-14 years) living in seven Brazilian cities, by applying the standardized written questionnaire (WQ) of the International Study of Asthma and Allergies in Childhood (ISAAC), and to evaluate the time trend nine years after the last assessment of ISAAC phase 3 (ISP3).

Methods: The ISAAC-WQ was answered by 20,099 AD from the Northern, Northeastern, South-eastern, and Southern Brazilian regions. Values obtained were compared to those observed

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^{☆☆} Study conducted at the Discipline of Allergy, Clinical Immunology and Rheumatology, Department of Pediatrics, Escola Paulista de Medicina, Universidade Federal de São Paulo, São Paulo, SP, Brazil.

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in ISP3 using nonparametric (chi-squared or Fisher) tests, and the ratio of annual increment/decrement was established for each of the centers, according to the symptom assessed. *Results:* Considering the national data and comparing to values of ISP3, there was a decrease in the mean prevalence of active asthma (18.5% vs. 17.5%) and an increase in the frequency of severe asthma (4.5% vs. 4.7%) and physician-diagnosed asthma (14.3% vs. 17.6%). An increase in prevalence of rhinitis, rhinoconjunctivitis, and atopic eczema was also observed.

Conclusions: The prevalence of asthma, rhinitis, and atopic eczema in Brazil was variable; higher prevalence values, especially of asthma and eczema, were observed in regions located closer to the Equator.

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PALAVRAS-CHAVE

Asma;
Adolescente;
Eczema atópico;
Epidemiologia;
Rinite alérgica;
Rinoconjuntivite

Prevalência de asma e doenças alérgicas em adolescentes: estudo evolutivo de nove anos (2003 a 2012)

Resumo

Objetivo: Determinar a prevalência de sintomas relacionados à asma, rinite e eczema atópico em adolescentes (13-14 anos, AD) residentes em sete cidades brasileiras empregando o questionário escrito (QE) padronizado do *International Study of Asthma and Allergies in Childhood* (ISAAC) e verificar a tendência temporal passados nove anos da última avaliação do ISAAC fase 3 (ISF3).

Métodos: O QE ISAAC foi respondido por 20.099 AD (13-14 anos) moradores em centros das regiões Norte, Nordeste, Sudeste e Sul. Os índices obtidos foram comparados aos do ISF3 utilizando-se teste não paramétrico (qui-quadrado ou Fisher) e foi estabelecida a taxa de incremento/decremento anual para cada um dos centros segundo o sintoma avaliado.

Resultados: Em relação ao ISF3, considerando-se os dados nacionais, houve queda da prevalência média de asma ativa (18,5% vs. 17,5%) com elevação da frequência de asma grave (4,5% vs. 4,7%) e de asma diagnosticada por médico (14,3% vs. 17,6%). Aumento da prevalência de rinite e rinoconjuntivite e de eczema flexural também ocorreram.

Conclusões: A prevalência de asma, rinite e eczema atópico no Brasil foi variável. Valores mais altos, sobretudo de asma e eczema foram observados nos centros localizados mais próximos ao Equador.

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Introduction

The prevalence of asthma and allergic diseases in children has shown wide variation worldwide and according to some authors, it has increased, especially in developing countries.¹⁻⁵ Up to a few decades ago this knowledge was limited, for lack of a single, standardized, and validated tool to be used universally, and restricted to studies were performed in small samples, which precluded comparisons between different populations and at different times.

After the International Study of Asthma and Allergies in Childhood (ISAAC), which created a standardized protocol, such comparisons became possible; since then, have been widely performed.⁶ Before the ISAAC protocol, few studies, using the same tool (written questionnaire [WQ]), were able to evaluate the temporal trend of the prevalence of asthma, rhinitis, and atopic eczema in children. One of these studies assessed Norwegian children aged 7 to 14 years between 1985 and 2008, regarding the prevalence of asthma, rhinitis, and atopic eczema; a trend of increasing asthma and rhinitis prevalence and stabilization for eczema was observed.⁷ Another study, with a longer follow-up, conducted from

1964 to 2004 in English schoolchildren (7-12 years) observed declining rates of wheezing, with an increase in rhinoconjunctivitis and atopic eczema.⁸

The mean time between the completion of ISAAC Phase 1 (ISF1) and ISAAC Phase 3 (ISF3) was seven years, and the prevalence rates obtained in all centers that concurrently participated in both phases showed conflicting results, mainly in those centers that presented high values.² In Brazil, an increase in the prevalence of asthma symptoms in schoolchildren aged 6-7 years from 21.3% in ISF1 to 24.4% in ISF3 and a stable prevalence of rhinoconjunctivitis (12.5% and 12.0%, respectively) and atopic eczema (6.8% and 6.8%, respectively) were observed. Among adolescents (ADs) there was a decrease in prevalence rates of asthma symptoms (22.7% to 19.9%, respectively), rhinoconjunctivitis (16.2% to 15.8%, respectively), and atopic eczema (5.3% to 4.2%, respectively).²

At that time, there was no unanimous explanation for the previously observed findings. This study aimed to determine the variations in the prevalence of asthma, rhinitis, and atopic eczema in Brazilian ADs nine years after ISF3 was completed.

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