

Cyclosporine may improve visual outcome after LASIK



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CYCLOSPORINE 0.05% ophthalmic emulsion (Restasis®, Allergan) has been found to help speed up visual recovery after refractive surgery, reported researchers at the annual meeting of the Association for Research in Vision and Ophthalmology (ARVO).

Roxana Ursea MD and colleagues at the University of California at San Diego's Shiley Eye Centre conducted a study involving 102 patients who underwent LASIK surgery. The aim of the study was to compare refractive outcome and complications following LASIK in patients treated with cyclosporine versus a control group who did not receive cyclosporine. Both groups received standard treatment with traditional topical steroids and antibiotic drops.

In addition to standard pre-operative visual acuity, slit lamp and dilated fundus examinations; all patients underwent Schirmer's testing,

evaluations for tear break-up time, and fluorescein and rose Bengal staining. The patients, who ranged in age from 22 to 69 years, also completed a questionnaire regarding dry-eye complaints prior to refractive surgery and six weeks after.

There were 55 females and 47 males.

A total of 52 patients were randomly assigned to receiving treatment with topical cyclosporine, while the remainder served as controls. Patients were given the topical cyclosporine to use daily, beginning day one after the surgery.

Drops may improve visual rehabilitation

Among the cyclosporine patients, 63% had complaints of dry eye at the start of treatment.

As expected, patients treated with cyclosporine also

improved in terms of a reduction of dry eye symptoms. But the excitement in this study was the speedier improvement in visual acuity, said Dr Ursea.

Some 44.2% of patients in the cyclosporine group achieved 20/15 at one week after surgery, with 40.4% achieving 20/20 vision. Eight patients, 15.4%, had a worsening of vision. Among the 50 controls, 60% did not improve beyond 20/25 at one week post-operatively.

Dr Ursea noted that the superior visual outcome among the cyclosporine users continued to be observed at the one and three month's follow-up exams. Indeed, visual acuity of 20/20 or better was seen in the cyclosporine group in 84.6% of patients at one week, 75% at one month and 76.9% at three months.

In the control group, visual acuity of 20/20

or better was seen in 40% at both one week and one month, and 48% at three months. Visual acuity comparisons between the cyclosporine and control groups were all statistically significant.

"With the cyclosporine we noticed a much faster visual recovery, which was maintained. To our knowledge this is the first study of this kind that uses Restasis in post-refractive patients," she told *EuroTimes* in an interview.

Patients younger than 40 years seemed to have a better response with the cyclosporine eye drops than the older patients; a larger proportion of this group had the 20/20 or better results. There were no age-related differences in the control group. As well, there were no differences between male and female patients in terms of visual acuity overall.

The researchers

hope to launch a larger randomised, control trial to confirm the findings. The study did not receive any commercial support.

Cyclosporine has been used for many years as an immunosuppressant. It was approved by the US FDA for keratoconjunctivitis sicca in patients whose tear production is presumed to be suppressed due to ocular inflammation. Approval in Europe is pending.

Cyclosporine is believed to inhibit the activation of T-cells, which are believed to disrupt normal tear production in the lachrymal glands. Improved lachrymal glands function is reported to result in increased tear production.

The most common adverse event following the use of cyclosporine ophthalmic emulsion in clinical trials was ocular burning, reported by 17% of patients. Other events reported in up to 5% of patients included conjunctival hyperaemia, discharge, epiphora, eye pain, foreign body sensation, pruritus, stinging, and visual disturbance (most often blurring).

Cyclosporine emulsion is contraindicated in patients with active ocular infections and has not been studied in patients with a history of herpes keratitis.

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