EVALUATION OF FOVEAL AND CHOROIDAL THICKNESS CHANGES IN ADULT HAEMODIALYSIS PATIENTS USING SPECTRAL-DOMAIN OPTICAL COHERENCE TOMOGRAPHY

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Purpose: To study the effects of haemodialysis on foveal and choroidal thickness using Fourier-domain optical coherence tomography (RTVue, Optovue Inc., Fremont, CA).

Methods: We prospectively enrolled 25 haemodialysis patients (17 male and 8 female) and performed optical coherence tomography scanning using a high speed and high resolution FD-OCT device λ= 840 nm, 26,000 A-scans/sec., and 5 µm axial resolution) before and after haemodialysis. Choroidal thickness measurements were taken by a masked observer at the fovea and from 5 more points, respectively, 1000µm, 500µm nasal, and 500µm, 1000µm, 1500µm temporal to the fovea; choroidal and foveal thickness data before and after haemodialysis were compared by statistical analysis.

Results: The mean choroidal and foveal thickness in patients before haemodialysis were 188.16±56.9 and 248.32±26.8; 161.54±49.0 and 242.96±33.9 after haemodialysis respectively. Significant difference in mean choroidal thickness was found between measurements before and after haemodialysis (p<0.001). However, there was no significant difference with respect to macular thickness between patients before and after haemodialysis session (p>0.05).

Conclusion: Haemodialysis causes a significant decrease choroidal thickness. This difference may be due to the extensive fluid absorption in haemodialysis which can be attributed to decreased ocular blood flow. The clinical impacts of this phenomenon in further studies