ABSTRACT

Title of Abstract : Factors Associated with Ischemic Heart Disease (IHD) among Type 2 Diabetes Mellitus Patients: Evidence from the National Diabetes Registry of Johor, Malaysia

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Background : IHD remains a leading cause of mortality among individuals with type 2 diabetes mellitus (T2DM). Despite the availability of extensive registry data, limited local evidence exists regarding factors associated with IHD among Malaysian diabetic populations.

Objective : This study aimed to identify demographic, clinical, and pharmacological associated factors of IHD using data from the National Diabetes Registry (NDR) of Johor, Malaysia.

Research Methods/ Implementation Methods : A cross-sectional analysis was conducted using NDR data from 11,082 adults with T2DM registered between 2019 and 2021. Sociodemographic, clinical, biochemical, and medication variables were analyzed. Univariable and multivariable logistic regression identified independent associated factors of IHD, expressed as adjusted odds ratios (aORs) with 95% confidence intervals (CIs).

Results : The prevalence of IHD among T2DM patients was 10.4% (95% CI=9.8, 11.0). Independent predictors of IHD included age ≥60 years (aOR = 1.57, 95% CI: 1.33–1.86), male sex (aOR = 1.46, 95% CI: 1.25–1.71), Chinese ethnicity (aOR = 1.60, 95% CI: 1.28–1.98), hypertension (aOR = 1.86, 95% CI: 1.38–2.51), dyslipidaemia (aOR = 1.47, 95% CI: 1.16–1.86), diabetes duration > 10 years (aOR = 1.35, 95% CI: 1.10–1.65), and diabetic retinopathy (aOR = 1.52, 95% CI: 1.28–1.79). Non-use of calcium channel blockers (aOR = 1.52, 95% CI: 1.32–1.76) increased IHD risk, while paradoxical inverse associations were noted for non-use of aspirin, ticlopidine, and beta-blockers, likely reflecting confounding by indication. Glitazone use showed a strong association with IHD (aOR = 10.46, 95% CI: 1.423, 76.960), possibly due to small sample bias.

Conclusion/Lesson Learned : IHD prevalence among Malaysian diabetics is substantial and driven by multiple modifiable and demographic factors. Integrating artificial intelligence (AI) predictive models within the NDR using these variables could enhance early risk stratification and targeted cardiovascular prevention.

Keyword : Type 2 Diabetes Mellitus, Ischemic Heart Disease, National Diabetic Registry.