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Safety and Tolerability Profiles of Intranasal Antihistamines and Intranasal Corticosteroids in the Treatment of Allergic Rhinitis

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Abstract

Intranasal corticosteroids and intranasal antihistamines are efficacious topical therapies in the treatment of allergic rhinitis. This review addresses their relative roles in the management of this disease, focusing on their safety and tolerability profiles. The intranasal route of administration delivers drug directly to the target organ, thereby minimising the potential for the systemic adverse effects that may be evident with oral therapy. Furthermore, the topical route of delivery enables the use of lower doses of medication. Such therapies, predominantly available as aqueous formulations following the ban of chlorofluorocarbon propellants, have minimal local adverse effects.

Intranasal application of therapy can induce sneezing in the hyper-reactive nose, and transient local irritation has been described with certain formulations. Intranasal administration of corticosteroids is associated with minor nose bleeding in a small proportion of recipients. This effect has been attributed to the vasoconstrictor activity of the corticosteroid molecules, and is considered to account for the very rare occurrence of nasal septal perforation. Nasal biopsy studies do not show any detrimental structural effects within the nasal mucosa with long-term administration of intranasal corticosteroids. Much attention has focused on the systemic safety of intranasal application. When administered at standard recommended therapeutic dosage, the intranasal antihistamines do not cause significant sedation or impairment of psychomotor function, effects that would be evident when these agents are administered orally at a therapeutically relevant dosage.

The systemic bioavailability of intranasal corticosteroids varies from <1% to up to 40–50% and influences the risk of systemic adverse effects. Because the dose delivered topically is small, this is not a major consideration, and extensive studies have not identified significant effects on the hypothalamic-pituitary-adrenal axis with continued treatment. A small effect on growth has been reported in one study in children receiving a standard dosage over 1 year, however. This has not been found in prospective studies with the intranasal corticosteroids that have low systemic bioavailability and therefore the judicious choice of intranasal formulation, particularly if there is concurrent corticosteroid inhalation for asthma, is prudent. There is no evidence that such considerations are relevant to shorter-term use, such as in intermittent or seasonal disease.

Intranasal therapy, which represents a major mode of drug delivery in allergic rhinitis, thus has a very favourable benefit/risk ratio and is the preferred route of administration for corticosteroids in the treatment of this disease, as well as an important option for antihistaminic therapy, particularly if rapid symptom relief is required.

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