Combination treatment offers new hope for keratoconus and ectasia patients

Dr. Kanellopoulos underscored the rich potential of the treatment with reference to one particular patient with post-LASIK ectasia. “This patient’s vision even with Intacs implanted was down to 20/200 and was very variable. The next step proposed by the surgeon was a transplant. I initially see this patient in a transplant consultation at a time when I was starting to work with UVA cross-linking. So we decided to remove the Intacs segments and perform UVA cross-linking which brought his vision to about 20/70. Six months later, we performed a minimal topography-guided PRK and this patient now has an uncorrected visual acuity of 20/20 with over three years’ follow-up. While this is perhaps the most dramatic improvement I’ve seen in a patient thus far, I think it does serve to underline the great results that can be obtained with this approach,” he said.

Turning to his overall results, Dr. Kanellopoulos said that the treatment had been effective in normalising the cornea and improving vision in a case series of 27 eyes treated with UVA-induced cross-linking followed by topography-guided PRK in 14 eyes. In 22 eyes, there was a reduction of the steepest K by at least two diopters, and 22 eyes also showed a decrease of at least 2.4 diopters in spherical equivalent. He also noted that there was no reduction in mean endothelial cell counts after treatment.

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Among the eyes that underwent PRK after cross-linking, mean UCVA improved from 20/400 to 20/60 and mean BCVA improved from 20/100 to 20/40. The spherical equivalent was reduced by 6.4 D, steepest K increased from 54 D to 47 D, and the pachymetry changed from 450 to 397 microns.

Dr. Kanellopoulos said that while the effect of collagen cross-linking is not so dramatic in terms of reducing the cone, it is clearly effective in stabilising the underlying keratoconus or ectasia.

“Today we even treat early cones in a 20-year-old patient and there is no obvious reduction in keratometry in a cone that is at 48 D steepest K. However, when we started doing this we were dealing with patients that were about to undergo transplant in corneas which were 56 D or 54 D at steepest K and we had about a 2.5 D steepest K shift with those patients, even though half of them ended up undergoing transplants anyway because they were extreme cases,” he said.

Dr. Kanellopoulos also noted that the beneficial effects of cross-linking may carry over into treating post-LASIK regressions.

“We have been looking at using this treatment with some of the cases of post-LASIK regression in high myopes that we had treated in the past. These patients are non-ectatic patients who have returned after three or four years with a small hyperopic regression of about one diopter. In some of these eyes we have tried cross-linking and we succeeded in reversing the regression in several of those eyes. While we have had some failures in the keratoconus population, this basically reinforces the point that in most eyes the cross-linking does stiffen the cornea and changes the biomechanical shift that the keratome cut induces in LASIK,” he said.

Dermot McGrath in Athens

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