

ABSTRAK

Latar Belakang: Hipertensi, sering disebut "*the silent killer*", adalah penyebab utama gagal ginjal di Indonesia karena kerusakan pembuluh darah ginjal akibat tekanan darah tinggi. Kondisi ini mengganggu fungsi ginjal, mengurangi kemampuan ekskresi zat sisa seperti ureum dan kreatinin. Beberapa bahan alami seperti bawang putih (*Allium sativum*), temu ireng (*Curcuma aeruginosae*), dan kapulaga (*Amomum compactum*) diketahui dapat menurunkan tekanan darah pada penderita hipertensi. Namun, aktivitas antihipertensi dari kombinasi bahan herbal ini pada model tikus hipertensi belum diteliti. Penelitian ini bertujuan untuk mengevaluasi pengaruh poliheerbal tersebut terhadap kadar ureum dan kreatinin pada tikus Wistar model hipertensi sebagai bagian dari uji preklinik pengembangan terapi.

Tujuan: Penelitian ini bertujuan untuk mengetahui pengaruh pemberian Poliheerbal antihipertensi terhadap Kadar Ureum dan Kreatinin darah model tikus hipertensi dibandingkan dengan kelompok kontrol tanpa terapi

Metode: Penelitian ini adalah studi quasi-eksperimental dengan 36 tikus Wistar yang dibagi menjadi 6 kelompok: kontrol hewan, kontrol negatif, kontrol positif, dan 3 kelompok perlakuan. Kelompok kontrol hewan normal, sedangkan kelompok lainnya diinduksi hipertensi melalui uninefrectomi. Kontrol negatif tidak diberi terapi, kontrol positif diberi Captopril (13,5 mg/kgBB), dan tiga kelompok perlakuan diberi poliheerbal dengan dosis 63, 126, dan 252 mg/kgBB. Terapi poliheerbal diberikan dua kali sehari selama 6 minggu, bersama pemberian DOCA dua kali seminggu untuk mempertahankan hipertensi. Kadar ureum dan kreatinin diukur sebelum dan sesudah penelitian dan data dianalisis dengan uji *Wilcoxon Signed-Rank* dan *Kruskal-Wallis* ($\alpha=0,05$).

Hasil: Pada 36 tikus yang dibagi menjadi 6 kelompok, kadar ureum dan kreatinin menunjukkan penurunan di semua kelompok. Meskipun begitu, hanya kelompok kontrol positif dan kelompok yang diberikan poliheerbal dosis 126 mg/kg yang menunjukkan penurunan kadar ureum dan kreatinin yang signifikan. Sementara itu, kelompok lain, meskipun ada penurunan, tidak mencapai tingkat yang signifikan. Ini menunjukkan bahwa pemberian poliheerbal dengan dosis tertentu dapat berpengaruh lebih kuat dalam menurunkan kadar ureum dan kreatinin pada tikus model hipertensi.

Kesimpulan: Berdasarkan hasil penelitian, dapat disimpulkan bahwa pemberian sediaan poliheerbal antihipertensi yang mengandung *A. sativum*, *C. aeruginosa*, dan *A. compactum* pada kelompok kontrol positif dan kelompok poliheerbal dosis 126 mg/kg menunjukkan pengaruh signifikan terhadap penurunan kadar ureum dan kreatinin pada tikus model hipertensi.

Kata Kunci: *Allium sativum*, *Curcuma aeruginosa*, *Amomum compactum*, antihipertensi, ureum, kreatinin.

ABSTRACT

Background: Hypertension, often referred to as "the silent killer," is a leading cause of kidney failure in Indonesia due to damage to kidney blood vessels caused by high blood pressure. This condition impairs kidney function, reducing the ability to excrete waste products like urea and creatinine. Some natural ingredients such as garlic (*Allium sativum*), black turmeric (*Curcuma aeruginosa*), and cardamom (*Amomum compactum*) are known to lower blood pressure in hypertensive patients. However, the antihypertensive activity of the combination of these herbs in a hypertensive rat model has not been studied. This research aims to evaluate the effects of this polyherbal formulation on urea and creatinine levels in hypertensive Wistar rats as part of a preclinical study for therapy development.

Objective: The aim of this study is to determine the effect of administering antihypertensive polyherbal preparation on blood urea and creatinine levels in a hypertension rat model compared to the control group without therapy.

Methods: This study is a quasi-experimental study involving 36 Wistar rats, divided into 6 groups: a normal control group, a negative control group, a positive control group, and 3 treatment groups. The normal control group received no induction, while the other groups were induced with hypertension through uninephrectomy. The negative control group received no therapy, the positive control group was given Captopril (13.5 mg/kg body weight), and the three treatment groups were administered polyherbal preparations at doses of 63, 126, and 252 mg/kg body weight. The polyherbal therapy was given twice a day for 6 weeks, along with DOCA administration twice a week to maintain hypertension. Blood urea and creatinine levels were measured before and after the study, and the data were analyzed using the Wilcoxon Signed-Rank test and Kruskal-Wallis test ($\alpha=0.05$).

Results: Among the 36 rats divided into 6 groups, urea and creatinine levels showed a decreasing trend across all groups. However, only the positive control group and the group receiving polyherbal at a dose of 126 mg/kg showed significant reductions in urea and creatinine levels. Other groups, while showing a decrease, did not reach statistically significant levels. This indicates that polyherbal administration at a specific dose has a more substantial effect on lowering urea and creatinine levels in hypertensive rats.

Conclusion: Based on the results, it can be concluded that the administration of polyherbal antihypertensive containing *A. sativum*, *C. aeruginosa*, and *A. compactum* in the positive control group and the 126 mg/kg polyherbal dose group showed a significant effect in reducing urea and creatinine levels in hypertensive rats.

Keywords: *Allium sativum*, *Curcuma aeruginosa*, *Amomum compactum*, antihypertensive, ureum, creatinine.