# INTISARI

**Latar Belakang:** Hipertensi merupakan faktor risiko utama penyakit ginjal kronis (PGK) dan sering dijumpai pada pasien hemodialisis. Penggunaan obat antihipertensi penting untuk mengontrol tekanan darah, namun efektivitasnya dapat bervariasi tergantung jumlah dan jenis kombinasi obat yang digunakan. Di sisi lain, pasien PGK juga memiliki risiko tinggi mengalami *adverse drug reactions* (ADRs) akibat gangguan fungsi ginjal dan kompleksitas terapi.

**Tujuan:** Penelitian ini bertujuan untuk mengevaluasi efektivitas terapi antihipertensi dan insidensi ADRs pada pasien GGK yang menjalani hemodialisis rutin berdasarkan jumlah kombinasi obat antihipertensi (2 vs ≥3).

**Metode:** Penelitian ini merupakan kohort retrospektif dengan data primer dari wawancara pasien menggunakan kuesioner (PERSYVE dan LCAT) dan data sekunder dari rekam medis pasien hemodialisis rutin di RS Akademik UGM (Mei 2024 – Mei 2025). Subjek adalah pasien ginjal kronis stadium 5 dengan hipertensi yang menerima ≥2 obat antihipertensi. Efektivitas terapi dievaluasi berdasarkan pencapaian target tekanan darah <140/90 mmHg, sedangkan ADR dinilai dengan *Liverpool Adverse Drug Reaction Causality Assesment Tool* (LCAT) dan skala keparahan Hartwig. Analisis menggunakan uji t/Wilcoxon, Chi-square/Fisher, serta regresi logistik biner.

**Hasil:** Pencapaian target tekanan darah lebih tinggi pada kelompok kombinasi ≥3 obat (35,3%) dibandingkan 2 obat (22,2%) meskipun hubungan tersebut tidak signifikan (p = 0,268). Kelompok ≥3 obat menunjukkan penurunan sistolik (Δ = 3,01 mmHg; p = 0,036) dan diastolik (Δ = 2,53 mmHg; p = 0,014) signifikan secara intrakelompok, sedangkan antar kelompok tidak berbeda bermakna. Kejadian ADR lebih banyak ditemukan pada kelompok ≥3 obat (25,8%) dibanding 2 obat (7,4%), dengan kecenderungan risiko lebih tinggi (AOR=3,962), meski tidak signifikan secara statistik. Sebagian besar ADR bersifat ringan, meliputi edema (20%) dan kantuk (20%).

**Kesimpulan:** Kombinasi ≥3 obat antihipertensi terbukti menurunkan tekanan darah sistolik dan diastolik secara signifikan dalam kelompok, namun tidak lebih unggul dibandingkan kombinasi 2 obat dalam pencapaian target <140/90 mmHg. Penggunaan kombinasi ≥3 obat juga cenderung meningkatkan risiko ADR, meskipun tidak signifikan secara statistik.

**Kata kunci**: hipertensi, gagal ginjal kronis, hemodialisis, antihipertensi, efektivitas, *adverse drug reactions*

# ABSTRACT

**Background:** Hypertension is a major risk factor for chronic kidney disease (CKD) and is highly prevalent among patients undergoing hemodialysis. Antihypertensive therapy plays a critical role in blood pressure (BP) control, yet its effectiveness may vary depending on the number and type of drug combinations. Patients with CKD are also at increased risk of adverse drug reactions (ADRs) due to impaired renal function and complex pharmacotherapy.

**Objective:** This study aims to evaluate the effectiveness of antihypertensive therapy and the incidence of ADRs in CKD patients undergoing routine hemodialysis based on different combinations of antihypertensive medications.

**Methods:** A retrospective cohort study was conducted using primary data from patient interviews (PERSYVE questionnaire and LCAT) and secondary data from medical records of routine hemodialysis patients at Universitas Gadjah Mada Academic Hospital (May 2024–May 2025). Subjects included stage 5 CKD patients with hypertension receiving ≥2 antihypertensive drugs. Treatment effectiveness was assessed by achieving blood pressure targets <140/90 mmHg, while ADRs were evaluated using the Liverpool Adverse Drug Reaction Causality Assesment Tool (LCAT) and Hartwig's severity scale. Data were analyzed using t-test/Wilcoxon, Chi-square/Fisher, and binary logistic regression.

**Results:** The achievement of target blood pressure was higher in the ≥3 drug group (35.3%) compared to the 2-drug group (22.2%), althought the association was not statistically significant (p=0.268). The ≥3-drug group showed significant intragroup reductions in systolic (Δ=3.01 mmHg; p=0.036) and diastolic blood pressure (Δ=2.53 mmHg; p=0.014), while intergroup comparisons were not significant. ADRs were more frequent in the ≥3-drug group (25.8%) than in the 2-drug group (7.4%), with a higher tendency of risk (AOR=3.962), although not statistically significant. Most ADRs were mild, predominantly edema (20%) and drowsiness (20%).

**Conclusion:** The combination of ≥3 antihypertensive agents was found to significantly reduce both systolic and diastolic blood pressure within the group; however, it was not superior to dual therapy in achieving the target of <140/90 mmHg. Moreover, the use of ≥3 agents tended to increase the risk of adverse drug reactions (ADRs), although this was not statistically significant.

Keywords: hypertension, chronic kidney disease, hemodialysis, antihypertensive, effectiveness, adverse drug reactions.