PURPOSE: Due to the clinical and socioeconomic relevance of type 2 Diabetes Mellitus (2DM), it is important finding genetic markers that can help recognizing patients presenting a higher risk of retinal complications, and integrating data from the different ophthalmological tests. They will help us with diagnostic/prognostic and treatment decisions for 2DM subjects at risk of Diabetic retinopathy/Diabetic Macular Edema (DR/DME), improving the health of these patients and lower the health costs that complications cause. The main goal of this study is to integrate molecular-genetic markers with information from imaging systems to establish the preclinical diagnosis of DR/DME in DM2 and identify patients at higher risk for the progression of both pathologies, and designing algorithms and write a clinical practice guide for General Practice and Ophthalmology that helps to improve the visual prognosis in the affected population.

METHODS: A longitudinal, prospective, case-control study: 62 2DM patients of more than 8 years of illness; and 35 patients as control group. All of them will follow the same protocol: Initial interview, Systematized ophthalmological examination, extraction of 2 fasting blood simples and Statistical Analysis.

RESULTS: 27 of the 62 diabetic patients (43.5%) presented normal retinographies or minimal alterations; however, in the OCT and fluorescein angiography, signs of deeper DR or EMD were observed. 64% of the patients with 2DM had glycosylated hemoglobin (HbA1c) 6.5%, however only 7% had HbA1c higher than 7.6%. The molecular results were not statistically significant, so new studies will be necessary to achieve efficient answers.

CONCLUSIONS: A non-mydriatic retinography is not sufficient as screening to rule out mild DR/EMD. The screening protocol must include a complete ophthalmological examination and multimodal imaging tests that allow making the appropriate clinical and therapeutic decisions for a better visual prognosis, as well as to avoid unnecessary health expenses.