**Risk Factor Analysis and Diagnostic Model Development for Diabetic Retinopathy in Patients with Type 2 Diabetes Mellitus**

**Background & Aim**

This study aimed to investigate the risk factors for DR in patients with T2DM and to develop a clinical diagnostic model.

**Methods**

Patients with T2DM admitted to Dianjiang County Hospital of Traditional Chinese Medicine/Affiliated Dianjiang Hospital of Chongqing University of Traditional Chinese Medicine between March 2023 and August 2024 were screened. Patients were categorized into the study group (n=42) if they had DR and the control group (n=77) if they did not. Clinical characteristics were compared between the two groups, and a logistic regression analysis was performed to develop the diagnostic model.

**Results**

The HbA1c, duration of T2DM, hypertension, and LDL-C in the study group and control group were (8.9±1.2)% vs (7.5±1.1)%, (11.3±3.5) years vs (8.2±3.1) years, 69.0% vs 42.9% and (3.2±0.8) mmol/L vs (2.7±0.7) mmol/L, all showing statistically significant differences (*P*<0.05). Multivariate logistic regression analysis revealed that HbA1c [*OR*=1.74 (95% *CI*, 1.28-2.36), *P*=0.01], duration of T2DM [*OR*=1.52 (95% *CI*, 1.18-1.95), *P*=0.02], hypertension [*OR*=2.35 (95% *CI*, 1.11-4.98), *P*=0.03], and LDL-C [*OR*=1.68 (95% *CI*, 1.21-2.35), *P*=0.01] were risk factors for DR in T2DM patients. The diagnostic model had an AUC of 0.82 (95% *CI*, 0.76-0.88), with a sensitivity of 78.5% and a specificity of 80.2%.

**Discussion/Conclusion**

HbA1c, duration of T2DM, hypertension, and LDL-C were identified as risk factors for DR in T2DM patients, and the diagnostic model contributed to improving diagnostic efficiency.