ABSTRAK

Latar Belakang: Dislipidemia merupakan faktor risiko terjadinya penyakit kardiovaskular dan gangguan ginjal melalui mekanisme aterosklerosis dan stres oksidatif. Bawang putih tunggal *(Allium sativum L.)* memiliki kandungan allicin, flavonoid, dan senyawa organosulfur yang bersifat antioksidan dan nefroprotektif. Penelitian ini untuk mengetahui efektivitas ekstrak bawang putih tunggal terhadap gambaran histopatologi ginjal, kadar ureum, kreatinin, dan asam urat pada tikus Wistar *(Rattus norvegicus)* yang mengalami dislipidemia**.** Penelitian ini bertujuan untuk mengetahui efektivitas ekstrak bawang putih tunggal *(Allium sativum L.)* terhadap gambaran histopatologi ginjal serta kadar ureum, kreatinin, dan asam urat pada tikus putih *(Rattus norvegicus)* yang diinduksi dislipidemia. **Metode penelitian** eksperimental dengan rancangan *pre* dan *post-test control group design*. Sebanyak 24 ekor tikus jantan Wistar dibagi menjadi empat kelompok: kontrol negatif (aquades), kontrol positif (simvastatin 2,1 mg/kgBB), perlakuan ekstrak bawang putih tunggal dosis 200 mg/kgBB, dan dosis 400 mg/kgBB. Semua kelompok diinduksi dengan pakan tinggi lemak selama 28 hari. Parameter yang diamati meliputi kadar ureum, kreatinin, asam urat, serta gambaran histopatologi ginjal dengan pewarnaan *Hematoxylin-Eosin*. **Hasil penelitian** menunjukkan pemberian ekstrak bawang putih tunggal dosis 200 mg/kgBB dan 400 mg/kgBB menurunkan kadar ureum, kreatinin, dan asam urat secara signifikan ($p<0,05$) dibandingkan kontrol negatif. Perbaikan histopatologi ginjal ditandai dengan penurunan kerusakan sel, kongesti, dan nekrosis. Efek pemberian ekstrak bawang putih dosis 400 mg/kgBB sebanding dengan kontrol positif.**Kesimpulan**: Ekstrak bawang putih tunggal efektif menurunkan kadar ureum, kreatinin, asam urat, serta memperbaiki gambaran histopatologi ginjal pada tikus dislipidemia. Dosis 400 mg/kgBB memberikan efek paling optimal dan berpotensi digunakan sebagai terapi alternatif nefroprotektif.

Kata Kunci: Bawang putih tunggal, histopatologi ginjal, ureum, kreatinin, asam urat, dislipidemia.

ABSTRACT

Background: Dyslipidemia is a risk factor for cardiovascular disease and kidney disorders through the mechanisms of atherosclerosis and oxidative stress. Single garlic *(Allium sativum L.)* is known to contain allicin, flavonoids, and organosulfur compounds that have antioxidant and nephroprotective properties. This study aims to determine the effectiveness of single garlic extract on kidney histopathology, urea, creatinine, and uric acid levels in Wistar rats *(Rattus norvegicus)* with dyslipidemia. **Methods:** This study was a pure experimental study with a pre-test and post-test control group design. A total of 24 male Wistar rats were divided into four groups: negative control (aquadest), positive control (simvastatin 2.1 mg/kgBW), single garlic extract treatment at a dose of 200 mg/kgBW, and a dose of 400 mg/kgBW. All groups were induced with a high-fat diet for 28 days. The parameters observed included urea, creatinine, uric acid levels, and kidney histopathology with Hematoxylin-Eosin staining. **Results:** The study showed that administration of single garlic extract at dos of 200 mg/kgBW and 400 mg/kgBW significantly reduced urea, creatinine, and uric acid levels ($p<0.05$) compared to the negative control. Improvement in kidney histopathology was characterized by reduced cell damage, congestion, and necrosis. The effect of administration of garlic extract at a dose of 400 mg/kgBW was comparable to that of the positive control. **Conclusion:** Single garlic extract was effective in reducing urea, creatinine, and uric acid levels, as well as improving kidney histopathology in dyslipidemic rats. The 400 mg/kgBW dose provided the most optimal effect and has the potential to be used as an alternative nephroprotective therapy.

Keywords: Single garlic, kidney histopathology, urea, creatinine, uric acid, dyslipidemia.