

## INTISARI

**Latar Belakang.** Omeprazole merupakan obat Proton Pump Inhibitor (PPI) yang paling banyak digunakan di dunia, namun beberapa penelitian melaporkan adanya peningkatan tekanan darah sebagai efek sampingnya. Pantoprazole, yang dikenal memiliki profil keamanan terbaik dan menjadi terapi pilihan di beberapa negara, dipilih sebagai pembanding. Penelitian ini bertujuan mengamati perbedaan peningkatan tekanan darah antara omeprazole dan pantoprazole pada pasien *Peptic Ulcer Disease* (PUD).

**Metode.** Desain penelitian adalah observasional kohort retrospektif berbasis rekam medis Rumah Sakit Akademik UGM periode 2021–2024. Variabel bebas adalah jenis terapi PPI dengan 40 pasien kelompok omeprazole dan 40 pasien kelompok pantoprazole dalam 2 hari pengamatan, sedangkan variabel terikat adalah peningkatan tekanan darah. Kriteria inklusi meliputi pasien dewasa ( $\geq 18$  tahun) dengan diagnosis PUD sebagai diagnosis utama dan diagnosis sekunder, mendapatkan omeprazole atau pantoprazole, dan tekanan darah admisi  $< 120/80$  mmHg. Pasien dengan penyakit kardiovaskular, konsumsi obat kardiovaskular, dan wanita hamil dieksklusi. Homogenitas karakteristik dasar dianalisis dengan Chi-Square atau Fisher exact test, sedangkan delta tekanan darah dianalisis menggunakan Independent Sample T-Test atau Mann Whitney Test.

**Hasil.** Terdapat perbedaan signifikan secara statistik pada peningkatan tekanan darah sistolik puncak antara kelompok omeprazole dan pantoprazole ( $21,95 \pm 11,70$  mmHg vs  $7,70 \pm 11,36$  mmHg;  $p < 0,001$ ), begitu pula diastolik puncak ( $12,78 \pm 13,20$  mmHg vs  $3,75 \pm 8,98$  mmHg;  $p < 0,001$ ). Delta sistolik dan diastolik pada pengukuran pagi, siang, dan malam hari ke-1 hingga ke-2 secara konsisten signifikan ( $p < 0,05$ ). Analisis multivariat mengonfirmasi bahwa jenis terapi PPI secara independen memengaruhi peningkatan tekanan darah sistolik ( $p = 0,001$ ) dan diastolik ( $p = 0,001$ ), tanpa kontribusi signifikan dari variabel perancu seperti usia, jenis kelamin, BMI, status nyeri, komorbiditas, maupun interaksi obat.

**Kesimpulan.** Omeprazole dikaitkan dengan peningkatan tekanan darah yang lebih tinggi secara signifikan dibandingkan pantoprazole pada pasien PUD, meskipun besaran peningkatannya masih berada dalam rentang tekanan darah normal.

**Kata kunci:** *Proton Pump Inhibitor*, Omeprazole, Peningkatan Tekanan Darah, Efek Samping Obat.

## ABSTRACT

**Background.** Omeprazole is the most widely used Proton Pump Inhibitor (PPI) worldwide, yet some studies report increased blood pressure as a side effect. Pantoprazole, known for its best safety profile and preferred therapy in some countries, was selected as the comparator. This study aimed to observe differences in blood pressure elevation between omeprazole and pantoprazole in Peptic Ulcer Disease (PUD) patients.

**Methods.** This was a retrospective observational cohort study based on medical records from the UGM Academic Hospital, 2021–2024. The independent variable was PPI therapy type, with 40 patients in the omeprazole group and 40 in the pantoprazole group in two days observation; the dependent variable was blood pressure increase. Inclusion criteria included adult patients ( $\geq 18$  years) diagnosed with PUD as a primary diagnosis and secondary diagnosis, receiving omeprazole or pantoprazole, and admission blood pressure  $< 120/80$  mmHg. Patients with cardiovascular disease, cardiovascular medication use, and pregnant women were excluded. Baseline characteristic homogeneity was analyzed using Chi-Square or Fisher exact test, while blood pressure delta was analyzed using Independent Sample T-Test or Mann Whitney Test.

**Results.** There was a statistically significant difference in peak systolic blood pressure increase between the omeprazole and pantoprazole groups ( $21.95 \pm 11.70$  mmHg vs  $7.70 \pm 11.36$  mmHg;  $p < 0.001$ ), as well as peak diastolic ( $12.78 \pm 13.20$  mmHg vs  $3.75 \pm 8.98$  mmHg;  $p < 0.001$ ). Delta systolic and diastolic measurements in the morning, afternoon, and evening from day 1 to day 2 were consistently significant ( $p < 0.05$ ). Multivariate analysis confirmed that PPI therapy type independently influenced systolic ( $p = 0.001$ ) and diastolic ( $p = 0.001$ ) blood pressure increases, without significant contributions from confounders such as age, gender, BMI, pain status, comorbidities, or drug interactions.

**Conclusion.** Omeprazole was associated with a significantly higher blood pressure increase compared to pantoprazole in PUD patients, although the magnitude remained within the normal blood pressure range.

**Keywords:** Proton Pump Inhibitor, Omeprazole, Hypertension, Adverse Drug Reaction