Detection of Vascular Macular Affection in Prediabetics

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Abstract

Background:

Diabetes, a major health problem, is preceded by a stage called prediabetes. Prediabetes is an intermediate state of hyperglycemia between normal glucose tolerance and overt Type 2 diabetes mellitus (T2DM), there is little evidence that the microvascular complications of diabetes can manifest during the stage of prediabetes. Diabetic retinopathy (DR) is the leading cause of blindness among working aged adults around the world. The ophthalmoscopy and color fundus photography are the current gold standards for diagnosis and staging of DR, however, optical coherence tomography angiography (OCTA) is rapid, noninvasive tool that does not need dye injection. Objectives: The aim of the study is to assess early macular vascular affection using OCTA in prediabetics.

Methods:

66 normoglycemic subjects represented the control group that was studied in versus to the 66 prediabetic subjects (diagnosed by FBS or 2hr pp or HbA1C) representing the case group.

Subjects of both groups were normotensives with normal kidney functions and no previous ocular surgeries. They were all subjected to thorough history taking, full examination, BMI calculation and retinal imaging by OCTA in addition to laboratory testing of HbA1C and A/C ratio.

Results:

Our results showed that 30.3 % of the prediabetic group had signs of mild proliferative retinopathy by OCTA and 12.1% suffered microalbuminuria. None of the HbA1C , A/C or BMI was significantly correlated to the retinopathy detected in prediabetics.

Conclusion:

Early diabetic retinopathy can occur in the prediabetic stage.