

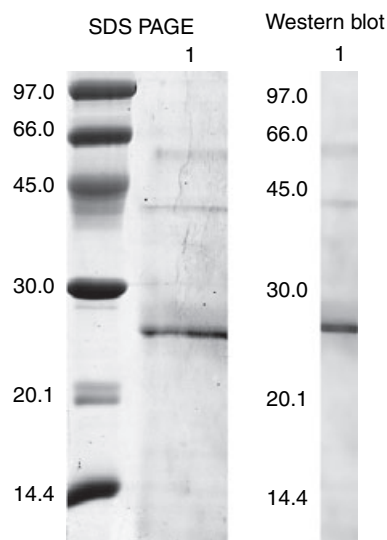


Figure 1. (A) Protein separation by 12.5% SDS PAGE (reducing conditions). LWM: molecular weight standard. Lane 1: *Phytolacca dioica* pollen

were 0.38, 0.35, and 3.2 IU/mL, respectively. Protein extracts of *P. dioica* pollen tree, were separated by sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE). The binding of IgE antibody to allergens was analyzed by Western blot using serum from the allergic patient and anti-human IgE peroxidase conjugate (Dako, Carpinteria, CA, USA). Protein separation by SDS PAGE showed three major bands with 26, 42, and 60 kDa and IgE-immunoblotting experiments performed with serum from this patient revealed an IgE-binding to these proteins (Fig. 1).

Phytolacca dioica is a frequent botanic specie in South America countries, present in different pollinic calendars (3, 6, 7). Although the pollination data are scarce, some authors suggest entomophylia (8).

Our results suggest that pollen of *P. dioica* can induce IgE-mediated allergic responses, we report a patient with rhinoconjunctivitis, and perhaps sibilance, caused by its pollen. The bibliographical search has not located similar communications about this pollen allergy.

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References

1. *Phytolacca dioica* L. Virtual herbarium of the Balearic islands. Laboratory of Botánica. Department of Biología. University of Balearic islands. <http://herbarivirtual.uib.es/eng-med/especie/4693.html>; accessed 12 January 2007.
2. Lessons hipertextuales of botánica. University of Extremadura. <http://www.unex.es/polen/LHB/caryophyllidae/phytolac.htm>; accessed 12 January 2007.
3. Neves PCP das, Bauermann SG, Bitencourt ALV, Souza PA, Marchioretto MS, Bordignon SAL et al. Palinoflora do estado do Rio Grande do Sul, Brasil: Phytolaccaceae R. BR. Revista Brasileira de Paleontologia 2006;9: 157–164.
4. Guix JC, Soler M, Martín M, Fosalba M, Mauri A. Introduction and colonization of alien plants in a Mediterranean area: historical evidence and quantitative analysis. Orsis 2001;16:145–185.
5. Reisfeld RA, Börjeson J, Chessin LN, Small PA Jr. Isolation and characterization of a mitogen from pokeweed (*Phytolacca americana*). Proc Natl Acad Sci USA 1967;58:2020–2027.
6. Lusardi M, Scandizzi A, McCargo J, Gattuso M, Gattuso S, Arduoso L et al. Blooming calendar of the most frequent botanic species of Rosario (Santa Fe), Argentina. Arch Alergia Immunol Clin 2001;32 (3):93–97.
7. Tejera L, Beri A. First volumetric airborne pollen sampling in Montevideo City, Uruguay. Aerobiologia 2005;21: 33–41.
8. Bernardello M, Galetto L, Juliani HR. Néctar, nectario y visitantes florales en *Phytolacca dioica* (Phytolaccaceae). Rev Bras Bot 1993;16:9–15.

Allergic rhinitis in the Italian population evaluated through the national database of general practitioners

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Key words: allergic rhinitis; general practitioners; prevalence.

Allergic rhinitis (AR) is probably the most common IgE mediated disease. Its prevalence in the general population in industrialized countries is reported to range between 10% and 20% (1) with a certain

variability that is attributable to the definitions used, to the methods of diagnosis and to the type of survey. It is hypothesized that the prevalence of AR remains underestimated, as a large proportion of patients do not seek for medical advice or specialist consultation. It is also conceivable that general practitioners (GPs) are, together with pharmacists, the first healthcare professionals to whom patients refer for their rhinitis symptoms (2). Although GPs with their databases have been sometime involved in epidemiological studies (3, 4), there is so far no evaluation of the prevalence of AR directly made by GPs. Thus, we searched a national GP database in order to get information on rhinitis prevalence in adults. A cross-search was also made for the prescriptions of antihistamines.

The data were obtained from the 'Health Search/Thales Database' (HSD), an Italian general practice research database set up in 1998 by the Italian College of General Practitioners (SIMG). Health Search/Thales Database includes, in electronic format, the complete medical data of all patients registered in the list of the physician (4, 5). Briefly, the HSD contains patient's demographic details, medical records (e.g. diagnoses, tests and tests results, hospitalization), drug history and prevention information. A unique identification number links all

Prevalence of rhinitis evaluated by general practitioners.

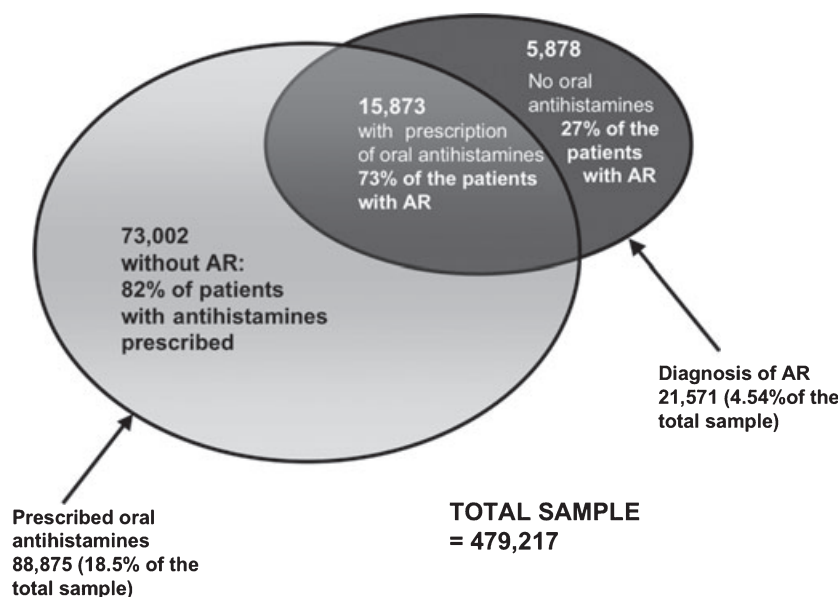


Figure 1. Distribution of the patients with a diagnosis of allergic rhinitis and those with antihistamines prescription in the general population ($n = 479\,217$) screened by the Health Search/Thales Database.

data for an individual patient anonymously, so that no direct identification is possible. All participating physicians had to use specially designed software allowing them to register all the disease episodes once and to link any medical intervention to the recorded disease. Data are subject to regular quality checks, mainly associated with the reliability, the completeness and the stability of the information recorded. General practitioners who fail to meet standard quality criteria are not involved in epidemiological studies (6).

The dynamic cohort searched, included all patients alive, aged > 18 years, permanently registered in the lists of the participating physicians until December 2003, and with available information for at least 1-year prior to the study. By means of HSD, we identified those subjects with a diagnosis of AR (ICD-9: 477), and those with at least one prescription of antihistamines (ATC: R06A) in the year 2003.

Based on the quality standards, 320 GPs were included in this study. The population screened by these 320 GPs involved 441 376 patients aged > 18 years (47% male). Of them, 19 789 had a diagnosis of AR, thus the overall prevalence was 4.5% with no significant difference among age deciles. Oral antihistamines had been prescribed to 18.6% of the general population. Thus, of the

patients with a diagnosis of AR, around 73.7% received one or more prescriptions of oral antihistamines, whereas 82.3% of the general population received antihistamines without a diagnosis of AR. These data are summarized in Fig. 1.

The main finding of this survey is that the prevalence of AR, as assessed by GPs in their database is, on average, lower than described in the large epidemiological studies. There are several possible explanations for this result. It is possible that AR is not spontaneously reported by some patients. Nevertheless, this cannot be the only determinant, as the electronic sheet of the computerized program has a specific entry for 'allergies and allergic diseases' that must be filled and updated at each visit. Another possible explanation is that the questionnaire-based surveys overestimate the prevalence of the disease because of the low specificity of the questions (4). On the other hand it is true that the majority of patients with a diagnosis of AR received systemic antihistamines that are considered a first-line therapy for the disease (7) and this confirms indirectly the appropriateness of the diagnosis itself. An accessory consideration is that the GPs' clinical database may represent an useful tool for epidemiological investigations, providing a realistic cross-sectional picture of the population seeking for primary care.

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References

1. European Community Respiratory Health Survey II Steering Committee. The European Community Respiratory Health Survey II. *Eur Respir J* 2002;**20**: 1071–1079.
2. Wang DY, Chan A, Smith JD. Management of allergic rhinitis: a common part of practice in primary care clinics. *Allergy* 2004;**59**:315–319.
3. Gupta R, Sheikh A, Strachan DP, Anderson HR. Burden of allergic disease in the UK: secondary analyses of national databases. *Clin Exp Allergy* 2004;**34**: 520–526.

4. Cricelli C, Mazzaglia G, Samani F, Marchi M, Sabatini A, Nardi R et al. Prevalence estimates of chronic diseases in Italy: exploring the differences between self-report and primary care databases. *J Public Health Med* 2003;**25**:254–257.
5. Filippi A, Vannuzzo D, Bignamini AA, Sessa E, Brignoli O, Mazzaglia G. Computerised general practice databases provides quick and cost-effective information about prevalence of angina pectoris. *Ital Heart J* 2005;**6**:49–51.
6. Lawrenson R, Williams T, Farmer R. Clinical information for research; the use of general practice databases. *J Public Health Med* 1999;**21**:299–304.
7. Bousquet J, van Cauwenberge P, Ait Khaled N, Bachert C, Baena-Cagnani CE, Bouchard J et al. Pharmacologic and anti-IgE treatment of allergic rhinitis ARIA update (in collaboration with GALEN). *Allergy* 2006;**61**:1086–1096.

Niox[®] and Niox Mino[®]: comparison of exhaled NO in grass pollen allergic adult volunteers

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Key words: comparison; exhaled NO; grass pollen allergy; Niox[®]–Niox Mino[®].

Many studies have demonstrated that the fraction of exhaled nitric oxide (FENO) is increased in asthmatics compared with healthy subjects (1). It is also increased, although to a lesser degree, among patients with allergic rhinitis without asthma (2). There is a positive correlation between FENO and bronchial inflammation. The measurement of exhaled NO is described as a simple, fast and non-invasive technique, which can be carried out for the diagnosis and management of asthma (3).

Niox[®] is a stationary, chemiluminescence-based NO analyzer for use in laboratory or hospital settings which is routinely used to measure the FENO. Recently, a hand-held device Niox Mino[®] (Aerocrine AB, Solna, Sweden)

has become available which measures FENO via an electrochemical sensor.

In this study, we compared FENO levels measured with Niox Mino[®] and Niox[®] in 27 adult volunteers (13 females and 14 males) allergic to grass pollen. All of them had moderate to severe rhinitis (ARIA) and 12 of them also had intermittent asthma (GINA). The mean age was 26.3 years (range 18–45). The inclusion criteria for the challenge tests were 1) clinical history of grass pollen allergic rhinitis, 2) positive skin prick test to grass pollen extract (Stallergènes[®], Antony, France), 3) specific immunoglobulin E to grass pollen ≥ 0.7 IU/ml (ImmunoCAP Phadia[®], Uppsala, Sweden), and 4) presence of non-specific bronchial reactivity to methacholine. They were subjected to two nasal and two bronchial challenge tests (NCT and BCT, respectively) with grass pollen extract out of the grass pollen season. Anterior Rhinomanometry (Rhinotest 2000, Allergopharma[®], Reinbeck, Germany) was performed during NCT and the test was considered positive if nasal flow decreased by at least 40%; or nasal resistance increased by at least 60%; or symptom score was ≥ 3 . The BCT performed using Spira Elektro 2 inhalation dosimeter, (Respiratory Care Center, Hameenlinna, Finland) was considered positive when FEV₁ dropped by 20% from the baseline.

FENO was measured at a flow rate of 50 ml/s during a 10 s period with Niox[®] and Niox Mino[®] consecutively before and after the NCT or BCT as well as 3, 6 and 24 h after the NCT or BCT by the same investigator. Three consecutive FENO values were measured with Niox[®] and the mean was calculated whereas a single FENO measurement was made using the Niox Mino[®] ($n = 414$). The data were compared using ANOVA for repeated measurements.

The mean baseline value was 36.9 ppb for Niox[®] and 43.1 ppb for Niox Mino[®] ($P < 0.0001$). We first analyzed the correlation between Niox[®] and Niox Mino[®] for each paired measurement (immediately before and after challenges, and 3, 6 and 24 h after challenges), then for each challenge test as a group (NCT or BCT). We obtained a strong correlation between Niox[®] and Niox Mino[®] ($r = 0.94–0.99$; $P < 0.0001$). We observed a statistically significant difference between the two devices for the paired measurements ($P < 0.0001$). The general correlation was 0.98 (Fig. 1). The Niox Mino[®] device always gave higher values than the Niox[®]. The intra-subject median difference between the Niox Mino[®] and the Niox[®] was 7.2 ppb (range: 6.5–8.0). Analyzing the evolution of FENO during the NCT and BCT, we observed that the difference between Niox and Niox Mino remained almost unaltered.

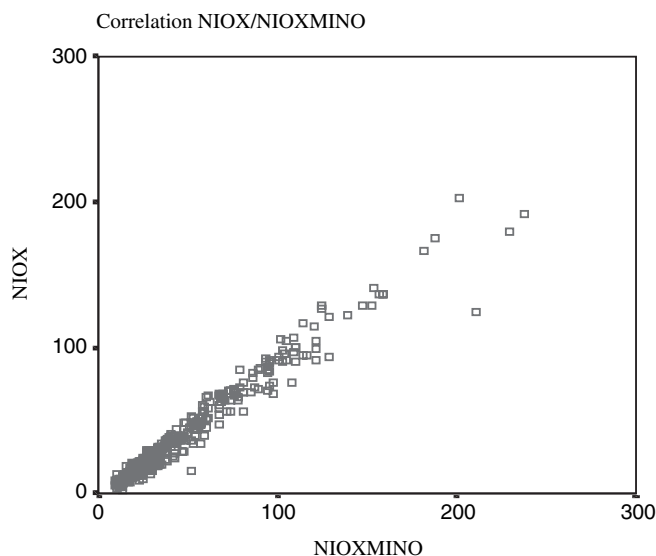


Figure 1. Device agreement: the correlation between Niox[®] and Niox Mino[®] (ppb), $r = 0.98$, $P < 0.0001$.