ABSTRACT TITLE

TITLE: Optical Coherence Tomography Predictors of Visual Outcome in Macular Edema

PROGRAM # (Final ID)

ABSTRACT FINAL ID: 256 - D0101

SESSION TYPE: Poster Session

POSTER BOARD # (DOI)

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PRESENTATION START/END

SESSION ABSTRACT START TIME: 8:30 AM
SESSION ABSTRACT END TIME: 10:15 AM

SESSION # (Abbreviation)

SESSION ABBREVIATION: 111

SESSION TITLE: Macular Edema
SESSION DAY & DATE: Sunday, May 5, 2013
SESSION START TIME: 8:30 AM
SESSION END TIME: 10:15 AM
SESSION LOCATION: Exhibit / Poster Hall

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Study Group:

ABSTRACT BODY:

Purpose: To identify new biomarkers in spectral domain optical coherence tomography (SD-OCT) images to predict visual acuity (VA) outcome in patients with macular edema (ME).

Methods: Patients with center-involved intraretinal ME (N=38 eyes) that resolved within 1 year follow up were grouped by etiology. Group A (N=25 eyes) with diabetic macular edema (DME) and Group B (N=13 eyes) with ME due to other causes. ETDRS VA testing and macular imaging using Spectralis SD-OCT were done before and after edema resolution. Matlab and Adobe Photoshop softwares were used in the analysis of the central 1500 μ region. Internal reflectivity was calculated from raw data images. Image analyses included (i) recording of center (CST) and paracentral subfield thickness; (ii) quantification of outer retinal disruption, including the external limiting membrane (ELM), inner-segment/outer-segment junction (IS/OS), and cone outer segment tips (COST); (iii) analysis of inner retinal cysts and regions of disorganization, including size, reflectivity, and location.

Results: Baseline logMAR VA ranged from 0 to 1.6 and CST ranged from 322 to 600 μ. Regression analyses were done. In both groups, final VA correlated strongly with initial VA with no significant correlation with baseline CST. However, paracentral subfield thickness correlated significantly with final VA, especially for the inner and outer superior subfields in group A (p<0.05). After adjusting for baseline VA, the extent of IS/OS and ELM disruption correlated significantly with final VA (p<0.001) in both groups. In group A, inner retinal disorganization area, the number of scan lines involved, and presence of disorganization in the center line scan were significantly correlated with final VA (p<0.001, p=0.001, p=0.04 respectively). Cyst area was more highly correlated with VA outcome in group B than was in group A (p=0.047 vs. p=0.097). In group B, the extent and reflectivity of inner retinal disorganization correlated with final VA (p=0.0027, p=0.05 respectively). There was no correlation between cyst reflectivity, location, COST interruptions, epiretinal membranes and final VA in either group.

Conclusions: Paracentral thickness correlated better with final VA than CST in DME. The extent of photoreceptor layer disruption & inner retinal disorganization correlated significantly with final VA in both groups. The markers discussed above can be used as potential predictors of VA outcome.

(No Image Selected)

Commercial Relationship(s) Disclosure: Salma Radwan: Commercial Relationship: Code N (No Commercial Relationship) | Sohini RoyChowdhury: Commercial Relationship: Code N (No Commercial Relationship)
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Clinical Trial Registration: No

Other Registry Site:

Registration Number: