

Clinical interest of corneal asphericity modulation for the correction of presbyopia in hyperopic patients: A prospective study over 14 months

Nesrine Rahmania, Imene Salah and Damien Gatinel



ABSTRACT

Purpose: To compare Distance Visual Acuity (DVA) in Non-Dominant Eye (NDE) achieved with monovision using contact lenses with post-operative bilateral PresbyLasik Custom Q and to confirm laser-induced multifocality in presbyopic and hyperopic patients.

Method: Prospective intra-individually controlled superiority study including presbyopic hyperopic patients led between January 2018 and February 2019. Classical monovision was simulated with contact lenses aiming at myopic defocus in NDE whereas an emmetropic correction was targeted in Dominant Eye (DE). The visual acuities were measured first with contact lenses then 1, 3 and 6 months post-operatively. The NDE is targeted, an aspheric profile by inducing a negative spherical aberration and myopic defocus and in DE a central emmetropia with positive spherical aberration. Corneal asphericity (Q-Factor), corneal spherical aberration (C4, 0 and C6, 0), were measured in all patients before and after surgery.

Results: 28 patients (mean age: $56,03 \pm 4,31$ years) were included. DVA in Log Mar was statically different with contact lenses and 6 months after surgery in NDE ($0,69 \pm 0,09$ versus $0,04 \pm 0,18$; $p < 0,00001$). Corneal asphericity was equal to $0,66 \pm 0,24$ and to $-0,12 \pm 0,37$; ($p < 0,00001$), corneal $\Delta C40$ to $-0,07 \pm 0,15$ microns versus $0,01 \pm 0,08$ microns; $p = 0,013$, corneal $\Delta C60$ to $-0,008 \pm 0,02$ microns versus $-0,004 \pm 0,03$ microns; $p = 0,589$ respectively for NDE and DE.

Conclusions: The study shows significant improvement in visual scores by changing corneal asphericity with PresbyLasik Custom Q compared to monovision.

BIOGRAPHY

Nesrine Rahmania graduated her MD course from Amiens University Hospital, France and then completed her training in Refractive Surgery at the Rothschild Foundation Refractive Surgery Department, Paris. She currently leads research studies in Presbyopia while developing Telemedicine in France.



[3rd Global Ophthalmology Summit](#) | June 29, 2020

Rothschild Foundation, France

Citation: Nesrine Rahmania, Clinical interest of corneal asphericity modulation for the correction of presbyopia in hyperopic patients: A prospective study over 14 months, Ophthalmology Summit 2020, CPD Accredited 3rd Global Ophthalmology Summit, June 29, 2020, Page No.6