A COMPARISON OF EFFECTS OF INTRAVITREAL TRIAMCINOLONE ACETONIDE AND BEVACIZUMAB ON MACULAR AND RETINAL NERVE FIBER LAYER THICKNESSES IN PATIENTS WITH DIABETIC MACULAR EDEMA

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Purpose: To determine changes of macular and retinal nerve fiber layer (RNFL) thicknesses in diabetic macular edema patients receiving intravitreal triamcinolone and bevacizumab using Fourier domain optical coherence tomography (OCT).

Materials and methods: Macular and RNFL thicknesses of 27 diabetic macular edema patients [11 (40.7%) male and 16 (59.3%) female] aged between 38 and 80 years (63.63±10.53) were measured before and 1 week after the intravitreal injection. Fourteen (51.9%) patients received 2mg triamcinolone and 13 (48.1%) patients received 1.25mg bevacizumab. Macular thickness measurement was performed in default fast macular thickness mode (20°x20°) and RNFL measurement was performed in default RNFL measurement mode with activated automatic real time function of Spectralis® OCT. For the statistical analysis of measurements central 1mm macular and global RNFL thicknesses were used. Statistical analyses of differences between macular and RNFL thicknesses were determined using Wilcoxon signed rank test.

Results: Mean macular and RNFL thicknesses of triamcinolone group, before and after the intravitreal injection were 578.71±163.11µm vs 439.14±59.29µm and 119.57±35.78µm vs 110.36±27.83µm, respectively. Mean macular and RNFL thicknesses of bevacizumab group, before and after the intravitreal injection were 503.38±110.03µm vs 434.77±98.75µm and 105.69±35.78µm vs 103.85±13.74µm, respectively. In triamcinolone group, there was significant decline in macular and RNFL thicknesses before and after the injection (p values were 0.003 and 0.022, respectively). In bevacizumab group, macular thickness was significantly decreased (p=0.012) but there was no significant decline in RNFL thickness (p=0.135).

Conclusions: In short-term, intravitreal triamcinolone led to more significant changes than intravitreal bevacizumab in macular and RNFL thicknesses.