Abstract 12

NEW QUANTITATIVE OCTA METRICS FOR THE ASSESSMENT OF THE GROWTH AND ACTIVITY OF MACULAR NEOVASCULARIZATION SECONDARY TO AGE-RELATED MACULAR DEGENERATION.

Oral

Arrigo A.*, Aragona E., Bianco L., Antropoli A., Berni A., Saladino A., Battaglia Parodi M., Bandello F.

IRCCS San Raffaele Scientific Institute ~ Milan ~ Italy

Purpose:

To perform an optical coherence tomography angiography (OCTA) assessment of macular neovascularization (MNV) secondary to age-related macular degeneration (AMD) to test novel quantitative metrics and to provide new insights regarding the patterns of growth and activity of the neovascular network.

Methods:

We collected data from consecutive patients affected by type 1, type 2 or mixed MNV type secondary to AMD. All the lesions were never treated before the inclusion into the study and underwent anti-VEGF treatments by a loading dose of three-monthly injections followed by a treat-and-extend regimen. All the included patients underwent complete ophthalmologic and multimodal imaging assessments. Quantitative OCTA metrics included MNV vessel tortuosity (VT), MNV reflectivity, and MNV high resolution/high speed OCTA gap. The planned follow-up was at least of 1-year. All the clinical and imaging data were statistically analyzed to unveil significant differences and correlations.

Results:

We included 60 MNV eyes (60 patients). Baseline BCVA was 0.51±0.48 LogMAR, improved to 0.30±0.29 LogMAR at the end of the follow-up. MNV VT cutoff value of 8.40 was able to detect two different MNV subgroups, characterized by different outcome and atrophy onset. MNV reflectivity was a useful metric to predict the growth rate and the direction of the expansion of the MNV network. Furthermore, MNV high resolution/high speed OCTA gap metric was useful to detect neovascular capillaries characterized by different filling patterns. All the three metrics significantly correlated with the activity of the MNV lesions and the visual outcome.

Conclusions:

MNV VT, MNV reflectivity and MNV high resolution/high speed OCTA gap resulted clinically relevant OCTA metrics for a deeper assessment of MNV features and clinical course. These advanced quantitative analyses highlighted the need of novel classification strategies of MNV lesions, to customize anti-VEGF treatments, optimizing the long-term morpho-functional outcome.