

# **Homocysteine as a Screening and Diagnostic Indicator for Assessing Diabetic Retinopathy Risk in Patients with Diabetes Mellitus**

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## **ABSTRACT**

**Background:** Diabetes mellitus is a set of metabolic diseases characterized by chronic hyperglycemia as a consequence of lack in insulin action, secretion, or both. Diabetic retinopathy (DR) is a major complication of diabetes mellitus (DM), which remains a leading cause of visual loss in working-age populations.

**Aim of the Work:** We aim to investigate plasma homocysteine as a screening and diagnostic indicator for assessing diabetic retinopathy (DR) risk in patients with diabetes mellitus.

**Patients and Methods:** This was an observational study which was conducted on 90 diabetic patients at diabetes outpatient clinic at Ain Shams University Hospital, to investigate plasma homocysteine as a screening and diagnostic indicator for assessing diabetic retinopathy (DR) risk in patients with diabetes mellitus.

**Results:** Our study shows that there was a high statistically significant difference between the studied groups regarding (age of the patient and duration of diabetes mellitus) also clinical data (HTN, SBP and DBP) also laboratory data (FBS, HbA1C, eGFR and albumin /creatinine ratio). The study also shows that there was a high statistically significant difference between the studied groups regarding homocysteine level. In our study there was positive correlation found between homocysteine level and (age, duration of diabetes, HbA1C and FBG, eGFR and ACR). In addition, there was no statistically significant difference between the studied groups regarding (gender, smoking and BMI).

**Conclusion:** Diabetic retinopathy (DR) is a major complication of diabetes mellitus (DM). There was significant relation between diabetic retinopathy and plasma homocysteine level. Plasma homocysteine is a convenient and effective measurement for predicting the presence of DR in diabetic patients and can be it can be utilized as an indicator of diabetic retinopathy.

**Keywords:** Homocysteine, Assessing Diabetic Retinopathy, Diabetes Mellitus