

## **Study of the macular choroidal thickness profile in keratoconus patients using Swept-Source optical coherence tomography.**

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### **Purpose**

To determine the choroidal thickness (CT) profile in keratoconus (KC) patients using swept-source optical coherence tomography (SS-OCT).

### **Methods**

Prospective, non-interventional study that analysed 102 eyes of 51 KC patients diagnosed by Pentacam. Their axial length (AL) was always under 26 mm. The macular choroidal thickness profile was created by manually measuring the distance between the posterior edge of the retinal pigment epithelium and the choroid-sclera junction under the fovea using Triton SS-OCT (Topcon Co. Japan); Three further determinations were performed at successive points 1000  $\mu$ m nasal to the fovea and five more temporal to the fovea. These results were compared to healthy age and gender-matched controls.

### **Results**

Mean age was  $34.9 \pm 13.5$  years and mean AL was  $24.1 \pm 1.3$  mm. 62.74% were males. Mean KC grade was 2; 39 patients were classified as early KC, 34 as moderate and 29 as severe. The choroidal profile was similar in both groups. Mean SFCT was 381.3  $\mu$ m, whilst in healthy population was 285.8  $\mu$ m ( $p < 0.00001$ ). CT in KC patients was statistically thicker in 7 out of the 8 measure locations ( $p < 0.00001$ ). CT grows progressively thinner with age, being thicker in patients with KC until age 45. From then on, CT in KC patients is reduced until it reaches its normal values for an age-matched healthy population.

### **Conclusions**

CT in KC patients is statistically thicker than healthy population. After age 45, CT decreases reaching similar values in both groups, possibly in relation with KC stabilisation.

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