

Correlation between diabetic retinopathy and the severity of coronary artery disease in Egyptian patients with type II diabetes mellitus

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Background: Diabetic retinopathy is an early and frequent marker of other vascular complications of diabetes Mellitus. The aim of the present study was to detect the correlation between diabetic retinopathy and the severity of coronary artery disease determined by coronary angiography in patient with type II diabetes mellitus.

Patients and methods: This study included 80 Patients with type II diabetes mellitus with clinically suspected coronary artery disease (CAD) who were scheduled for standard coronary angiography +/- angioplasty. Diabetic retinopathy was evaluated and classified according to the International Clinical Diabetic Retinopathy Scale; and accordingly patients were classified into 2 groups: Group A (41 patients) with diabetic retinopathy (DR) and Group B (39 patients) without DR. The severity and extent of CAD were assessed from coronary angiograms by using 3 different scores (Vessel number score, severity score, and extent score).

Results: CAD severity was significantly correlated with the presence of DR ($r: 0.6, P < 0.001$), grade of DR ($r: 0.5, P < 0.001$), duration of diabetes ($r: 0.2, P: 0.03$) and history of IHD ($r: 0.2, P: 0.01$); where the presence of DR was the only independent factor related to the severity score in multivariate analysis ($r: 0.48, P < 0.001$). Significant correlation was found between extent score and the following variables: presence of DR ($r: 0.7, P < 0.001$); grade of DR ($r: 0.6, P <$

0.001), duration of DM ($r: 0.3, p: 0.01$) and previous IHD ($r: 0.4, P: 0.001$); where the presence of DR ($r: 0.37, P: 0.001$) and previous myocardial infarction ($r: 0.48, P: 0.004$). were the only independent factors related to the extent score in multivariate analysis.

Also vessel number score was significantly correlated with the presence of DR ($r: 0.6, P < 0.001$) and among the DR group 22 % of the patient had left main disease while 18% of the other group had normal coronary angiography.

Conclusion: In individuals with type 2 diabetes, those with retinopathy have more diffuse and severe coronary atherosclerosis, compared with diabetics without retinopathy and have higher risk of incident CHD, independent of glycemic the other traditional cardiovascular risk factors.

And being a specific and noninvasive measure of diabetic microvascular damage, retinopathy signs may therefore also have a role in improving cardiovascular risk prediction in patients with diabetes