SUBRETINAL FLUID OPTICAL DENSITY IN RHEGMATOGENOUS RETINAL DETACHMENT

M. Neudorfer, A. Leshno, A. Loewenstein, A. Weinberg, A. Barak
Ophthalmology, Tel Aviv medical center, Israel

Purpose: Investigation of the changes over time in optical density characteristics of sub retinal fluid (SRF) in rhegmatogenous retinal detachment (RRD). Methods: Patients with first onset RRD who underwent optical coherence tomography (OCT), were included in the study. The highest quality B-scan containing SRF was analyzed. Optical density (OD) measurements were obtained. Optical density ratios (ODRs) were calculated as SRF OD divided by vitreous OD. Time from onset of RRD was determined by first signs of visual loss. Patients were divided into 3 groups: acute duration (a week or less); sub-acute duration (1 week to 1 month) and chronic duration (more than a month). Results: 35 eyes met the inclusion criteria. Mean ODR was significantly (p<0.05) higher in eyes who were diagnosed with RRD more than a month after onset compared to those diagnosed before a month after onset. ODR was found to have a significant association with 3 months post-operative visual acuity (p<0.0001). There was no significant difference in vitreous OD between the groups. Conclusions: ODR of the SRF increases in RRD over time. This might reflect a change in the composition of the SRF. Our finding correlate with previous studies on the effect of RRD duration and the SRF. In addition we found a significant association between preoperative ODR values and 3-months postoperative BCVA, suggesting its future role as a biological marker for the prediction of postoperative visual results. Further investigation is needed to evaluate the use of this parameter in determining prognosis in RRD patients.