



ORIGINAL ARTICLE

## Prevalence and risk factors for wheezing in infants in the region of Pamplona, Spain

I. Alvarez-Alvarez<sup>a,\*</sup>, H. Niu<sup>a</sup>, I. Aguinaga-Ontoso<sup>a</sup>, F. Guillen-Grima<sup>a,b,c</sup>

<sup>a</sup> Department of Health Sciences, Public University of Navarre, Pamplona, Spain

<sup>b</sup> IDISNA, Navarra's Institute for Health Research, Pamplona, Spain

<sup>c</sup> Preventive Medicine, University of Navarra Clinic, Pamplona, Spain

Received 11 May 2015; accepted 11 August 2015

### KEYWORDS

Asthma;  
Epidemiology;  
Infant;  
Prevalence;  
Risk factors;  
Wheezing

### Abstract

**Background:** Wheezing in the first year of life affects the baby's and family's quality of life. Risk factors such as male gender, nursery attending or a family history of asthma, and protective factors such as breastfeeding more than six months have been previously described. The aim of this study is to study the prevalence and risk factors for wheezing ever and recurrent wheezing in the first year of life in infants in the region of Pamplona, Spain.

**Material and methods:** This cross-sectional study was part of the International Study of Wheezing in Infants (Estudio Internacional de Sibilancias en Lactantes, EISL). Between 2006 and 2008, participating families answered a standardised validated questionnaire on respiratory symptoms, environmental factors or family issues. An analysis with the chi square test (statistical significance  $p < 0.05$ ) identified the risk factors for wheezing ever and recurrent wheezing, which were assessed using logistic regression.

**Results:** 1065 questionnaires were answered. The prevalence of wheezing ever and recurrent wheezing were 31.2% and 12.3%, respectively. Male gender ( $p < 0.001$ ), a history of pneumonia ( $p < 0.001$ ) or nursery attendance ( $p < 0.001$ ) were some of the risk factors found for wheezing ever. Infant eczema ( $p < 0.001$ ), nursery attendance ( $p < 0.001$ ) or prematurity ( $p < 0.001$ ) were risk factors for recurrent wheezing. No associations with duration of breastfeeding ( $p = 0.116$  and  $p = 0.851$ ) or mould stains at home ( $p = 0.153$  and  $p = 0.992$ ) were found.

**Conclusion:** The study of prevalence and risk factors for wheezing shows the importance of this public health problem, and allows the development of control and treatment strategies against preventable factors.

© 2015 SEICAP. Published by Elsevier España, S.L.U. All rights reserved.

\* Corresponding author.

E-mail address: [alvarez.80114@e.unavarra.es](mailto:alvarez.80114@e.unavarra.es) (I. Alvarez-Alvarez).

## Introduction

Wheezing in infants is an important problem, affecting children's health-related quality of life,<sup>1</sup> and can lead to asthma in childhood.<sup>2,3</sup>

Prevalence of wheezing ever in infants varies across different regions, from 29% in countries in Northern Europe, to 48% in countries in Southern Europe, and 27% in the United States of America (USA).<sup>4</sup> Previous studies have found associations between rainy weather and severe current wheeze in schoolchildren,<sup>5</sup> and stronger associations of some risk and protective factors of recurrent wheezing when latitude increases.<sup>6</sup>

Several risk factors have been described, with the most important being male sex, familiar history of asthma, nursery attendance, history of pneumonia, smoking during pregnancy, mould stains in the house and breastfeeding fewer than six months.<sup>7-9</sup> Protective factors such as breastfeeding more than eight months<sup>10</sup> and adherence to the Mediterranean diet<sup>11</sup> have been found.

Although previous studies about wheezing in infants have been conducted, none of them have studied the epidemiology of the disease in the North of Spain. The aim of this cross-sectional study is to examine the prevalence and risk factors of wheezing ever and recurrent wheezing in the first year of life in infants from the region of Pamplona.

## Materials and methods

### Study population

This study was part of the International Study of Wheezing in Infants (in Spanish, Estudio Internacional de Sibilancias en Lactantes, EISL), an observational cross-sectional multicentre study conducted in countries of Europe and Latin America.<sup>12</sup>

In the region of Pamplona, this study was conducted between 2006 and 2008, where 20 primary care centres participated. The population of the study were the infants of the metropolitan area of Pamplona (an urban area consisting of Pamplona and adjacent cities) who went to a health check-up at 15 months of age. The sample size was 3284 infants (from urban localities), all the children in the age range (12–15 months of age). Random sampling was not carried out, the questionnaire was given to all families, who were asked to complete it and return after completion. The study was approved by the Management of Primary Care of Navarre's Health Service and the Scientific Ethic Committee of University of Murcia.

### Data collection

Paediatric nurses of the primary health centres explained the study to the families, and if they agreed to participate, after signing a full-informed written consent, a questionnaire and the instructions to complete it were given. Families filled out the questionnaire and could hand it in at the same primary health centre on the following visit, or send it to the Public University of Navarre by mail.

The questionnaire consisted of 74 questions about the infant (respiratory symptoms, feeding), his/her family (habits, diseases), environmental factors and pregnancy. No personal data were collected. This questionnaire has been previously validated.<sup>13</sup> A Spanish version of the questionnaire was back translated to Basque (an official regional language) by the Department of Euskera of the Public University of Navarre, and both models were available.

Wheeze ever was defined as a positive answer to the question "Has your child wheeze in the first 12 months of his/her life?" Recurrent wheeze was defined as three or more episodes of wheezing in the first year of life.

### Statistical analysis

A descriptive analysis was carried out. Chi Square and Student's-*t* test (as appropriate), with a statistical significance set at  $\alpha < 0.05$ , were performed in a univariate analysis to study the associations between the presence of wheezing ever and recurrent wheezing and factors, and the odds ratios (OR) with a confidence interval of 95% (95% CI) were calculated.

Non-conditional logistic regression analysis to calculate adjusted odds ratios (aOR) by sex and age was used in those factors with  $p < 0.1$ . Analyses were performed with IBM SPSS version 20 (Armonk, NY, USA).

## Results

A total of 1065 questionnaires were answered, which meant a participation rate of 32.4%. Results from the descriptive analysis are shown in Table 1. Prevalence of wheezing in the first year was 31.2% (327), and 12.3% (106) were recurrent wheezers. Most of the questionnaires were completed by the mothers (79.9%) or both parents (15.8%), and almost all the infants were Caucasian and had been born in Spain (96.8% and 99.5%, respectively). 121 (13.1%) infants had attended the Emergency Department due to the severity of wheezing, and 27 (2.7%) had been hospitalised once and three (0.3%) twice for this cause.

Risk factors for wheezing ever are shown in Table 2. A history of pneumonia, paternal allergic dermatitis and nursery attendance presented the largest OR. There were also associations between wheezing ever and a higher number of colds ( $p < 0.001$ ; aOR 1.164, 95% CI 1.102–1.230) and number of persons at home ( $p = 0.037$ ; aOR 1.155, 95% CI 1.008–1.323).

No associations were found with low weight at birth ( $p = 0.268$ ), pets, nor at birth or when the questionnaire was answered ( $p = 0.810$  and  $p = 0.372$ , respectively), mould stains in the house ( $p = 0.153$ ), or breastfeeding fewer than six months ( $p = 0.116$ ).

In Table 3, risk factors for recurrent wheezing are presented. A history of pneumonia, infant eczema, nursery attendance and prematurity at birth were the most important risk factors. Higher number of colds ( $p < 0.001$ ; aOR 1.381, 95% CI 1.266–1.505) and higher number of smokers at home ( $p = 0.029$ ; aOR 1.328; 95% CI 1.017–1.735) were also risk factors for recurrent wheezing. There were no associations with low weight at birth ( $p = 0.158$ ), mould stains

Download English Version:

<https://daneshyari.com/en/article/3339504>

Download Persian Version:

<https://daneshyari.com/article/3339504>

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