



Allergic Rhinitis and Respiratory Allergy

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Glenis was President of the British Society for Allergy and Clinical Immunology (BSACI) 2009–12. In 2006 she won their William Frankland Award for outstanding contribution to clinical allergy in the UK and in 2020 she gave the Jack Pepys lecture at the BSACI Annual meeting. She was Allergy UK Allergist of the Year in 2011 and was awarded British Medical Association (Walter Jobson Horne for ENT research), European Academy of Allergy and Clinical Immunology (Clemens von Pirquet for Research in Allergy) and WAO prizes (Outstanding Clinician) in recent years.

Currently she is Scientific Chief Editor for the Rhinology Section of Frontiers in Allergy, Lead for Allergic Rhinitis at EUFOREA and lead author of the BSACI Rhinitis Management Guidelines.

Dr Scadding's research interests include rhinitis, rhinosinusitis and their co-morbidities, including asthma, particularly non-steroidal anti-inflammatory-exacerbated asthma (N-ERD). She is the author of over 300 peer-reviewed scientific publications. In her spare time she is a gardener, eco-warrior and novelist with a first book, "Colchicum- a Cure for Dementia?"

Introduction / Prevalence

Hay fever, or seasonal allergic rhinitis (SAR), is an immunological disorder⁽¹⁾ which now affects around a quarter of the UK population; having been a rare disease of the upper classes two hundred years ago. The reasons for this increased prevalence, though not entirely known, appear to be both genetic and environmental. The latter probably relate mainly to the microbiome and its effects upon the direction of immunity, but factors such as atmospheric pollutants may also be relevant⁽²⁻⁴⁾.

Symptom recognition

The symptoms are those of nasal running, blocking, sneezing and itching. The eyes are also involved in 70% of sufferers, with redness, itching and weeping. However these symptoms are the tip of the iceberg⁽⁵⁾. AR significantly reduces quality of life (QoL)^(6,7) and also reduces sleep quality.⁽⁸⁾ This leads to impairment of mood and cognitive ability⁽⁹⁾, decreases in school/work performance^(10,11) and reduced driving safety⁽¹²⁾. Both allergic rhinitis and inhalant atopy during childhood can predispose to asthma later in life and can reduce control of existing asthma⁽¹³⁾.

AR management

a) Diagnosis

The EUFOREA Allergic Rhinitis (AR) Pocket Guide is the most recent and most comprehensive AR guideline. Its algorithm (Figure 1) gives a blueprint for AR management⁽¹⁴⁾. Many long- term sufferers self- diagnose and self- treat, recognising the association between their symptoms and the pollen season. De novo hay fever may be initially misdiagnosed as a summer cold. The major differences between hay fever, summer colds and COVID-19 are shown in Figure 2.

Figure 1: Treatment algorithm for AR as proposed by EUFOREA, taking into account the reality of patient phenotypes and existing international guidelines

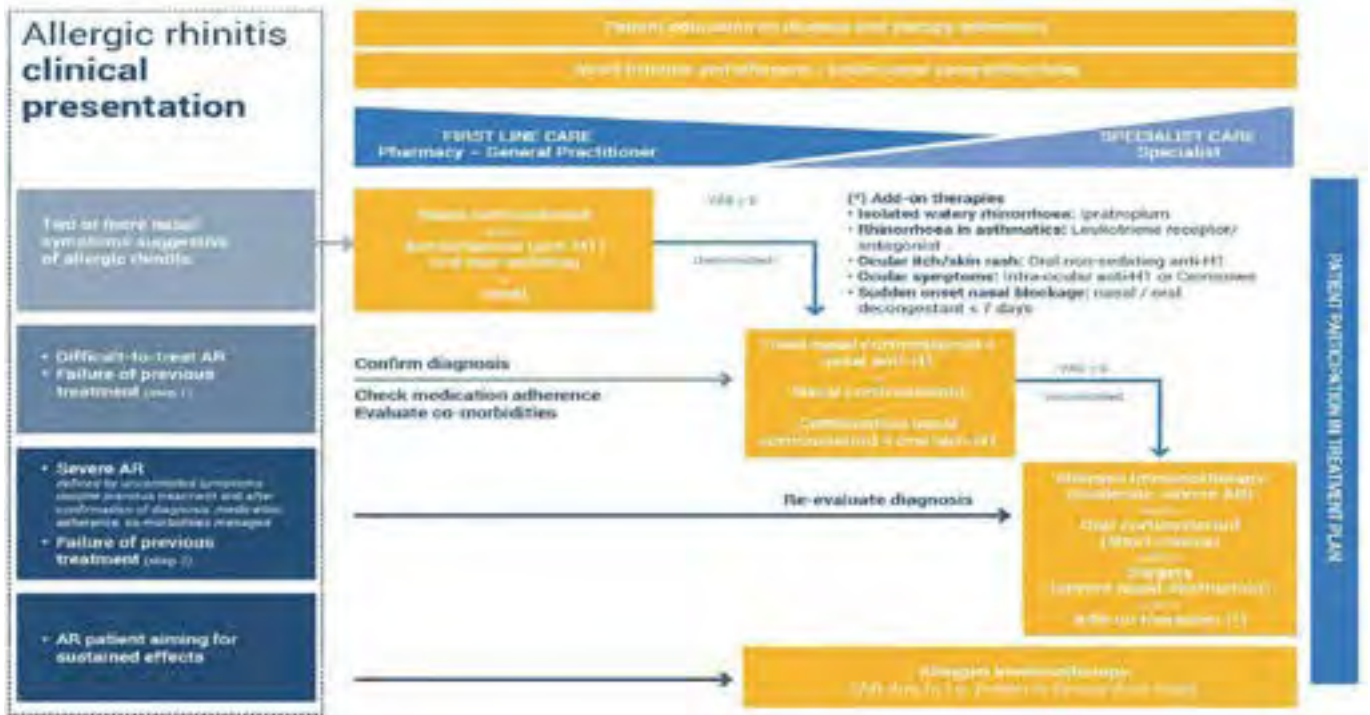
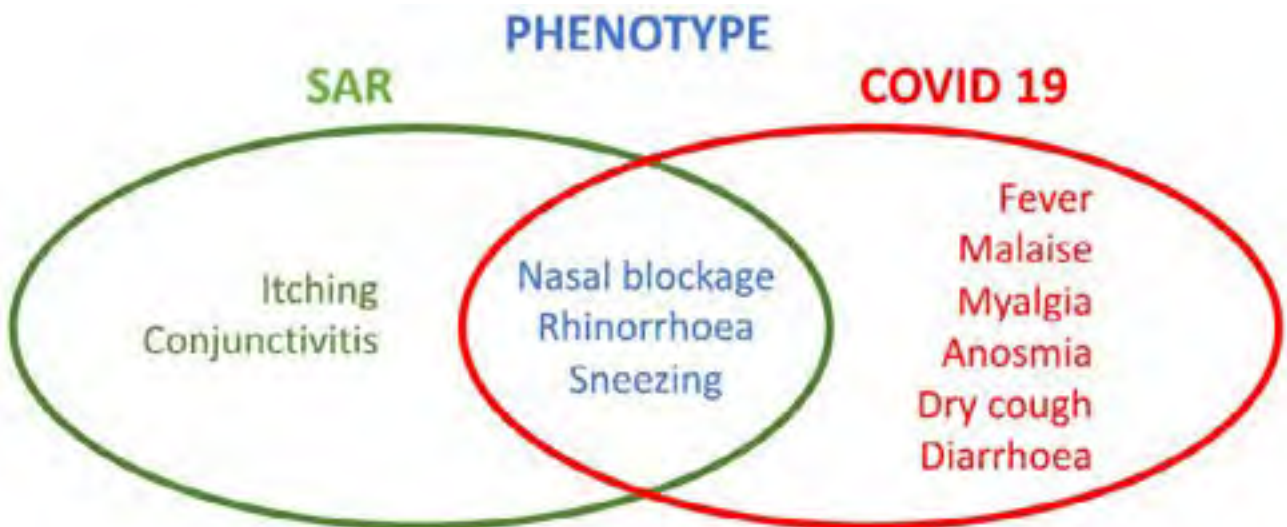


Figure 2: Similarities and differences between seasonal allergic rhinitis and COVID-19 symptoms



The diagnosis of SAR can often be made on the history of seasonal symptoms. If necessary it can be confirmed by demonstration of pollen – specific IgE, either by skin prick or blood tests. False positives and false negatives occur- so such tests should always be read in the light of the history. Rarely pollen – specific IgE may be confined

to the nose (local allergy) and then only nasal allergen challenge will provide the diagnosis. Use of more detailed tests to identify the IgE recognition of specific allergenic molecules, rather than whole allergens, currently has no place, other than in research, in pollen allergy.

b) Treatment

All sufferers, including the young, the pregnant and the old should benefit from avoidance of allergens and pollutants⁽¹⁵⁾. The use of a mask covering the nose and mouth not only protects against COVID-19, but also reduces pollen/pollutant ingress. Since asymptomatic COVID-19 is common, especially among young people one quarter of whom have hay fever, it is likely that the two conditions will coincide in some individuals. Mask wearing is very important to reduce COVID spread, which can be extensive after a sneeze, so is preferable to intranasal blockers like balms or petroleum jelly⁽¹⁶⁾. These could be used additionally inside the nose, if wished.



Another universally applicable simple measure is that of nasal saline. This reduces symptoms and the need for other medications. Nasal saline irrigation, also called douching, can be performed using a saline nasal spray or wash which are available from pharmacies. Regular daily or twice daily use can be supplemented by additional nasal douching after allergen exposure to prevent the ensuing allergic reaction. If extra sodium is a problem, such as in hypertensive or pregnant patients, then the saline which goes down the back of the nose can be spat out rather than swallowed.

Mild SAR still symptomatic despite the above measures can be largely controlled with antihistamines (oral or nasal, but never use sedating ones). More severe symptoms, especially if congestion is prominent, warrant regular, accurate use of an intranasal corticosteroid spray (INS) (see Figure 3). Those with symptoms despite this might benefit from a combination spray containing both INS plus intranasal antihistamine, which needs a prescription. Other possible additional treatments are mentioned in Figure 1.

Hay fever sufferers whose quality of life and ability to function are compromised despite pharmacotherapy should be referred for consideration of allergen specific immunotherapy (AIT). This may alter the course of disease, reducing progression to asthma⁽¹⁷⁾.

Figure 3:

1. Shake bottle well
2. Look down
3. Using right hand for left nostril put nozzle just inside nose aiming towards outside wall
4. Squirt once or twice (2 different directions ↔)
5. Change hands and repeat for other side
6. Breathe in gently through the nose



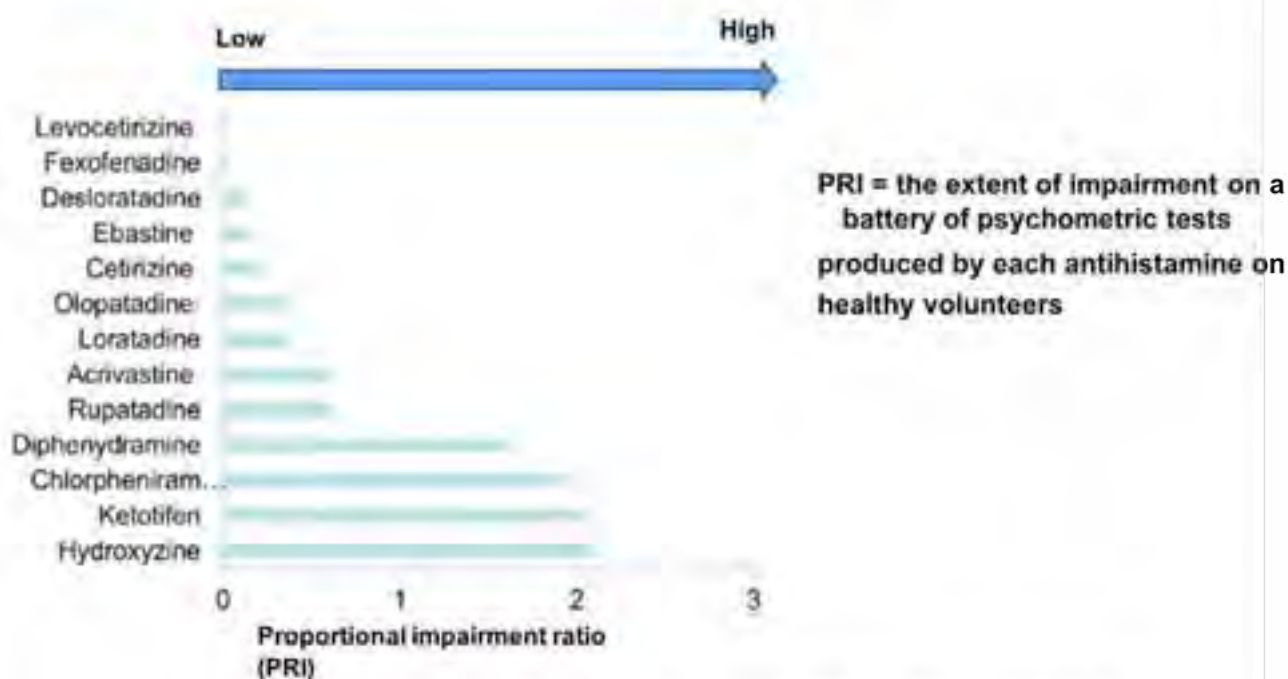
Special considerations

In pregnancy the risk benefit ratio of treatment needs careful consideration. If nasal saline plus allergen/pollutant avoidance fails to control symptoms then a non-systemically bioavailable nasal corticosteroid, such as mometasone furoate or fluticasone furoate or propionate, is likely to be the safest option, given that inhaled corticosteroids, with greater bioavailability, are regularly continued in asthma without problems.

Sedating antihistamines are particularly likely to harm the young (where syrups containing them are available over the counter) and the very old (in whom they can contribute to dementia) and should be completely avoided. Figure 4 shows the sedative properties of various antihistamines.

Figure 4:

Cognitive or psychomotor impairment of antihistamines



Yonai K et al. *Curr Med Res Opin* 2012; 28: 823-842.

Link between AR and asthma

AR is a risk factor for poor asthma control in those with both conditions and a risk factor for future asthma development in those with rhinitis only. Analyses revealed an association between daily count (continuous) of grass pollen and adult hospital admissions for asthma in London, with a four to five-day lag. When grass pollen concentrations were categorized into Met Office pollen 'alert' levels, 'very high' days (vs. 'low') were associated with increased admissions two to five days later, peaking at an incidence rate ratio of 1.46 (95% CI 1.20–1.78) at three days⁽¹⁸⁾.

Thunderstorm asthma, in which grass allergens are fragmented and more deeply inhaled, has provoked sudden severe asthma, sometimes fatal, in a few SAR sufferers who have previously only had upper airway symptoms. Remaining indoors during summer storms is sensible⁽¹⁹⁾. If unusually breathless, SAR sufferers should contact medical help quickly.

When to refer

Monitoring of symptoms can now be done by the patient using a mobile phone app⁽²⁰⁾. SAR subjects with poor symptom control need referral to an allergist for detailed investigation of their allergies and consideration of allergen specific immunotherapy.

Others with symptoms such as pain, bleeding, unilateral problems, unresponsive congestion need expert opinion from an ENT surgeon. Those with orbital cellulitis or sudden asthma need urgent referral.

Relevant guidelines

The EUFOREA guideline is available at www.euforea.eu under “New.”

The BSACI guideline is available at www.bsaci.org under “Guidelines”.

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Figure legends

1. The EUFOREA Allergic Rhinitis Management Algorithm- courtesy of EUFOREA.
2. Similarities and Differences between AR and COVID-19, from reference 16. Courtesy of World Allergy Organization Journal.
3. How to use an intranasal spray, from reference 15, Courtesy of Clin. Exp. Allergy and BSACI
4. Differences in sedating effects of oral antihistamines. From Yanai K et al. *Curr Med Res Opin* 2012; 28: 623–642 with permission.