ABSTRAK

Latar Belakang: Hipertensi dan dislipidemia merupakan komorbiditas kardiovaskular yang sering ditemukan pada pasien diabetes melitus tipe 2 (DMT2) dan berperan dalam proses aterosklerosis. Kombinasi hiperglikemia kronis dengan peningkatan tekanan darah dan kelainan profil lipid mempercepat disfungsi endotel serta instabilitas plak, sehingga meningkatkan risiko terjadinya sindrom koroner akut (SKA). Namun, bukti berbasis data populasi skala besar mengenai kontribusi independen kedua faktor tersebut terhadap insidensi SKA pada pasien DMT2 di Indonesia masih terbatas.

Tujuan: Menilai insidensi sindrom koroner akut pada pasien DMT2 serta menganalisis pengaruh hipertensi dan dislipidemia terhadap kejadian SKA menggunakan Big Data Academic Health System (AHS).

Metode: Penelitian ini merupakan studi kohort retrospektif menggunakan data sekunder dari database AHS RSUP Dr. Sardjito dan RSA UGM. Sebanyak 11.284 pasien DMT2 tanpa riwayat SKA pada baseline diikutsertakan dalam penelitian. Analisis regresi logistik multivariat dilakukan untuk menilai hubungan hipertensi dan dislipidemia terhadap kejadian SKA setelah dikontrol berdasarkan usia, jenis kelamin, dan kelas BPJS. Analisis Kaplan–Meier digunakan untuk mengevaluasi waktu terjadinya SKA.

Hasil: Selama periode observasi, 774 pasien (6,9%) mengalami episode pertama SKA dengan median waktu kejadian 190 hari. Usia ≥60 tahun (aOR 1,25; 95% CI 1,08–1,45; p=0,003), jenis kelamin laki-laki (aOR 2,16; 95% CI 1,85–2,53; p<0,001), hipertensi (aOR 1,27; 95% CI 1,10–1,49; p=0,002), serta BPJS kelas III (aOR 2,41; 95% CI 1,77–3,29; p<0,001) berhubungan signifikan dengan kejadian SKA. Dislipidemia tidak menunjukkan hubungan yang bermakna secara statistik setelah penyesuaian (aOR 1,34; 95% CI 0,98–1,83; p=0,063)

Kesimpulan: Insidensi SKA pada pasien DMT2 sebesar 6,9% dengan kejadian yang relatif dini selama masa observasi. Hipertensi merupakan faktor risiko independen yang signifikan terhadap kejadian SKA, sedangkan dislipidemia tidak menunjukkan hubungan independen setelah dikontrol variabel perancu. Evaluasi risiko kardiovaskular secara dini dan pengendalian tekanan darah yang optimal perlu menjadi prioritas dalam pencegahan komplikasi koroner pada pasien DMT2.

Kata kunci: Diabetes melitus tipe 2, sindrom koroner akut, hipertensi, dislipidemia, faktor risiko, Big Data.

ABSTRACT

Background: Hypertension and dyslipidemia are common cardiovascular comorbidities in patients with Type 2 Diabetes Mellitus (T2DM) and contribute to the development of atherosclerosis. The coexistence of chronic hyperglycemia with elevated blood pressure and lipid abnormalities accelerates endothelial dysfunction and plaque instability, increasing the risk of Acute Coronary Syndrome (ACS). However, large-scale population-based evidence regarding the independent contribution of these risk factors to ACS incidence among T2DM patients in Indonesia remains limited.

Objective: To estimate the incidence of Acute Coronary Syndrome among patients with T2DM and to analyze the independent effects of hypertension and dyslipidemia on the occurrence of ACS using Big Data from the Academic Health System (AHS).

Methods: This retrospective cohort study utilized secondary data from the AHS database of Dr. Sardjito General Hospital and UGM Academic Hospital. A total of 11,284 patients with T2DM without prior ACS at baseline were included. Multivariable logistic regression was performed to evaluate the association between hypertension, dyslipidemia, and ACS after adjustment for age, sex, and BPJS insurance class. Kaplan–Meier analysis was conducted to estimate time to ACS occurrence.

Results: During follow-up, 774 patients (6.9%) developed a first episode of ACS, with a median time to event of 190 days. Age ≥60 years (aOR 1.25; 95% CI 1.08–1.45; p=0.003), male sex (aOR 2.16; 95% CI 1.85–2.53; p<0.001), hypertension (aOR 1.27; 95% CI 1.10–1.49; p=0.002), and BPJS Class III (aOR 2.41; 95% CI 1.77–3.29; p<0.001) were significantly associated with ACS. Dyslipidemia did not show a statistically significant independent association after adjustment (aOR 1.34; 95% CI 0.98–1.83; p=0.063).

Conclusion: The incidence of ACS among patients with T2DM was 6.9%, with events occurring relatively early during follow-up. Hypertension was identified as a significant independent risk factor for ACS, while dyslipidemia was not independently associated after adjustment. Early cardiovascular risk assessment and optimal blood pressure control are essential strategies to reduce coronary complications in high-risk diabetic populations.

Keywords: Type 2 Diabetes Mellitus, Acute Coronary Syndrome, Hypertension, Dyslipidemia, Risk Factors, Big Data.