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Practical Issues Relating to Intranasal Steroid Therapy

Luke K S Tan

EPIDEMIOLOGY

In Singapore, the prevalence of allergic rhinitis (AR) has been reported between 4.5%-25%[1]. The prevalence has been shown to be affected by the diagnostic criteria. In a recent Singapore study[2], the prevalence varied depending if the inclusion criteria was four, three, two, or one nasal symptom, and was reported as 25.5%, 13.1%, 6.5% and 3% respectively. Using two-symptom scores, the prevalence in Singapore is 13.1%. The authors found no ethnic predilection for AR and the majority were managed by family physicians. In the year 2000, over $6 billion[3] was spent on prescription medications to treat this illness in the United States. Although it is not associated with severe morbidity and mortality, AR has a major effect on the quality of life in a large number of patients.

DIAGNOSIS

The diagnosis of AR is made on clinical grounds in the majority of cases. The common symptoms of nasal itch, sneezing, rhinorrhoea and nasal congestion predominate. Other supporting symptoms include itchiness of the eyes. There is a battery of allergy tests available for the diagnosis of specific allergens which is usually not cost effective to a family physician. It is known that a large majority of our patients are allergic to house dust mite upon testing[2]. Intranasal steroids are commonly used as first line treatment for AR. It is not possible to cover all the intranasal sprays in this short communication and the author has no undeclared interest in any of the those mentioned here. Budesonide (BD) or Rhinocort, Fluticasone Proprionate(FP) or Flixonase, Mometosone Furoate (MF) or Nasonex and Triamcinolone acetonide (TA) or Nasocort are the commonly used intranasal steroids and will be referred to in dealing with the issues pertaining to the use of intranasal steroids.

PRACTICAL ISSUES

Dosage and Efficacy

There is a multitude of studies comparing the efficacy of nasal steroid efficacy. In general, the studies have compared efficacy of nasal steroids with that of oral antihistamines eg FP vs Loratidine or studies focused on comparing different nasal steroidal sprays eg FP vs MF. This article will address issues pertaining to intranasal steroids.

It is the trend that newer nasal steroids being made available to the clinicians are compared to the existing ones, e.g. FP vs Beclomethasone Diproprionate in the early 1990s and FP vs MF in the last five years. The second generation nasal steroid sprays have the benefit of once a day usage and the efficacy has been demonstrated both in the published literature as well as from clinical experience. These have largely replaced the use of beclomethasone requiring a twice-daily dosage.

Amongst the nasal sprays, FP, MF, TA, BD have been compared in numerous studies over the past decade. There is no study comparing all the second generation intranasal steroids at the same time. At recommended doses, these sprays are have been shown to be efficacious in the treatment of rhinitis in numerous studies. It is not possible to review all the comparative studies in this communication, although in the decision to provide treatment the following specific issues address should be considered. Table I provides a quick summary of the dosages in adults and children.

Use of Intranasal Steroids in Children

Steroid treatment in children poses immediate concerns about the impact on growth and other possible side effects. Several clinical trials have been conducted in children addressing the impact on the Hypothalamic-Pituitary-Axis and growth.

Department of Otolaryngology National University Hospital 5 Lower Kent Ridge Road Singapore 119074

Luke K S Tan, MBBS, FRCS (England), MMedSci, FAMS (ORL) Associate Professor and Chief
Tel: (65) 6772 5371
Fax: (65) 6775 3820
Email: enttanl@nus.edu.sg

In 1993, the safety of FP was reported to be safe in children four to 11 years of age for up to two weeks of treatment. In 1996, Richards reported on the safety of FP in four to 11-year-old children for treatment of up to 12 weeks. In 1997, Brannon et al showed that 14 days of up to 200 mcg (four sprays) of MF did not have any HPA effects in children three to 12 years of age. Headache was the most frequently noted side effect which is distinct from adults. In 2000, Schenkel et al studied the impact of daily 100 mcg (two sprays) in children three to nine years for one year in a placebo-controlled, double-blind, multicentre study using MF. At the end of the treatment year, there was no effect on HPA nor growth difference between the MF and placebo arm. With the exception of MF approved for age three and above and FP for age four and above, TA, Budesonide, are approved for children six years and above. However, beclomethasone diproprionate has been shown to affect bone growth in children and should be avoided in the paediatric population.

Use of Intranasal Steroids in Pregnancy

Rhinitis in pregnancy is a common condition, which occasionally leads to blockage of the sinuses resulting in sinusitis. There is a paucity of data for nasal steroid treatment in pregnancy. Triamcinolone acetonide has been shown to be teratogenic in animal studies and thus should not recommended in pregnancy. A recent study using fluticasone proprionate for eight weeks showed no detectable difference in the maternal cortisol, foetal growth or pregnancy outcomes. However, the placebo randomise controlled trial did not demonstrate and did not show any difference in the daily symptoms score, peak nasal expiratory flow, acoustic rhinometry before or after treatment.

Duration of Usage of Intranasal Steroids

The data on safety of the nasal steroidal sprays were studied initially for two weeks and later further trials extend this period for up to 12 weeks. The longest study to date is for one year without significant side effects in MF. However, there is no data on the recommended duration of usage of the sprays. It is usual practice for patients to have a trial of one of the nasal steroid sprays at the first consultation. The patients can be reviewed at a month towards the completion of the bottle of spray. Ideally patients should be given the option to bring the spray to assess for compliance. Patients with partial recovery from AR should be continued for another month. Patients who are totally symptom free could have their treatment stopped. The latter patients should be advised that the symptoms may recur and thus repeat courses of treatment can be given. For the patients who do not receive any benefit despite trial of two different sprays should have a nasal evaluation and an allergy work-up done. There is no recommended guideline on duration of intranasal usage and thus the clinical scenario should dictate the duration.

Fig. 1 Prevalence of individual nasal symptoms (on most days).

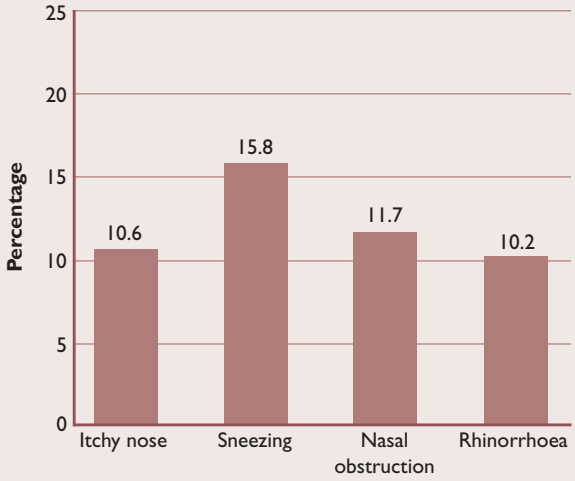

Fig. 2 Prevalence of rhinitis* in Singapore.

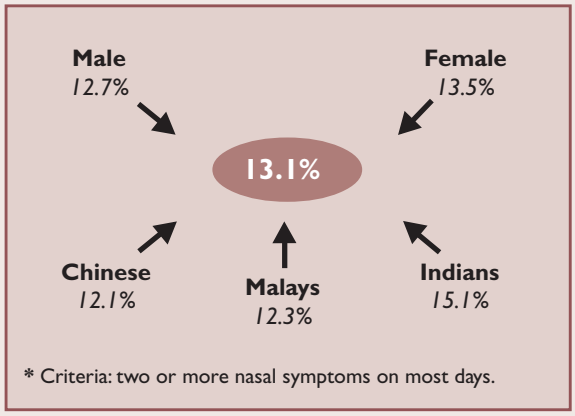

Table I. Table of Commonly Used Intranasal Steroids.

INS	Adult Dosage	No Sprays	Children Age Approved	Children Dosage	No Sprays
FP	200	4	4	100	2
MF	200	4	3	100	2
BD	200	4	6	100	2
TA	220	4	6	100	2

Use of Intranasal Steroids in Nasal Polyps

Nasal Polyposis is a common condition in our population. One of the most effective forms of treatment is the use of oral corticosteroids for nasal polyposis. The intranasal delivery of corticosteroids offers a longer term option in control of this condition. Intranasal steroids such as FP, BD, Beclomethasone have been shown to be effective in the treatment of nasal polyposis, usually with a 12-14 week duration. Although the literature shows tolerability of up to twice the doses, treatment at the recommended doses for rhinitis has been shown to be effective. After the surgical extirpation of the nasal polyps, use of intranasal steroids can be used for recurrence of polyposis although no studies have looked critically at this issue.

Use of Intranasal Steroids in Sinusitis

In the presence of bacterial infection, it is usually not recommended to have steroid therapy for the concerns of worsening the infection. In a study in patients with chronic sinusitis, the use of intranasal steroids (FP) up to 16 weeks did not precipitate acute sinusitis[9]. Although it emphasised that intranasal steroids did not increase the risk of infection, it did not clearly demonstrate the benefits of the usage. Whilst having recurrent acute sinusitis, a higher dose of MF at twice the normal dosage did not prolong infection, and total symptoms score appeared to be better than in the placebo group[10].

Side Effects related to Intranasal Steroids

The common side effects offered by all patients include epistaxis, pharyngitis, nasal burning irritation, and in children headaches have been reported. Rare complications reported include nasal septal perforations and raised intracranial pressures.

CONCLUSION

The short article is focused on the practical knowledge pertaining to the use of intranasal steroids. These have been shown to be effective in controlling symptoms in patients with seasonal and perennial rhinitis. The pharmacology of the second generation intranasal steroids allow a once daily usage with good control of symptoms. The side effects are low and the long term usage has been demonstrated to be safe in some. The efficacy studies have not clearly shown one to be outstandingly different from the other and cost per day of treatment should be considered. The usage in children starts from age three (MF) and four (FP). Usage in pregnancy is not recommend unless benefits are expected to be signicant to the individual. The risk of increasing nasal infections in sinusitis patients seems low although the benefit may not consumerate the resource.

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