



## EFFECT OF TOPICALLY ADMINISTERED BIMATOPROST 0.03% AND BIMATOPROST 0.015% ON CENTRAL CORNEAL THICKNESS

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**Purpose:** To compare the effect of bimatoprost 0.03% and bimatoprost 0.015% (50% dilution) on central corneal thickness (CCT).

**Design:** Randomized controlled trial with crossover

**Participants:** 23 patients with primary open angle glaucoma or ocular hypertension

**Methods:** Patients were randomized to receive once daily bimatoprost 0.03% in one eye and bimatoprost 0.015% in the fellow eye. At week 4, the eye with diluted bimatoprost was switched to bimatoprost 0.03% for four more weeks. CCT was measured by ultrasound pachymetry (Compuscan P Ultrasonic Pachymeter UPC 1000) on baseline, week 4 and week 8 visits.

**Main Outcome Measure:** CCT

**Results:** Baseline mean CCT $\pm$ SD was 0.546 $\pm$ 0.039 mm in the bimatoprost 0.03% group and 0.542 $\pm$ 0.042 mm in the bimatoprost 0.015% group ( $p=0.698$ ,NS). Week 4: mean CCT $\pm$ SD was 0.541.0 $\pm$ 0.037 mm in bimatoprost 0.03% group and 0.541 $\pm$ 0.039 mm in the diluted group ( $p=0.947$ ,NS), without statistically significant differences between baseline and week 4 visits in both groups. Week 8: mean CCT $\pm$ SD was 0.537 $\pm$ 0.038 mm (bimatoprost 0.03%) and 0.535 $\pm$ 0.037 mm (bimatoprost 0.015%) ( $p=0.849$ ,NS) with statistically significant differences between baseline and week 8 for both groups ( $p=0.01$  and  $p=0.008$ ). For bimatoprost 0.03%, the comparison between week 4 and week 8 showed no statistically significant differences ( $p=0.09$ ). However, the comparison between week 4 and week 8 in the bimatoprost 0.015% group showed a statistically significant difference ( $p=0.002$ ).

**Conclusions:** In our study group, eight weeks were necessary to achieve a statistically significant corneal thickness reduction. These data also suggest that this effect occurs with a dose-response pattern.