ior segment inflammation, that is, cystoid macular oedema. This clinical study was conducted as a comparative, prospective, single-masked study, and administered at a single centre, private, teaching, multi-specialty practice in Las Vegas, Nevada. The study began on 4 April 2011 and ended on 31 August 2011. There were a total of 269 eyes (patients) enroled with 222 completing the study.

Patients were randomized into two groups: Group I (nonsteroidal group – [besifloxacin ophthalmic suspension, 0.6% {Bausch & Lomb, Rochester, NY} and bromfenac 0.09% {ISTA Pharmaceuticals, Irvine, CA, USA}]) and Group II (steroid group – [besifloxacin and prednisolone acetate 1% {Allergan, Inc., Irvine, CA, USA}]). The dispensing protocol used is as follows: besifloxacin 0.6%, 1 drop in the operated eye, BID, for 3 days prior to surgery and to continue for 7 days postsurgery; prednisolone acetate 1%, 1 drop in the operated eye, QID for 7 days followed by a tapering dose totalling 14 days of treatment; and bromfenac 0.09%, 1 drop in the operated eye, QD, starting 3 days prior to surgery and continuing for a total of 14 days. This protocol was implemented in accordance with the AAO guideline and the standard of care set forth by the practice.

Visual recovery and anterior segment inflammation were statistically insignificant with the p-value > 0.05 for all evaluation periods between the two groups. The foveal thickness (FT; $p = 0.8$ [1-week], $p = 0.2$ [1-month], $p = 0.2$ [2-months]) and total macular volume (TMV; $p = 0.7$ [1-week]; $p = 0.1$ [1-month]; $p = 0.2$ [2-months]) were not statistically significant between groups and the observed power was 0.902 and 0.666, respectively.

The paradigm in pharmacotherapy postuncomplicated cataract surgery has deviated little from the 'norm' as indicated by the AAO Preferred Practice Pattern (American Academy of Ophthalmology 2006). Based on this current study and others, the authors believe that the pharmacological approach should be tailored to each patient, based on the patient's ocular and medical history, undergoing cataract surgery as opposed to mass 'standardized' treatment for all patients. Tailoring the treatment will increase compliance, that is, fewer drugs and less complex or confusing dosing frequencies, enhance efficacy and decrease the cost to the patients.

This study also demonstrated that topical NSAIDs are equally efficacious when compared to topical steroids and ophthalmologists should consider using a two-drug regimen in managing postoperative cataract extraction. However, we suggest that a larger prospective study comparing the two agents is warranted.

Finally, the authors would like to incite a healthy dialogue as to what is best for our patients: the standard 3-drug regimen or a tailored regimen.

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Preliminary evidence of neuropeptides involvement in keratoconus

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Editor,

Keratoconus is the most common corneal dystrophy that leads to severe visual impairment (Rabinowitz 1998). Although the major etiological factors are genetic, the pathogenetic mechanism(s) is unknown. Previous studies demonstrated an increased apoptosis of corneal cells, a decreased corneal sensitivity, anatomic corneal nerve changes and a progression of the disease after trigeminal nerve injury, suggesting a pathogenic role of corneal sensorial innervation in keratoconus development and progression (Ruddle et al. 2003). Corneal nerves release several neuromediators, including substance P (SP), calcitonin-gene-related peptide (CGRP) and vasoactive intestinal peptide (VIP) that modulate corneal trophism, healing and inflammation (Müller et al. 2003).

Cornea level of nerve growth factor, a neurotrophin playing a crucial role on trigeminal nerve function, has been showed to be altered in the advanced stages of keratoconous (Lambiase et al. 2005). To date, no data are available on changes of sensory neuropeptides in keratoconus.

This study was performed in accordance with the Declaration of Helsinki and was approved by the local institutional review board, and written informed consent was obtained from patients.

Sixteen patients (12 keratoconus and four post-infective corneal leukoma) were included in the study and evaluated by clinical history and complete eye examination before surgical procedure.

Twelve keratoconous corneas (six male, six female, mean age: 45 ± 15 years) and four corneas with leukoma (two male, two female, mean age: 52 ± 11 years) were obtained at the time of lamellar keratoplasty. Six normal cadaveric (three male, three female, mean age: 56 ± 8 years) corneas obtained from Rome Eye Bank were used as controls.

Corneas were mechanically dissected, and neuropeptides were

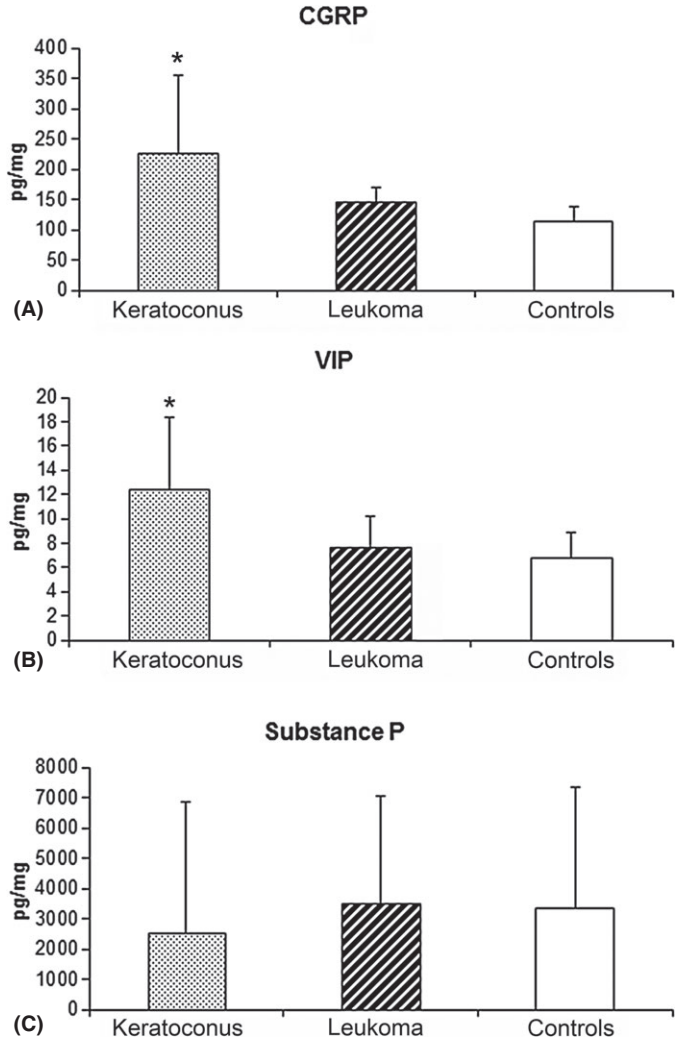

Fig. 1. Corneal levels of calcitonin-gene-related peptide (CGRP) were significantly increased in keratoconus cornea when compared to controls (A). Corneal levels of vasoactive intestinal peptide (VIP) were significantly increased in keratoconus cornea when compared to controls (B). No significant changes were observed in substance P corneal levels (C).

extracted in boiling 1 M acetic acid and by a second extraction with water. The combined supernatants were lyophilized and stored at −20°C before analysis. The tissue concentration of SP, CGRP and VIP was assessed by EIA (Enzo life Science Int, USA; Cusabio Biotech, China; and Phoenix Pharm, INC, USA, respectively) following the manufacturer instruction. Data are expressed as pg/mg protein and presented as mean ± SD. Statistical analysis was carried out by *t*-test, and $p < 0.05$ was considered significant.

SP, CGRP and VIP were detected in all normal and pathologic corneas. Keratoconus corneas showed significantly higher CGRP (228 ± 128 versus 113 ± 25 pg/mg, $p = 0.031$) and VIP (12.4 ± 6 versus 6.8 ± 2.1 pg/mg, $p = 0.019$) levels as compared to controls (Fig. 1). A similar, but not significant, trend was shown when comparing keratoconous to corneal leukomas (CGRP = 147 ± 22 pg/mg; VIP = 7.7 ± 2.5 pg/mg (Fig. 1). No changes of VIP and CGRP content were observed in cornea with leukoma compared with controls. A high variability in SP values was detected in all the samples leading to no significant differences between groups (keratoconus = 2538 ± 4298 pg/mg; leukoma = 3514 ± 3521 pg/mg; control = 3352 ± 3974 pg/mg) (Fig. 1).

We demonstrated that the main sensory neuropeptides such as SP, CGRP and VIP are quantifiable in normal human cornea and that they are altered in keratoconus. Specifically, VIP and CGRP increased in keratoconus when compared to controls, suggesting an involvement of NPs in the development and/or progression of keratoconus.

The increase in corneal levels of VIP and CGRP in keratoconous, but not in leukoma, may reflect the alteration of corneal innervation in keratoconus and/or an attempt of sensory nerves to counteract degenerative changes in keratoconus cornea. In fact, human corneal nerve expresses both VIP and CGRP that are involved in corneal healing, epithelial renewal, cell migration and differentiation. An increase in CGRP and VIP in tears was demonstrated during stromal injury and inflammatory reaction (Sacchetti et al. 2011). Further studies are required to clarify whether NPs quantification is a useful clinical biomarker of disease severity and progression.

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