

Review

The Role of the Pharmacist in Providing Prevention and Treatment of Respiratory Allergies: A Review

Anna Todorova^{1*} and Antoaneta Tsvetkova²

Abstract

¹Faculty of Pharmacy, Medical University of Varna

²Assistant Pharmacists Education and Research Center, Medical College of Varna

*Corresponding Author's Email:
annitodorova@abv.bg

Pharmacists act as intermediaries between physicians and patients in ensuring effective prevention and treatment of chronic diseases. Since the prevalence of allergic rhinitis and bronchial asthma is increasing worldwide, we have summarized the available documents and guidelines designed to assist pharmacists in patient counseling. Pharmacists play a key role in achieving and maintaining control of respiratory allergies by promoting rational drug use, preventing the development of asthma in patients with allergic rhinitis, and referring patients for timely diagnosis and appropriate treatment.

Keywords: Allergic Rhinitis (AR), Asthma, Consultation, Pharmacists, Pharmaceutical care

INTRODUCTION

The role of the pharmacist in the contemporary society

Since the beginning of the 21st century the focus of pharmacy practice has shifted from preparation and dispensing of medical products to patient counseling. Given the increasing requirements imposed on pharmacy practices in the EU, and the numerous reports on the connection between morbidity/mortality and pharmacotherapy, the Bulgarian pharmaceutical union (BPU) adopted the standards of good pharmacy practice (GPP) in 2009. The compliance with GPP standards underpins the improvement of high-quality pharmaceutical care and services provided by pharmacists (Standards of good pharmacy practice (approved by the Minister of Health, 62-00-70-08 / 11.03.2009)). The concept of pharmaceutical care implies rationalizing the drug use process in order to achieve optimal therapeutic results and improve the quality of patients' life (Foppe et al., 2004).

Pharmacists are the medical professionals who are most frequently visited by patients and most accessible to the public. The role of the pharmacist in improving public health comprises various activities – promoting healthy

life style, providing patients with medical information, participating in consumer education on responsible self-medication, enhancing rational public drug use (Standards of good pharmacy practice (approved by the Minister of Health, 62-00-70-08 / 11.03.2009)) and patient counseling on disease prevention.

Patients with chronic diseases whose medical condition requires a drug therapy visit pharmacists more frequently than any other health care specialists. This enables pharmacists to engage actively in disease monitoring of patients and, in case treatment modality needs to be changed, to act as intermediaries between patients and physicians in choosing the appropriate therapy.

It is often the case that patients who consult the pharmacist have not received any diagnosis of their chronic disease. In such a case, the pharmacist should provide quality pharmaceutical services and an assessment of patient's condition, and then refer the patient to a doctor.

Pharmacists' skills and competence are essential for optimizing the use of drugs, for achieving better value from pharmacotherapy of patients, and for reducing the overall cost of health care (<http://www.pgeu.eu>)

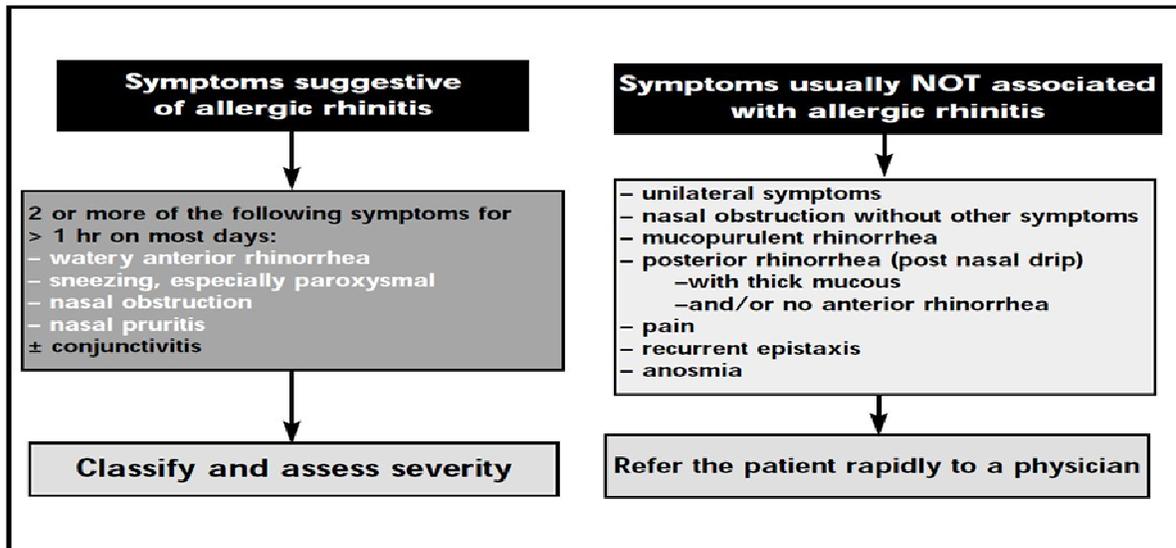


Figure 1. Recognizing allergic rhinitis and differentiating allergy from other causes including infection (http://www.whiar.org/docs/ARIA_Pharm_PG.pdfARIA Pocket Guide for Pharmacists. In Edition (2003)

Pharmaceutical Group of European Union (2012).

The global burden of allergic rhinitis and bronchial asthma

Over the past decade, the prevalence of allergic rhinitis and bronchial asthma has increased worldwide. Data from epidemiological studies and WHO show that over 500 million people around the globe suffer from allergic rhinitis and the number of people with asthma is 300 million (<http://www.who.int/inf-fs/en/fact206.html>. World Health Organization. Bronchial asthma. WHO Fact Sheet # (2006). Allergic rhinitis and bronchial asthma are common co-morbidities and often coexist in the same patient. According to global data, over 70% of patients with asthma have concomitant allergic rhinitis and over 50% of patients with allergic rhinitis suffer from concurrent asthma (Linneberg et al., 2002). Therefore, both allergic rhinitis and bronchial asthma should be treated as a manifestation of one pathological process of the respiratory system.

Low public awareness of allergies as serious chronic diseases is identified as a major issue. Patients suffering from respiratory allergies are not fully aware of the importance of appropriate treatment and the implications of disease development. Patients, especially those with mild allergies, tend to adapt to their symptoms or resort to self-medication without consulting physicians (Bousquet et al., 2003). According to the data published, only 45% of patients with allergic rhinitis in Europe seek medical advice or disease treatment (Canonica et al., 2007). When AR remains undiagnosed or untreated, it increases the risk of development of asthma by about three times,

negatively affects asthma attacks, and increases the likelihood of hospitalization by 50% (Pawankar et al., 2011-2012). Through ARIA (Allergic Rhinitis and Its Impact on Asthma) Initiative, WHO educates the public and provides guidelines for treatment of allergic rhinitis to prevent its progression to asthma.

ARIA in the pharmacy

In accordance with ARIA guidelines, pharmacists play a key role in recognizing allergic rhinitis, assessing its severity and differentiating symptoms of allergic rhinitis from other symptoms including infection (http://www.whiar.org/docs/ARIA_Pharm_PG.pdfARIA Pocket Guide for Pharmacists. In Edition (2003). (Figure 1)

When pharmacists consult patients with symptoms such as sneezing, rhinorrhea, nasal obstruction and/or nasal pruritus, and conjunctivitis persisting on most days of the week, they should consider the presence of AR. It is necessary for them to be able to recognize symptoms of conjunctivitis associated with allergic rhinitis. Bilateral eye symptoms of conjunctivitis such as watery or red eyes and eye itching are common in patients with AR, whereas the presence of eye burning and photophobia is rarely caused by allergy (http://www.whiar.org/docs/ARIA_Pharm_PG.pdfARIA Pocket Guide for Pharmacists. In Edition (2003).

Pharmacists should be able to recognize different types of allergic rhinitis in order to counsel patients on appropriate therapy with over-the-counter drugs. Figure 2 below displays ARIA classification for assessing the severity of patient's condition. This classification underpins the appropriate choice of treatment and the

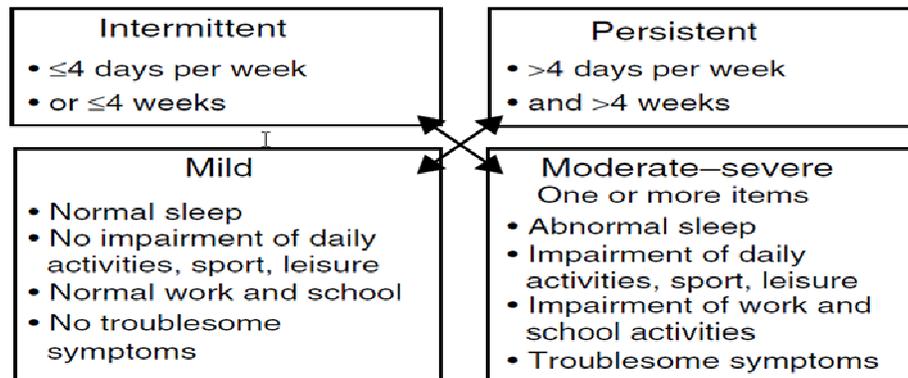


Figure 2. Classification of allergic rhinitis according to ARIA (<http://www.whiar.com> Allergic Rhinitis and Its Impact on Asthma (ARIA) (2003)

successful disease management.

The classification introduced by ARIA differentiates two types of allergic rhinitis – intermittent and persistent, thus replacing the previous classification of seasonal and perennial forms. Intermittent AR is defined by symptoms that occur for up to four days per week and for less than four consecutive weeks, whereas persistent AR lasts for more than four days per week and its duration exceeds four consecutive weeks. Based on the severity of symptoms and the level of related impairment in patients' quality of life, allergic rhinitis is classified as mild, moderate-severe and severe. The pharmacist can contribute to reducing the risk of asthma development and improving patient's condition by managing and monitoring an adequate treatment.

Patients under 12 years should be diagnosed with AR by a physician before the initiation of any pharmacotherapy including OTC drugs, since childhood symptoms of AR resemble symptoms of other diseases (Krista and Jaime, 2008). According to medical professionals, childhood allergic rhinitis is difficult to be distinguished from infectious rhinitis. The prevalence of infectious rhinitis is predominant in children aged 3-7 years, whereas school-age children and adolescents mainly suffer from allergic rhinitis (National consensus on the diagnosis, prevention and treatment of childhood asthma, Sofia (2003).

ARIA pharmacy protocol for treating allergic rhinitis in pharmacies

The treatment of AR in accordance with ARIA and WHO should include: avoidance of specific allergen (allergens) or other allergic triggers, pharmacological therapy, immunotherapy and patient education. There is a wide range of medicines for pharmacological treatment. The chosen therapy should be consistent with the specific clinical symptoms and the treatment modality could include one or more drugs depending on the severity of

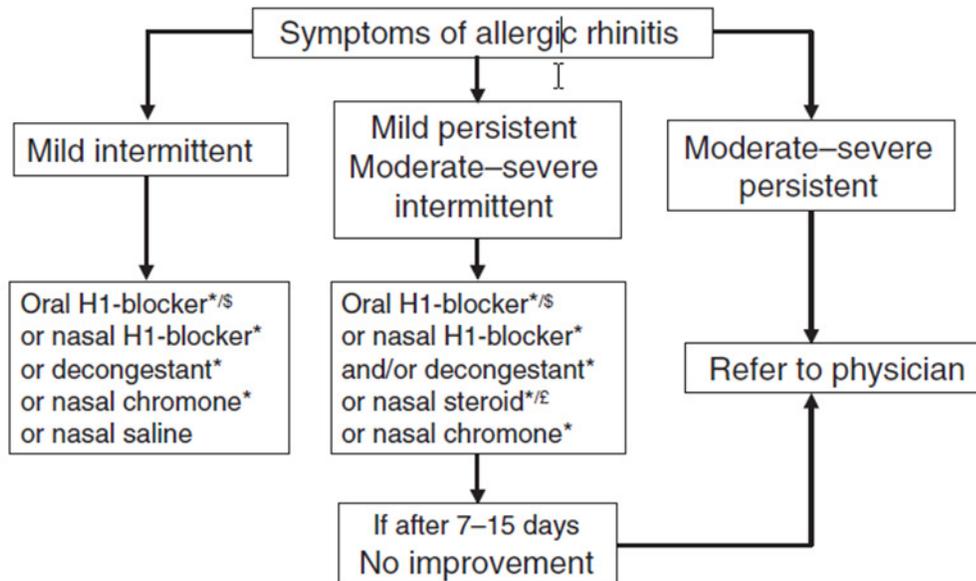
the disease. Figure 3 below shows the recommendable pharmacist's approach in counseling patients with allergic rhinitis according to ARIA guidelines.

According to ARIA, the first-line therapy of AR should be local or oral non-sedating H1-blockers regardless of the type of AR or the severity of clinical symptoms. Second-generation oral antihistamines, such as Cetirizine, Levocetirizine, Loratadine, Desloratadine and Fexofenadine, are preferred for the treatment of childhood AR for two main reasons: the absence of adverse side effects upon the central nervous system (such as drowsiness or fatigue), and their high affinity to H1 receptors (Dykewicz and Fineman, 1998). However, the use of antihistamines as drugs with OTC status raises serious safety issues in terms of their indiscriminate use without a prescription from a physician (Zyrtec, 2007). This places additional emphasis on the role of the pharmacist as a source of medical information and professional advice to patients with intermittent and mild persistent AR whose condition can be managed and controlled.

Cromoglycates (Natriumcromoglicat, Nedocromil Natrium) increase the control over the symptoms of allergic rhinitis, being especially effective over a longer period. Their greatest advantage is their excellent safety profile which makes them suitable for children and pregnant women. They are more effective if administered before exposure to allergens, i.e. as a pre-season treatment (Krista and Jaime, 2008).

Intranasal decongestants (pseudoephedrine) can be administered separately or in combination with antihistamines. They are recommendable for a short-term use (not more than five days, preferably less) because they increase the risk of irreversible damage to nasal mucous membranes. ARIA guidelines suggest intranasal decongestants should be avoided by pre-school children because of possible serious adverse effects (http://www.whiar.org/docs/ARIAReport_2010.pdf Allergic Rhinitis and its Impact on Asthma (ARIA) (2010).

According to the revised version of ARIA, intranasal

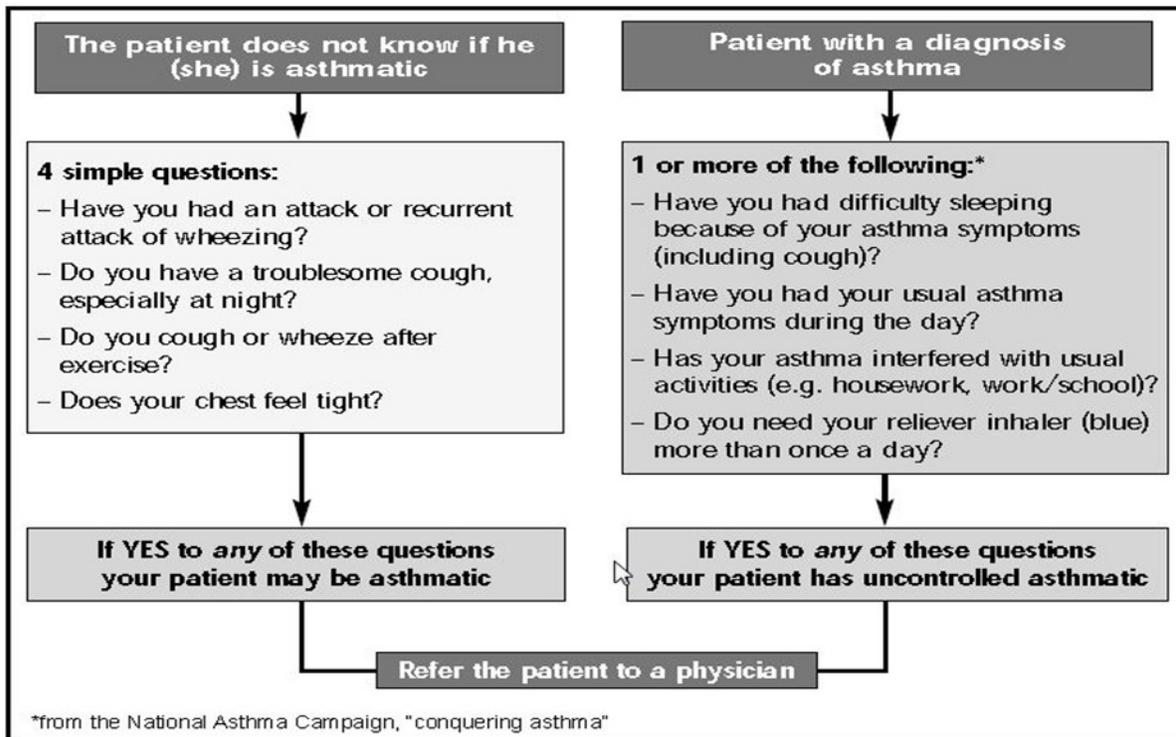


* depending on drug availability and not in preferred order

§ non-sedating H1-blockers should be preferred

£ if nasal obstruction predominates, intranasal steroids are the first-line treatment

Figure 3. Selection of allergic rhinitis treatment by pharmacists (http://www.whiar.org/docs/ARIA_Pharm_PG.pdfARIA Pocket Guide for Pharmacists. In Edition (2003)



*from the National Asthma Campaign, "conquering asthma"

Figure 4. Assessing asthma in a patient with persistent allergic rhinitis (http://www.whiar.org/docs/ARIA_Pharm_PG.pdfARIA Pocket Guide for Pharmacists. In Edition (2003)

corticosteroids are the most effective therapy of AR and the first-line treatment of patients with moderate to severe

AR or patients who don't respond to regularly administered antihistamines (Brozek et al., 2010). Under

the current Bulgarian legislation, intranasal corticosteroids are prescription-only medicines.

An important approach in AR treatment is the nasal lavage. Whenever possible, the elimination of allergens is recommendable. Over the past years, the use of saline solutions for nasal lavage has been constantly increasing. The nasal lavage eliminates allergens from the nasal canals, provides sinus irrigation and has a decongestant effect.

The management of allergic rhinitis and asthma in the pharmacy

Being a part of one and the same pathological process of a single airway, allergic rhinitis and bronchial asthma are often comorbid conditions. Surveys conducted in Europe and the USA show that one third of school-age children with AR or BA may be undiagnosed. This often entails an untreated disease which can result in exacerbations and quality-of-life impairment (Pawankar et al., 2011-2012). According to GINA (Global Initiative for Asthma), commonly reported symptoms of undiagnosed asthma are shortness of breath and wheezing attacks, disturbing cough (especially at night), coughing or shortness of breath after physical activities, chest tightness (<http://www.ginasthma.org> The Global Initiative for Asthma (GINA) (2013)). In case the patient reports any of the above mentioned symptoms, the pharmacist should promptly refer the patient for a consultation with a physician. Figure 4 above displays ARIA recommendations to pharmacists in case of suspected undiagnosed asthma and the necessary steps in disease control and surveillance.

Allergy is a disease that should be monitored even in the absence of exacerbations. The role of the pharmacist comprises various activities – monitoring of treatment and self-medication, compliance assessment, monitoring of patient's condition. According to the common guidelines for pharmacists, patients with allergic rhinitis should be questioned and monitored for symptoms of concomitant asthma, and patients diagnosed with asthma should be questioned for symptoms of allergic rhinitis.

Patients should be educated to avoid exposure to allergens and other triggers, to use appropriately medications, to be aware of the possible side effects of the chosen treatment, to be fully aware of the complications of allergic rhinitis and its impact on asthma.

CONCLUSION

Regardless of the knowledge accrued and the clinical experience acquired, allergic rhinitis is still an under diagnosed disease. Timely diagnosis and appropriate treatment can improve patients' quality of life and have a positive influence upon the frequency and severity of this comorbid pathology. The key to effective treatment and successful management of respiratory allergies is the collaboration and the teamwork of patients, pharmacists and medical professionals.

REFERENCES

- Bousquet J, van Cauwenberge P, Khaltaev N (2003). Allergic rhinitis and its impact on asthma (ARIA) - Executive summary. *Allergy*;57:841–855
- Brozek J, Bousquet J, Baena-Cagnani C, Bonini S, Canonica GW, Casale TB, (2010). Allergic rhinitis and its impact on asthma (ARIA) guidelines: 2010 revision. *J. Allergy and Clinical Immunol.* 126: 466-476
- Canonica GW, Bousquet J, Mullol J, Scadding GK, Virchow JC. (2007). A survey of the burden of allergic rhinitis in Europe. *Allergy*; 62 Suppl 85: 17-25
- Dykewicz MS, Fineman S (1998). Executive summary of Joint Task Force Practice Parameters on Diagnosis and Management of Rhinitis. *Ann Allergy Asthma Immunol.* 81:463-468.
- Foppe JW van Mil, Martin S, Th FJ. (Dick) Tromp (2004). Pharmaceutical care. European developments in concepts, implementation, teaching, and research: a review *Pharm World Sci.* 26: 303–311
- <http://www.ginasthma.org> TheGlobalInitiativeforAsthma (GINA) (2013)
- <http://www.pgeu.eu> Pharmaceutical Group of European Union (2012)
- <http://www.whiar.com> Allergic Rhinitis and Its Impact on Asthma (ARIA)
- http://www.whiar.org/docs/ARIA_Pharm_PG.pdfARIA Pocket Guide for Pharmacists. In Edition (2003)
- http://www.whiar.org/docs/ARIAReport_2010.pdf Allergic Rhinitis and its Impact on Asthma (ARIA) (2010) Revision
- <http://www.who.int/inf-fs/en/fact206.html>.World Health Organization. Bronchial asthma. WHO Fact Sheet # 2006.
- Krista JS, Jaime RH (2008). AdvancementsintheManagement of Allergic rhinitis, *US Pharm.* 33(7):26-34.
- Linneberg A, HenrikNielsen N, Frolund L ,Madsen F, Dirksen A, Jorgensen T (2002). The link between allergic rhinitis and allergic asthma: a prospectivepopulation-basedstudy. *The Copenhagen Allergy Study.* *Allergy*; 57: 1048-1052
- National consensus on the diagnosis, prevention and treatment of childhood asthma, Sofia (2003)
- Pawankar R, Canonica G, Holgate S, Lockey R (2011-2012). WAO White Book on Allergy. In Edition Milwaukee, Wisconsin, USA: WAO2011.
- Standards of good pharmacy practice (approved by the Minister of Health, 62-00-70-08 / 11.03.2009)
- Zyrtec (2007). (cetirizine) package insert. Fort Washington, PA: McNeil-PPC, Inc