ABSTRACT

PURPOSE:
To measure the macular and peripapillary choroidal thickness using Enhanced Depth Imaging (EDI) Spectral Domain optical coherence tomography in patients with essential hypertension.

MATERIALS AND METHODS:
This was a case–control, cross-sectional prospective study. A total of 25 patients with systemic hypertension, and 25 healthy controls over 30 years of age, were included. Macular and peripapillary choroidal thickness (SFCT) was measured using a Heidelberg SD-OCT platform operating in the enhanced depth imaging mode. All study participants had best corrected visual acuities of 20/25 or more, a refractive error in the range +3.0 to –3.0 diopters and intraocular pressure (IOP) lower than 21 mmHg. Those with systemic or ocular disease (glaucoma, uveitis, high myopia, age-related macular degeneration, diabetes mellitus, etc.) or a history of ophthalmic surgery that may have affected the choroidal vascular network were excluded.

RESULTS:
The subfoveal choroidal thickness was significantly thicker in the hypertension group compared to the normal participants (P<0.015). The macular choroidal thickness was significantly thicker in the superior, inferior and temporal quadrants among the hypertensive patients (Superior- P <0.08, inferior P<0.014, temporal P < 0.0003). Though the choroid thickness in the nasal quadrant was also thicker in nasal quadrant in the hypertensive patients the difference was not statistically significant (P<0.067). The peripapillary choroidal thickness in superior, inferior and temporal quadrants was significantly thicker in the hypertensive group (Superior-P<0.023, inferior-P<0.033, nasal-P<0.447, temporal-P<0.008)

CONCLUSION:
The choroidal thickness was significantly thicker in the hypertensive patients in our study. However further larger population-based studies are required to better understand the effect of systemic hypertension on choroidal thickness.
KEYWORDS: Choroidal thickness, Hypertension, Spectral domain OCT, Enhanced Depth Imaging