Morphometric characteristics of the cornea in patients with chronic simple glaucoma and healthy subjects
F. Saenz-Frances, A. Fernandez Vidal, L. Borrego, E. Santos Bueso, C. Mendez Hernandez, J.M. Martinez De La Casa, J. Garcia Sanchez, J. Garcia Feijoo
Hospital Clinico Universitario San Carlos, Universidad Complutense, Madrid, Spain

Objectives: To compare corneal characteristics in patients with chronic simple glaucoma and healthy individuals.

Material and methods: The following data were obtained in 123 eyes of healthy volunteers and 129 eyes of patients with chronic simple glaucoma: age, power of the major (PMAXp) and minor (PMINp) corneal axes (determined using the Pentacam®), central corneal thickness determined by ultrasound pachymetry (CCTus) and Pentacam® (CCTpu) and minimum corneal thickness determined by Pentacam® (CCTmin); the orientation of the minor axis of the cornea was classed as horizontal, vertical or oblique.

Results: The Kolmogorov-Smirnov test revealed a non-normal distribution of quantitative variables such that the Mann-Whitney U-test was used to compare all variables. Significant differences were detected in the orientation of the minor corneal axis (distributions were horizontal 48.8%, oblique 24.4% and vertical 26.8% in the normal eyes; and horizontal 34.6%, oblique 31.5% and vertical 33.8% in the glaucomatous eyes; p = 0.041), CCTus (difference of 7.69 µm in favour of the glaucomatous eyes; p = 0.037), CCTpu (difference of 21.28 µm in favour of the glaucomatous eyes; p < 0.0001) and CCTmin (difference of 21.02 µm in favour of the glaucomatous eyes; p < 0.0001).

Conclusions: The patients with chronic simple glaucoma and individuals with normal eyes showed significant differences in central corneal thickness and the orientation of the minor corneal axis.