

INTISARI

HUBUNGAN WAKTU *DOOR TO FUROSEMIDE* DENGAN KEJADIAN KARDIOVASKULAR MAYOR PADA PASIEN GAGAL JANTUNG AKUT DI RUMAH SAKIT SARDJITO YOGYAKARTA

Barano, A.Z., Mumpuni, H., Hartopo, A.B.

Latar Belakang: Gagal jantung akut memerlukan tatalaksana untuk memperbaiki klinis dan menurunkan kejadian kardiovaskular mayor. Identifikasi waktu optimal *door to furosemide* dapat membantu menurunkan angka kejadian kardiovaskular mayor dan memperbaiki klinis.

Tujuan Penelitian: Mengetahui hubungan waktu *door to furosemide* dengan kejadian kardiovaskular mayor dan luaran urin 24 jam.

Metode Penelitian: Penelitian ini merupakan studi observasional analitik dengan desain kohort prospektif menggunakan data sekunder dari rekam medis. Penelitian dilakukan selama periode Februari 2025 – April 2025 pada pasien gagal jantung akut yang menjalani rawat inap di Rumah Sakit Sardjito Yogyakarta pada tahun 2024.

Hasil: Terdapat 166 subjek dengan jumlah laki-laki 108 (65%) dan perempuan 58 (35%), dan median usia 58 tahun (50-65). Angka kejadian kardiovaskular mayor yaitu 11 (19%). Nilai ambang DTF ≥ 46 tidak berkaitan secara statistik dengan kejadian kardiovaskular mayor (17 (60,7%) vs 11 (39,3%)) (RR 1,54, IK 95% 0,68-3,49, $p=0,214$). Dilakukan analisis bivariat dan multivariat terhadap data dasar dan variabel penelitian, didapatkan faktor yang secara independen berkaitan dengan kejadian kardiovaskular mayor yaitu CHAMPIT Infeksi (OR 8,816, IK 95% 1.135-68.465, $p=0,037$), eGFR < 15 mL/min/1,73 m² (OR 36,155, IK 95% 12.458-531.780, $p=0,009$), resistensi diuretik (OR 16,511, IK 95% 1.981-137.580, $p=0,010$), dan *shock* (OR 33,208, IK 95% 1.801-612.135, $p=0,018$). Nilai ambang DTF $\geq 52,5$ menit berkaitan secara signifikan tidak tercapainya luaran urin 24 jam (60 (46,5%) vs 69 (53,5%)) (RR 1,286, IK 95% 1,10-1,50, $p=0,005$). Dari analisis bivariat dan multivariat terhadap luaran target urin 24 jam, faktor DTF $\geq 52,5$ menit (OR 3,450, IK 95% 1,380 – 8,650, $p= 0,008$), eGFR $< 30-44$ mL/min/1,73 m² (OR = 2,830, IK 95% 1,070-7,500, $p = 0,036$), eGFR 15-29 mL/min/1,73 m² (OR = 5,950, IK 95% 2,090-16,910, $p = 0,001$), dan eGFR <15 mL/min/1,73 m² (OR = 6,890, IK 95% 2,030-23,420, $p = 0,002$) berkaitan secara independen dengan tidak tercapainya target luaran urin 24 jam.

Kesimpulan: Terdapat kecenderungan angka kejadian kardiovaskular mayor yang lebih tinggi pada ambang DTF ≥ 46 menit. Pada ambang DTF $\geq 52,5$ menit berkaitan dengan tidak tercapainya target luaran urin 24 jam.

Kata kunci: Gagal jantung akut, Waktu *door to furosemide*, Kejadian kardiovaskular mayor, Luaran urin 24 jam

ABSTRACT

RELATIONSHIP OF DOOR TO FUROSEMIDE WITH MAJOR CARDIOVASCULAR EVENT IN ACUTE HEART FAILURE PATIENTS AT SARDJITO HOSPITAL YOGYAKARTA

Barano, A.Z., Mumpuni, H., Hartopo, A.B.

Background: Acute heart failure requires immediate management to improve clinical condition and reduce major cardiovascular events. Identifying the optimal door-to-furosemide (DTF) time may help reduce major cardiovascular events and improve clinical outcomes.

Objective: To determine the association between door-to-furosemide time and major cardiovascular events as well as 24-hour urine output.

Method: This was an observational analytic study with a prospective cohort design using secondary data from medical records. The study was conducted from February 2025 to April 2025 on patients with acute heart failure who were hospitalized at Sardjito Hospital, Yogyakarta, in 2024.

Result: A total of 166 subjects were included, comprising 108 males (65%) and 58 females (35%), with a median age of 58 years (range 50–65). The incidence of major cardiovascular events was 11 cases (19%). A DTF threshold of ≥ 46 minutes was not statistically associated with major cardiovascular events (17 [60.7%] vs. 11 [39.3%]; RR 1.54, 95% CI 0.68–3.49, $p = 0.230$). Bivariate and multivariate analyses of baseline and research variables revealed independent factors associated with major cardiovascular events: CHAMPIT infection (OR 8.816, 95% CI 1.135–68.465, $p = 0.037$), eGFR < 15 mL/min/1,73 m² (OR 36.155, 95% CI 12.458–531.780, $p = 0.009$), diuretic resistance (OR 16.511, 95% CI 1.981–137.580, $p = 0.010$), and shock (OR 33.208, 95% CI 1.801–612.135, $p = 0.018$). A DTF threshold of ≥ 52.5 minutes was significantly associated with failure to achieve 24-hour urine output targets (60 [46,5%] vs. 69 [53,5%]; RR 1.286, 95% CI 1.10–1.50, $p = 0.005$). In bivariate and multivariate analyses of 24-hour urine output, independent factors associated with failure to reach target output included: DTF ≥ 52.5 minutes (OR 3.450, 95% CI 1.380–8.650, $p = 0.008$), eGFR 30–44 mL/min/1,73 m² (OR 2.830, 95% CI 1.070–7.500, $p = 0.036$), eGFR 15–29 mL/min/1,73 m² (OR 5.950, 95% CI 2.090–16.910, $p = 0.001$), and eGFR < 15 mL/min/1,73 m² (OR 6.890, 95% CI 2.030–23.420, $p = 0.002$).

Conclusion: There was a tendency toward a higher incidence of major cardiovascular events with a DTF threshold ≥ 46 minutes. A DTF ≥ 52.5 minutes was associated with failure to achieve the 24-hour urine output target.

Keywords: Acute heart failure, Door-to-furosemide time, Major adverse cardiovascular events, 24-hour urine output