



## Treatment Updates

# Management of Allergic Rhinitis

### ALLERGIC RHINITIS

Allergic rhinitis is a condition characterised by inflammatory swelling of the nasal mucus membrane. Clinical diagnosis is based on the presence of symptoms such as: itching, sneezing, blockage or discharge. Anterior rhinoscopy shows swelling of the inferior turbinates and septal swell bodies.

Simple classification of rhinitis is as follows:

- Seasonal allergic rhinitis (hayfever);
- Perennial allergic rhinitis;
- Perennial non-allergic rhinitis;
- Infectious - purulent rhinitis

Allergic rhinitis is one of the most frequent diseases seen in the general population. About 20% of the population suffers from hayfever and another 5% has perennial allergic rhinitis. If these are added, 20% of the general population suffers either continuously or intermittently from rhinitis.

The cost of managing allergic rhinitis is of enormous expense to the community and is in fact third behind medications for cancer and medication for reflux and peptic ulceration. An evaluation of the shelf space at any pharmacy shows that there are more commercial preparations for the treatment of the symptoms of rhinitis than for any other medical condition.

**This treatment update should act as a guide to the various medical and surgical treatments of this extremely common condition.**

**Medical management for allergic rhinitis is effective at symptom control in 80 to 85% of individuals.**

### LOW-DOSE WATER BASED SURFACE ACTING STEROID SPRAYS

Intranasal low-dose steroid sprays form the front line of treatment of allergic rhinitis. They all work to stabilise the lining of the nose, to inhibit mast cell degranulation and to stabilise blood vessels. They take 7 to 10 days to exert maximal

therapeutic effect and good compliance is essential to achieve optimal clinical outcomes. Systemic symptoms from the use of these sprays (at prescribed dosages) is almost non-existent, but caution needs to be exercised, particularly in children when intranasal steroids are combined with inhaled or oral steroids for the treatment of asthma. Side effects from these sprays are very uncommon, predominantly mucosal thinning or atrophy, which can cause spotty bleeding (and is nearly always reversible when the spray is stopped) and/or bacterial or fungal overgrowth in the nose, which is extraordinarily uncommon.

### ANTIHISTAMINES

These can be used topically or orally. The older oral antihistamines often caused cerebral optundation or sedation as a side effect. The newer antihistamines are less potent than the older ones in causing drying of the nose, but do not have any central sedative effects. Remember that antihistamines orally are drying agents and do not cause nasal vasoconstriction. Topical antihistamines such as Azelastine hydrochloride are rapidly acting (within 15 minutes) have a long half-life (up to 12 hours) and in addition to drying have been shown to cause a degree of nasal vasoconstriction. They tend to be as effective as the oral antihistamines but have a more rapid onset and their ability to shrink the lining of the nose is another theoretical advantage.

### COMPOUND PREPARATIONS

Compound preparations contain an antihistamine, sympathomimetic amine, occasionally an analgesic, a mucolytic and a cough suppressant. They are indicated for use in upper respiratory tract infections and are probably contraindicated in the treatment of seasonal or perennial rhinitis.

### DI-SODIUM CHROMOGLYCAT

Di-sodium chromoglycate is a very effective decongestant and drying agent. It prevents both early and late phase histamine release and does



not damage the lining of the nose. The problem with this preparation is that it has a very short half-life and very few people can comply with using it 4 to 5 times per day. It is ideally reserved for pre-treatment of people with seasonal allergic rhinitis. It is a very effective medication at preventing onset of symptoms.

### ANTI-CHOLINERGIC AGENTS

Anti-cholinergic agents like Atrovent Aqueous Nasal Spray should be used exclusively for the treatment of cholinergic rhinitis, a form of rhinitis seen predominantly in elderly patients and characterised by watery rhinorrhea associated with emotional stimulation, temperature change and sight or smell of food. Their efficacy in allergic rhinitis is less than that of low-dose water based steroid sprays.

### SYMPATHOMIMETIC AMINES

Alpha adrenergic analogues either topically or systemically cause mucosal vasoconstriction. Oral sympathomimetic amines, at a dose sufficient to cause significant nasal vasoconstriction, often cause tachycardia, may precipitate tachyarrhythmias and may contribute to or worsen hypertension. Surface-acting sympathomimetic amine sprays such as Drixine or Otrovin cause rapid shrinkage of the lining of the nose within 8 minutes, have a long half-life of up to 12 hours, but are contraindicated for long-term use inasmuch as a rebound phenomenon can be demonstrated after 3 to 4 weeks of continuous use. Remember that one third of the population has a paradoxical response to topical sympathomimetic amines when they have a cold. That is to say, instead of getting nasal vasoconstriction they experience further nasal congestion and rhinorrhea.

### AROMATIC AMINES AND STIMULANTS

Inhalation of aromatic amines and mucosal stimulants ameliorate the sensation of nasal obstruction by stimulating afferent pathways within the nose along the trigeminal nerve. Although they give the sensation of improved nasal airflow, objective assessment of nasal function shows that they cause neither drying nor vasoconstriction but are useful in symptom amelioration.

### NASAL DOUCHES

There are a large number of commercially available nasal douches. Nasal douching works by

rinsing the nose of excessive secretion and optimizing mucociliary transport. Significantly hypertonic solutions can cause reactive swelling of the lining of the nose. By douching the nose and removing any potential antigens they reduce contact time and hence mucosal reactivity and swelling in allergic rhinitis.

### ORAL STEROIDS

Very rarely indicated in treatment of allergic rhinitis. A short burst of oral steroids can facilitate significant nasal decongestion and allow for optimal penetration of a variety of surface-acting preparations.

### SURGICAL OPTIONS

Traditionally, surgical management of allergic rhinitis was reserved for those cases refractory to medical management. **The increased cost of medically managing perennial allergic rhinitis (\$600.00 to \$1000.00 per year), means that surgical management of this condition is gaining increasing prominence.**

Surgical options include:

- **Outfracture of inferior turbinates.** This is a simple procedure that is rarely done in isolation but is usually combined with other nasal procedures. If used alone it affords **symptom amelioration measured in months** rather than years, and is not a recommended current treatment.
- **Mucosal or submucosal diathermy** of the inferior turbinates. Submucosal diathermy is the preferred route, inasmuch as it causes no mucociliary scarring and does not inhibit mucociliary transfer. The erectile tissue between the bone of the inferior turbinate and the lining is obliterated by electro-cautery with scarring of the mucosa to the bone. **Amelioration of symptoms is measured in months to years.** There are disadvantages associated post-operatively with crusting and scarring in the nose and it is usually performed under a general anaesthesia.
- **Radiofrequency ablation.** Radiofrequency ablation can be unipolar or bipolar. The bipolar technique has the advantage of not spilling current into adjacent tissue. Controlled radiofrequency obliteration of erectile tissue with minimal thermal damage to the bone, periosteum or mucosa. Short term follow up results indicate **symptom amelioration in months to years.** The advantage is that it



can be performed under **local anaesthesia**. The disadvantage is that it is relatively expensive technology and the probe carries a disposables cost of up to \$500.00 per procedure.

- **Laser reduction of inferior turbinates** using either carbon dioxide or Argon lasers. Laser reduction is a transmucosal procedure with attendant risk of damage to the mucosa and subsequent disruption of mucociliary transport. **Symptom amelioration is measured in months to years.** Disadvantages: expensive technology performed under general anaesthesia.
- **Turbinoplasty using powered instrumentation.** Submucosal technique whereby erectile tissue, periosteum and bone can be removed with minimal mucosal damage. This is performed under general anaesthesia. Follow up shows **symptom amelioration to be in years.** The disadvantage is that it is performed under general anaesthesia, ideally in a hospital setting.
- **Turbinectomy.** Excision of part or all of the inferior turbinate, mucosa, submucosa, erectile tissue and bone. Performed under general anaesthesia. **Symptom amelioration is measured in years.** Disadvantages: performed under general anaesthesia in a hospital setting. Associated with the highest risk of secondary haemorrhage. Theoretical problems with a hyper-patent nose potentially leading to atrophic rhinitis in colder climates.

## CURRENT RECOMMENDATIONS

Trial of low-dose water based surface acting steroid sprays, stressing the importance of good compliance. Review at one month.

**Good result** → Continue using medication for 3 months and then wean off medication, initially by using the preparation one month on, one month off.

**Poor result** → Ensure that result is not due to poor compliance. Consider adding supplementary topical or oral medication. Reconsider the diagnosis. If after additional medication insufficient symptom amelioration refer with view to:

- Nasendoscopy
- Rhinomanometry +/- radiology
- → different or increased medical management
- → surgical management.

## SURGICAL TREATMENTS OF CHOICE

### Submucosal turbinoplasty

General anaesthesia (in hospital setting).

### Bipolar submucosal radiofrequency ablation

Local anaesthesia (in rooms).

**If further information is required, please email us:**  
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