



Non-steroidal anti-inflammatory drug hypersensitivity in adults and the factors associated with asthma



Gul Karakaya, Ebru Celebioglu*, A. Fuat Kalyoncu

Hacettepe University, School of Medicine, Department of Chest Diseases, Adult Allergy Unit, 06100 Sıhhiye, Ankara, Turkey

Received 30 December 2012; accepted 20 March 2013

Available online 30 April 2013

KEYWORDS

Nonsteroidal anti-inflammatory drugs;
Aspirin exacerbated respiratory disease;
Chronic urticaria;
Nonsteroidal anti-inflammatory drug hypersensitivity;
Asthma

Summary

Background: Characteristics of non-steroidal anti-inflammatory drug (NSAID)-hypersensitivity (NH) associated with underlying/accompanying diseases has not been studied in Turkey. In addition, the factors associated with asthma in NH patients are not well known. The present study aimed to investigate the relationship between NH and chronic urticaria, rhinitis/rhinosinusitis, and asthma in an effort to identify NH phenotypes. The study's secondary aim was to identify the factors associated with asthma in NH patients and the NSAID reaction pattern in asthmatics.

Methods: Data for 1137 NH patients in our hospital's allergy clinic database were retrospectively analyzed. Patients were divided into 5 groups based on their accompanying diseases (chronic urticaria, asthma, rhinitis/rhinosinusitis). Asthmatic patients were compared to non-asthmatic patients to identify the factors associated with asthma.

Results: Reaction patterns and patient characteristics in each group differed from those in the reference group (NH only group). Asthma in patients with NH was associated with female gender, sinonasal polyposis/polyp surgery, rhinitis/rhinosinusitis, NSAID-induced rhinitis/asthma or a blended reaction pattern, immediate reaction following NSAID intake, self-reported history of food allergy, and family history of asthma; the odds ratios and 95% CIs were 1.35 (1.02–1.78), 13.52 (8.74–20.9)/10.94 (6.73–17.77), 12.06 (9–16.17), 15.28 (10.45–22.36)/2.43 (1.70–3.45), 1.76 (1.31–2.35), 1.49 (1.04–2.14), and 3.1 (2.35–4.08), respectively. The characteristics of the asthmatic patients that had urticaria/angioedema-type reactions to NSAID intake (pseudo Samter's syndrome) differed from those in the asthmatics with rhinitis/asthma-type reactions.

* Corresponding author. Tel.: +90 312 305 1721; fax: +90 312 305 3096.
E-mail address: edamadoglu@yahoo.co.uk (E. Celebioglu).

Conclusions: Chronic urticaria, rhinitis, and asthma commonly accompany NH. NSAID response patterns in NH patients may help differentiate groups of patients. The present study identified factors associated with asthma in NH patients and observed that there seems to be different phenotypes of Samter's syndrome, for which a new classification scheme was proposed.

© 2013 Elsevier Ltd. All rights reserved.

Introduction

Non-steroidal anti-inflammatory drugs (NSAIDs) account for 21%–25% of adverse drug events, and are the second most common cause of drug-induced hypersensitivity reactions.^{1,2} A recent EAACI/ENDA group review published data on the pathomechanisms and clinical spectrum of hypersensitivity reactions caused by NSAIDs.¹ Depending on the diagnostic methods used and study design, NSAID-hypersensitivity (NH) in adult asthmatic patients, patients with bronchial asthma and nasal polyps, and patients with chronic urticaria can be as high as 21%, 25.6%, and 35%, respectively; however, despite these high prevalences there is lack of knowledge of the predictors of the clinical course of NH, which could be of critical importance to clinicians.^{3–5}

Aspirin, one of the most commonly consumed NSAIDs, can induce wheals/angioedema in patients with chronic urticaria via inhibition of COX-1.⁶ Such eicosanoid alterations in patients with chronic idiopathic urticaria and aspirin sensitivity are similar to those observed in aspirin-exacerbated respiratory disease (AERD).⁷ Although the pathomechanisms of aspirin-induced urticaria/angioedema and AERD appear similar, there should be some differences, or the 2 are different phenotypes of the same disease.

The presence of asthma and aspirin-induced asthmatic symptom exacerbation is commonly referred as Samter's syndrome, aspirin-induced asthma, or AERD.^{8,9} There is also a sub-group of patients with asthma and NH that experience urticaria/angioedema-type reactions instead of bronchospasm in response to NSAIDs. The proportion of this sub-group among asthmatics with NH is unknown; these patients may constitute a different spectrum of Samter's syndrome.

Characterizing NH can help improve clinician's ability to determine a prognosis and disease course. Some patients can go into remission when the underlying disease subsides, whereas asthma and/or rhinitis and/or chronic urticaria can occur during the course of NH. As such, the present study aimed to investigate the relation between NH and chronic urticaria, rhinitis/rhinosinusitis, and asthma, and to define NH phenotypes. The study's secondary aim was to identify the factors associated with asthma in NH patients and the NSAID reaction pattern of asthmatics.

Materials and methods

Data collection

Data for 1137 patients diagnosed with NH-with or without concurrent asthma, rhinitis/rhinosinusitis, and chronic urticaria-that presented to Hacettepe University, School of Medicine, Adult Allergy Clinic, Ankara, Turkey, between January 1991 and December 2010 were retrospectively

reviewed using the allergy clinic database. Data in the database were collected prospectively. Patient age, gender, NSAID reaction patterns, accompanying diseases (rhinitis/rhinosinusitis, asthma, chronic urticaria, and metal allergy), family history of asthma/rhinitis/rhinosinusitis/NH, self-reported NSAID reaction patterns, age of onset of NH/asthma/rhinitis, and diagnostic work-up findings were recorded in the allergy clinic database. Asthma and rhinitis were diagnosed by allergy specialists at the study center based on international and national asthma/rhinitis guidelines (GINA, ARIA and national guidelines), and the diagnosis and surgical treatment of nasal polyps was made by otorhinolaryngologists at the same center. Chronic urticaria was defined as spontaneous wheals and/or angioedema >6weeks in duration.¹⁰

Patients

A reliable clinical history of ≥ 2 events with the same NSAID or ≥ 2 events with unrelated NSAIDs, or in case of an unreliable history, a positive oral challenge with the tested NSAID were required for the diagnosis of NH. Patients with delayed-type (reaction after 24 h of NSAID intake) skin or systemic reactions to NSAIDs were not recorded into the database. Single-blind oral drug provocation tests were performed to confirm the diagnosis of NH (in cases with an unreliable history) and/or to identify alternative analgesics (in cases of a reliable history) following presentation to the allergy clinic.¹ As this is a data review study, all patients diagnosed as NH between January 1991 and December 2010 were included in the analysis. All patients met the indication criteria for drug provocation testing described by the European Network for Drug Allergy and European Network on Hypersensitivity to Aspirin and Non-steroidal Anti-Inflammatory Drugs.^{1,11} Written informed consent was obtained from each patient before each provocation test and the study protocol was approved by the Hacettepe University Ethics Committee (HEK 12/188-38).

While identifying safe alternative analgesics for patients that did not reside in Ankara, in order to minimize cost and manpower expenditures some patients were tested via the **Hacettepe method** (triple test) starting in September 2002.^{12,13} Patients that were tolerant to a limited number of alternative analgesics (e.g. only paracetamol) were tested with codeine.¹⁴

Patients were divided into the following 5 groups: NH-N: NH with no underlying disease (reference group); NH-A: NH with asthma; NH-U: NH with chronic urticaria; NH-R: NH with rhinitis; NH-O: NH and any combination of rhinitis, asthma, and chronic urticaria.

Based on each patient's history, NSAID reaction patterns were classified as follows: anaphylaxis, urticaria/angioedema, rhinitis/asthma, and blended reactions

Download English Version:

<https://daneshyari.com/en/article/6242143>

Download Persian Version:

<https://daneshyari.com/article/6242143>

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