Coll. Antropol. **25** Suppl. (2001) 149–152
UDC 617.764.1-615.03
Professional paper

Lodoxamide as Adjuvant Therapy in Patients with Dry Eye

I. Petriček[1], R. Pokupec[1], G. Petriček[2] and J. Salopek-Rabatić[3]

[1] Eye Clinic »Rebro«, School of Medicine, University of Zagreb, Zagreb, Croatia
[2] School of Public Health »A. Štampar«, School of Medicine, University of Zagreb, Zagreb, Croatia
[3] Eye Clinic »Dubrava«, School of Medicine, University of Zagreb, Zagreb, Croatia

A B S T R A C T

Dry eye, due to its impaired function of tear film becomes more susceptible to all kinds of airborne allergens. Due to air pollution this is more marked in urban areas, and is compounded by the modern way of life. There are various standard topical medications which alleviate allergic reaction of the eye, but many of them must be administered with caution and only on short term due to their potentially hazardous side effects. The purpose of this work is to assess the efficacy of lodoxamide, a new antiallergic medication for topical use, whose advantage is low or absent risk of adverse side effects, in alleviating local allergic reactions of the eye in patients with dry eye. Research has shown that, compared to treatment with eye lubricants alone (artificial tears), treatment with artificial tears combined with lodoxamide has resulted in more marked decrease in the signs of inflammation, and to the lesser extent to the reduction of the symptoms as well.

Introduction

Dry eye, due to its impaired function of tear film, becomes more susceptible to external irritants, such are pollens, environmental airborne pollutants in cities, dust mites etc. Schein et al. (1997) estimates that 4.3 million Americans age 65–84 suffer from periodic or permanent symptoms of eye irritation[1]. Using tear break up time (TBUT) as diagnostic criteria, McCarty et al. (1998) have diagnosed dry eye in 8.6% of Melbourne citizens older than 40[2]. In Canadian optometry practices, Doughty et al. (1997) have found 28.7% of patients complaining of dry eye symptoms in age group 10–80, although only 7.8% had »moderate but permanent symptoms« [3]. In Croatia, author's experience shows that 6,3% of all patients seen in his practice in September and November 1998 had symptoms and signs of dry eye[4]. Toda et al. (1995) have shown in their work that allergic conjunctivitis might be the cause of decrease of goblet cell density, what directly affects

Received for publication June 4, 2001.

TBUT[5]. This allergic component of patient's symptoms might be alleviated by the application of antiallergic topical eye medication. Currently available topical antiallergic eye medications include corticosteroids, antihistamines, NSAID's, and medications with the combined effect. Corticosteroids are potent, but their potentially serious side effects make them risky medications for the long-term use. Antihistamines frequently lack efficacy, while NSAID eye medications also have side effects similar to those of corticosteroids. lodoxamide 0,1% ophthalmic solution (Alomide, ALCON) affects several stages of allergic response: it stabilizes mast cells, inhibits eosinophil migration and inhibits allergic reaction mediators release[6]. Perhaps the most significant advantage for the clinical use of lodoxamide is its safety in long term application, with no known serious side effects.

The purpose of this study is to assess the possibility of use of lodoxamide 0.1% eye drops as an adjuvant therapy for patients with the chronic eye irritation caused by the dry eye, in order to alleviate their symptoms and improve their life quality.

Patients and Methods

In period between January 26 and June 30, 2000, at the Outpatient Department of Eye Clinic »Rebro«, University of Zagreb, 44 patients were included in this study. None of the patients were previously treated with the same medications, nor examined by the study researcher. Patients' age was 25–87 (mean 57). 82% of the patients were women. Inclusion criteria was chronic eye irritation, without any pronounced eye inflammation symptoms or infectious disease history. Patients were randomly divided into two groups: in group A, 23 patients were treated with standard lubricant therapy (artificial tears sid + eye lubricant gel in the evening). In group B, 21 patient was treated with the same medications with the addition of lodoxamide 0.1% eye drops (Alomide ALCON) qid. Analyzed parameters included subjective symptoms and objective signs. Subjective symptoms were: foreign body sensation, itching, irritation more pronounced in the morning, irritation more pronounced by the wind, irritation more pronounced by watching TV or computer work and irritation more pronounced by cold weather. Objective signs related to tear dysfunction that were analyzed included tear break-up time (TBUT), conjunctivae hyperemia, 6 o'clock punctuate keratitis and blepharitis. To every parameter a score from 0 to 3 was assigned, 3 being the most pronounced symptom or sign. TBUT was assessed as follows: 0 = longer than 10 sec; 1 = 10–7 sec; 2 = 6–3 sec; 3 = 2–0 sec. Above mentioned parameters were evaluated twice: upon enrollment in study and at the check-up visit 2–3 weeks later.

Results

The sign that was most pronounced in virtually every patient with long term eye irritation was drastically reduced TBUT. On assessment before treatment, 73% of the patients in group A and 70% of patients in group B had TBUT 2 sec or lower.

After therapy, patients' symptoms score improved in groups A and B by 52% and 58% respectively (Figure 1). There was 8% signs score improvement in group A, as opposed to 32% in Graph 1 Improvement of symptoms after therapy (percentage)group B (Figure 2). The most notable improvement in signs score in group B as opposed to group A was the reduction of conjunctivae hyperemia and blepharitis. TBUT score was basically unaltered by the therapy. After being asked about their personal satisfaction of the outcome of therapy, 80% of patients in group a and 85% of patients in group B felt improvement, 10% and 15% felt no change, and 10% in group A felt worse (Figure 3).

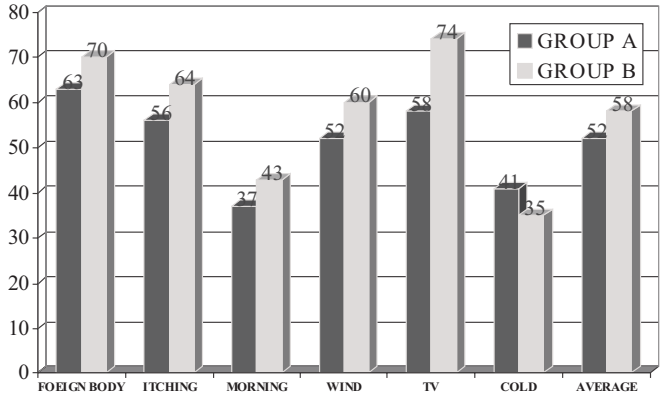

Fig. 1. Improvement of symptoms after therapy (percentage).

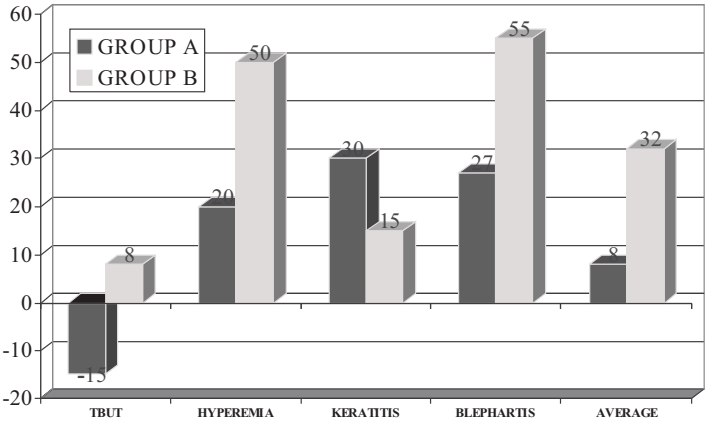

Fig. 2. Improvement of signs after therapy (percentage).

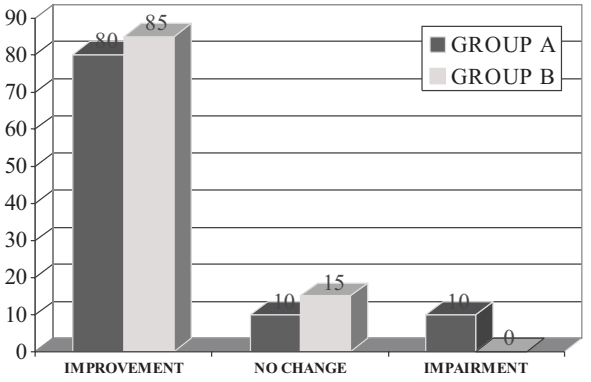

Fig. 3. Subjective feeling of the outcome of therapy (percentage).

Conclusion

Although small number of patients enrolled in this study so far renders making any firm assumptions unplausible, the results of using lodoxamide as adjuvant therapy in patients with dry eye encourage further investigation. The most consistent finding in patients complaining of chronic eye irritation are drastically low values of TBUT. Although it was slightly more effective in alleviating symptoms than lubricant therapy alone, it appears that lodoxamide was significantly more effective in reducing clinical signs of chronic eye irritation, such are blepharitis and conjunctivitis.

REFERENCES

1. SCHEIN, O. D., B. MUNOZ, J. M. TIELSCH, K. BANDEEN-ROCHE, S. WEST, Am. J. Ophthalmol., 124 (1997) 723. — 2. McCARTHY, C. A., A. K. BANSAL, P. M. LIVINGSTON, Y. L. STANISLAVSKY, H. R. TAYLOR, Ophthalmology, 105 (1998) 1114. — 3. DOUGHTY, M. J., D. FONN, D. RICHTER, T. SIMPSON, B. CAFFERY, K. GORDON, Optometry & Vision Science, 74 (1997) 624. — 4. PETRIČEK I., R. POKUPEC, M. KALAUZ, G. PETRIĆEK, Pregled rada opće očne ambulante sa posebnim osvrtom na diferencijalnu dijagnostiku i terapiju upalnih stanja prednjeg segmenta oka. (6th Annual Meeting of the Croatian Ophthalmological Society, with international participation, Šibenik, 1999). — 5. TODA, I., J. SHIMAZAKI, K. TSUBOTA, Ophthalmology, 102 (1995) 302. — 6. CAPRON, M., L. PRIN, Efficacy of lodoxamide (Alomide) on eosinophil chemotaxis and mediator release in ocular allergic disease. In: Proceedings (International Symposium on Experimental and Clinical Ocular Pharmacology and Pharmaceutics, Geneva, 1995).

I. Petriček

Eye Clinic »Rebro«, School of Medicine, University of Zagreb, Kišpatićeva 12, 10000 Zagreb, Croatia

LODOXAMID KAO POMOĆNA TERAPIJA U BOLESNIKA SA SUHIM OKOM

SAŽETAK

Suho oko zbog svoje smanjene funkcije suznog filma postaje osjetljivije na sve oblike alergena koji se nalaze u zraku. To je zbog zagađenosti posebno izraženo u urbanim sredinama, čemu pridonosi i način života modernog čovjeka. Postoje različiti uvriježeni preparati za lokalnu primjenu koji djeluju na smanjenje alergijske reakcije oka, no mnogi od njih se moraju ordinirati sa oprezom i samo na kraća razdoblja zbog potencijalno opasnih nuspojava. Cilj je ovog rada ispitati učinkovitost lodoksamida, novog antialergijskog preparata za lokalnu primjenu, čija je prednost vrlo mala ili nikakva mogućnost nuspojava, u smanjenju lokalnih alergijskih reakcija oka kod pacijenata sa suhim okom. Istraživanje je pokazalo da je u usporedbi sa liječenjem samo preparatima za rehidraciju oka (umjetne suze), liječenje sa umjetnim suzama i lodoksamidom utjecalo na veće smanjenje znakova upale, te u manjoj mjeri na smanjenje subjektivnih smetnji pacijenata.