

Detection Of Sub Clinical Left Ventricular Systolic Dysfunction in Diabetic Patients with Diabetic Retinopathy By 2D Speckle Tracking Echocardiography

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ABSTRACT

BACKGROUND:

Retinopathy is one of the microvascular complications of DM. In some studies, it has been proposed that diabetic retinopathy might be associated with LV diastolic dysfunction, development of heart failure, and diabetic cardiomyopathy in the future

OBJECTIVE:

To detect subclinical left ventricular Systolic dysfunction by 2D Speckle Tracking Echocardiography in Patients with DM with Diabetic retinopathy and to Correlate between the class of retinopathy and the subclinical systolic dysfunction.

PATIENTS AND METHODS:

Our study comprised 70 patients (31 male & 39 females) suffering from diabetes mellitus (type I & type II) were recruited from the endocrinology clinic & ophthalmology clinic and 30 apparently normal people with matched age, sex status as controls (14 males and 16 females). The studied population was classified into two groups: *First group (patient group) consisted of 70 patients with Type I

& II DM {31 males and 39 females with mean age 46.44 ± 8.05 years & mean duration of diabetes is 13.29 ± 6.04 years and mean HbA1C 8.63 ± 1.75 . *Second group (control group) consisted of 30 healthy subjects {16 males and 18 females with mean age 44.30 ± 7.91 .

In comparison with healthy subjects, patients with diabetic retinopathy were found to have lower LV systolic function using 2D speckle tracking. According to LV GLSS% showed that the mean values were

-14.87 ± 1.28 and -20.62 ± 1.31 in the patients and control groups, respectively. They showed highly statistically significant difference between the two groups according to LV GLSS%. The mean values of the patient subgroups were -14.87 ± 1.28 and -16.75 ± 0.75 in subgroup R +VE and R -VE, respectively. They showed a statistically highly significant difference ($P < 0.001$).

CONCLUSION:

The 2D speckle tracking method appears to be useful in the detection of LV systolic dysfunction in patients with diabetic retinopathy (one of the microvascular complications of DM). Subclinical left ventricular systolic dysfunction in diabetic patient with diabetic retinopathy is associated with the fact that DM is known to cause the development of heart failure even in the absence of coronary artery disease. The presence of diabetic retinopathy signifies an excess risk of HF, independent of known risk factors. Parameters of LV systolic function were worsened with increasing severity of retinopathy.

KEYWORDS:

Subclinical LV dysfunction, 2D speckle tracking echocardiography, diabetic retinopathy.

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