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Choroidal thickness change in central serous chorioretinopathy after low-fluence photodynamic therapy (PDT) using enhanced depth imaging optical coherence tomography (EDI-OCT)

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Purpose: To investigate the change in choroidal thickness and subanalyze Haller and Sattler layers in patients with central serous chorioretinopathy (CSC) following low-fluence photodynamic therapy (PDT) using enhanced depth imaging optical coherence tomography (EDI-OCT).

Methods: The study design used was a retrospective and comparative series. Medical records of the patients that presented with CSC in Atatürk Training and Research Hospital between March 2016 and September 2017 were reviewed. Patients with a diagnosis of CSC and a history of decreased visual acuity for more than three months and treated with half-dose PDT with verteporfin were included the study. Patients who received previous PDT for chronic CSC or had evidence of choroidal neovascular membrane on FA were excluded. Choroidal thickness was measured from the posterior edge of the retinal pigment epithelium to the choroidal-scleral junction at 500 μm intervals up to 2000 μm temporal and nasal to the fovea (nine locations). Main outcome measures were the change in choroidal thickness and subanalyze Haller and Sattler layers after the treatment.

Results: A total of 13 eyes of 13 patients were included in the study. The mean age of the patients with CSC was 49 ± 11 years (min: 40-max: 68). The serous subretinal fluid resolved in all patients after the treatment. The mean subfoveal choroidal thickness decreased significantly from $310.60 \pm 89.16 \mu\text{m}$ at baseline to $308.41 \pm 90.03 \mu\text{m}$ after PDT ($P < 0.05$). The mean Haller's layer thickness decreased significantly from $203.40 \pm 86.37 \mu\text{m}$ to $200.20 \pm 81.55 \mu\text{m}$ ($P < 0.05$). The thickness of Sattler's layers did not differ significantly after PDT treatment ($P > 0.05$).

Conclusion: Half-dose PDT for CSC resulted in thinner subfoveal choroidal thickness after PDT treatment. Sattler's layer had similar thickness in eyes with active CSC and after PDT. This study finding suggested that subfoveal choroidal thickness changes after half dose PDT were likely due to the changes in Haller's layer.

Biography

Mücella Arıkan Yorgun, MD, FEBO, graduated from Hacettepe University in 2005 and has completed Residency in Atatürk Training and Research Hospital, Turkey. She is a Research Fellow in the Retina Department in the same hospital.

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