Medical Retina

CHARACTERIZATION OF TWO-YEAR PROGRESSION OF DIFFERENT PHENOTYPES OF NONPROLIFERATIVE DIABETIC RETINOPATHY

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PURPOSE:

To characterize the two-year progression of different risk phenotypes of nonproliferative diabetic retinopathy (NPDR) in type 2 diabetes (T2D).

METHODS:

A prospective longitudinal cohort study (CORDIS, NCT03696810) was conducted with 4 visits (baseline, 6-months, one-year and two-years). Ophthalmological examinations included best corrected visual acuity, color fundus photography (CFP) and optical coherence tomography (OCT and OCTA). Risk phenotype classification was performed based on decreased vessel density (VD) ≥ 2 SD in the retinal superficial capillary layer (SCP) -Phenotype C; and increased central retinal thickness (CRT) without decreased vessel density - Phenotype B. ETDRS grading was performed at the baseline and last visits based on 7-fields CFP.

RESULTS:

One hundred and twenty-two eyes from T2D individuals and NPDR fitted in the categories of phenotype B and C and completed the two-years follow-up. Sixty-five eyes (53%) were classified as phenotype B and 57 eyes (47%) as phenotype C. Neurodegeneration represented by thinning of the ganglion cell layer and inner plexiform layer was present in both phenotypes and showed significant progression over the two-year period (p0.001). In phenotype C, significant progression in the two-year period was identified in decreased skeletonized VD (p=0.01), whereas in phenotype B microvascular changes showed decreases in PD (p=0.012), with preferential involvement of the DCP (p0.001).

CONCLUSIONS:

In the two-year period of follow-up both phenotypes B and C showed progression in retinal neurodegeneration, with different changes at the microvascular level between the two phenotypes. Phenotype B progression was characterized by decreases in PD with preferential involvement of the DCP and phenotype C showing decreases in VD.