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Correlation of Diabetic Retinopathy with Myocardial Remodelling and Quality of Life in Type II Diabetes Mellitus Patients

Sangeetha. T [1*], Yashwanth. A[2], Anunitha Rayapuraju[3]

[1]Department of Ophthalmology, SDUAHER, Kolar, Karnataka, India.
[2]Narayana Health Heart Centre, R L Jalappa Hospital & Research, Kolar, India.
[3]Department of Ophthalmology, SDUAHER, Kolar, India.

Type II diabetes mellitus (T2DM) is a growing global health burden, frequently complicated by diabetic retinopathy (DR) and myocardial remodeling, both of which significantly impair quality of life (QoL) through visual, cardiovascular, and psychological consequences. This cross-sectional observational study, conducted at a tertiary care center, investigated the relationship between DR severity, cardiac structural changes, and QoL in ninety-seven T2DM patients over 18 months. Inclusion criteria required T2DM duration of over five years without prior cardiac conditions. Clinical evaluations included visual acuity, slit lamp biomicroscopy, indirect ophthalmoscopy, and echocardiography, with DR classified as per the Early Treatment Diabetic Retinopathy Study (ETDRS) guidelines. QoL was assessed using Cardiomyopathy Questionnaire (Kanas city)- KCCQ-12. Statistical analysis (SPSS, $p<0.05$) revealed that DR progression correlated with myocardial remodelling, indicated by increased left ventricular diameters and reduced ejection fraction. Proliferative DR patients exhibited significantly higher ECG abnormalities (90%) versus those with normal fundus (30%), suggesting elevated cardiovascular risk. Advancing DR was also associated with higher systolic blood pressure, poorer glycaemic control (elevated HbA1c), increased nephropathy (serum creatinine), and a shift toward insulin therapy. QoL declined with DR severity due to compounding visual, cardiac, and psychological effects. Longer diabetes duration (>10 years) was linked to more severe DR, cardiac changes and renal dysfunction. These findings underscore the interconnected progression of DR and cardiac pathology in T2DM, highlighting the need for integrated screening and multidisciplinary care involving endocrinologists, cardiologists, and ophthalmologists to enhance clinical outcomes and preserve QoL.

Keywords: Cardiovascular risk, Diabetic retinopathy, Multidisciplinary care, Myocardial remodelling, Quality of life

[*]**Correspondence:** Sangeetha. T
sangeethat@sduaher.ac.in