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Intranasal ipratropium in the treatment of vasomotor rhinitis

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SUMMARY

Ipratropium administered in the form of a nasal spray was compared with placebo in 30 patients with vasomotor rhinitis in a double-blind cross-over trial. There was a significant reduction in nasal hypersecretion during ipratropium treatment, but no effect on nasal blockage, sneezing or tickling. On the whole, 20 patients (66.7%) considered ipratropium worth using. 11 patients had mild side- effects, mainly nasal irritation, during ipratropium treatment and 7 with placebo. A therapeutical trial with ipratropium is appropriate in the management of severe rhinorrhoea in patients with vasomotor rhinitis.

INTRODUCTION

Patients with vasomotor rhinitis, also referred to as perennial non-allergic rhinitis, make up a heterogenous group with hyperreactive nasal mucosas responsing to unspecific stimuli more strongly than normal. The submucous glands of the nose have parasympathetic innervation, and rhinorrhoea may be caused by an increased activity of this system.

Nasal hypersecretion has usually been treated with oral sympatomimethic drugs often combined with antihistamines. The response to therapy, however, varies from patient to patient, and the side-effects of a systemic agent may be unpleasant. Besides local sympatomimethic drugs may cause rhinitis medicamentosa.

Ipratropium (Atrovent®, Boehringer-Ingelheim) was introduced as a bronchodilatator for the treatment of broncho-constrictive diseases (Poppius and Salorinne, 1973; Spector and Ball, 1975). The drug is a parasympatholytic with topical activity, and it has also been used successfully in vasomotor rhinitis (Borum, 1978; Borum et al., 1979).

The purpose of the present trial was to study the effect of ipratropium compared with placebo on symptoms of vasomotor rhinitis in patients who had been treated in our clinic, but were not satisfied with the earlier medical treatment.

MATERIAL AND METHODS

The investigation was carried out on 30 patients who had vasomotor rhinitis of

such severity as to require treatment for more than one year. Their mean age was 30 (range 14–66 year). All had nasal symptoms for at least 1 hour per day, and had previously been taking various other drugs without any marked effect. Watery rhinorrhoea was the dominant symptom. The patients had normal sinus X-ray findings, negative skin prick tests and no anatomic nasal abnormalities or nasal polyps.

The period of investigation was eight weeks. During this time every patient received ipratropium for three weeks after a run-in period of one week and placebo in the same order. Two puffs, each of 20 µg, were given into each nostril four times a day. The sequence of the treatments was randomized and the treatments were given on a double-blind basis. No other medication was given during the trial or for one week before the treatment.

All the patients completed daily score cards for the treatment period and the preceding week. On these cards, rhinorrhoea, sneezing, tickling and nasal blockage were registered, using a scale from 0 (no symptoms) to 3 (severe symptoms). The number of paper handkerchiefs used and the side-effects were recorded during the treatment. Nasal smears for an evaluation of the cytologic picture were taken before and after the treatment with ipratropium and placebo. The statistical analysis was performed using McNemar's test.

RESULTS

Ipratropium had a marked effect on nasal discharge (Figure 1). A significant reduction ($P < 0.001$) was seen within the first few days after starting the treatment. A pronounced reduction in the amount of handkerchiefs used (Figure 2) confirms this finding.

On the other hand, ipratropium had no effect on nasal blockage, sneezing and tickling. During the study the patients registered these symptoms daily using the scale from 0 (no symptoms) to 3 (severe symptoms). Before starting the trial the mean score was 1.8 for nasal blockage, 1.0 for sneezing and 0.6 for tickling. After treatment with ipratropium the corresponding scores were 1.1, 0.6, 0.4 and after placebo 1.4, 0.6 and 0.4, respectively. The changes were minimal and not statistically significant.

The nasal cytologic picture before treatment was quite similar in the different patients. A few eosinophils could be found in only two patients and mast cells in only one. The number of goblet cells was elevated in an average of 85 percent of the patients. During the trial no changes in nasal cytology were observed.

On the whole, 20 patients (66.7%) considered ipratropium and 12 (40%) placebo worth using.

11 patients had principally mild side-effects during the treatment with ipratropium and 7 with placebo. Mild nasal irritation was complained of by 8 patients with ipratropium and 5 with placebo, nasal dryness by 6 and 3 patients, respect-

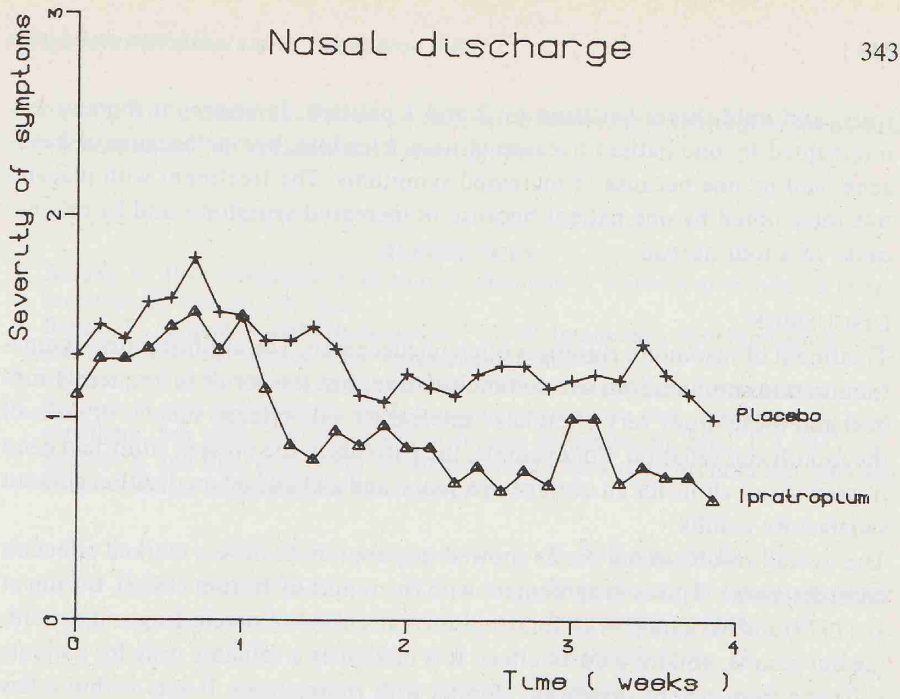

Figure 1. Mean symptom scores for nasal discharge in 30 patients with vasomotor rhinitis treated with ipratropium and placebo in a double-blind cross-over trial. The treatment was started after a run-in period of one week (0-1).

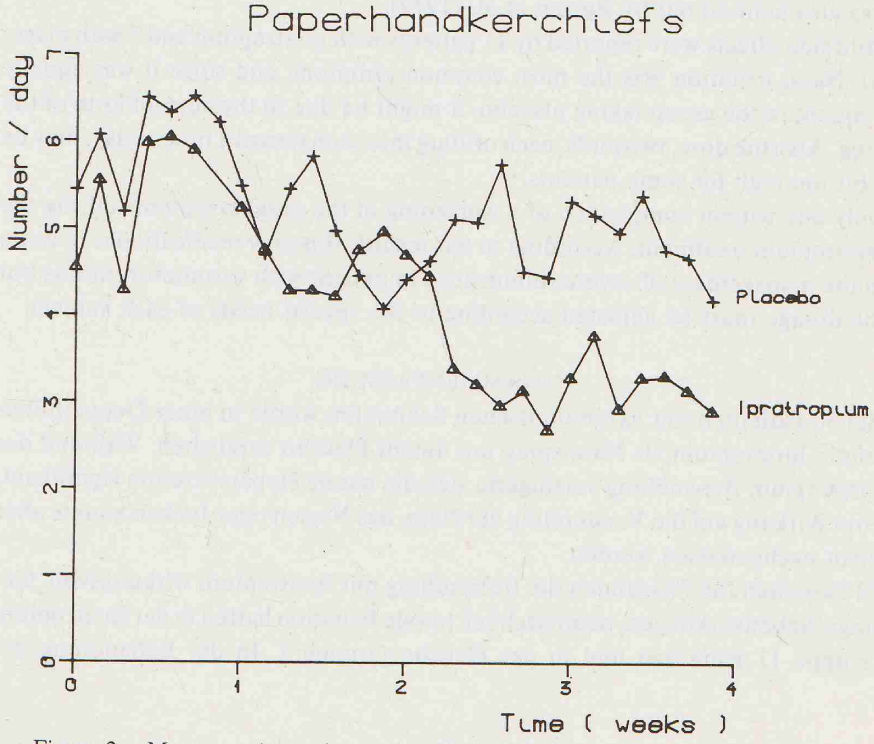

Figure 2. Mean numbers of paper handkerchiefs used per day during the trial.

ively, and mild throat irritation by 2 and 1 patients. Ipratropium therapy was interrupted by one patient because of nasal bleeding, by one because of headache, and by one because of increased symptoms. The treatment with placebo was interrupted by one patient because of increased symptoms and by one because of a tour abroad.

DISCUSSION

Treatment of vasomotor rhinitis is often unsuccessful. The antihistamine-sympatomimethic combinations are commonly used, but the result is frequently modest and these drugs very often have unpleasant side-effects, such as dryness of the mouth and sedation. For example, the patients in the present study had been treated in our clinic for an average of 6 years, and all had had medication without satisfactory results.

The overall results in our series showed ipratropium to have a marked effect on nasal discharge. This is in agreement with the report by Borum (1978), Borum et al. (1979) and Mygind (1978). Ipratropium is an anti-cholinercic drug and, according our results, obtains a quick effect. It is obviously a valuable drug for patients suffering from severe vasomotor rhinitis with rhinorrhoea. It acts within a few minutes (Mygind, 1978) and there is no need for continuous use if the patient has symptomless periods. In contrast to the effect on nasal secretion, our study showed ipratropium to have no effect on nasal blockage, sneezing and tickling, as was also pointed out by Borum et al. (1979).

Mild side-effects were reported by 11 patients with ipratropium and 7 with placebo. Nasal irritation was the most common symptom, and since it was equally frequent in the group taking placebo, it might be due to the aerosol form of the drug. Also the dose, two puffs, each of 20µg into each nostril 4 times a day, may be a bit too high for some patients.

Only one patient complained of a worsening of the nasal symptoms during the ipratropium treatment. According to our results, this new medication is of value in the management of severe rhinorrhoea in patient with vasomotor rhinitis but the dosage must be adjusted according to the special needs of each subject.

ZUSAMMENFASSUNG

Bei 30 Patienten mit vasomotorischen Schnupfen wurde in einer Doppelblindstudie Ipratropium als Nasalspray mit einem Placebo verglichen. Während der Ipratropium Behandlung verringerte sich die nasale Hypersekretion signifikant, eine Wirkung auf die Verstopfung der Nase, das Niesen oder Jucken konnte aber nicht nachgeweisen werden.

20 Patienten (66,7%) fanden die Behandlung mit Ipratropium wirkungsvoll. Geringe Nebenwirkungen, hauptsächlich nasale Irritation hatten in der Ipratropium Gruppe 11 Patienten und in der Placebo Gruppe 7. In der Behandlung der

schweren Rhinorrhöe bei Patienten mit vasomotorischen Schnupfen lohnt sich ein therapeutischer Versuch mit Ipratropium.

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