

ABSTRAK

Penelitian ini bertujuan untuk menguji dan menganalisis efektivitas pemberian ekstrak cengkeh (*Syzygium aromaticum*) terhadap fungsi ginjal tikus putih (*Rattus norvegicus*) jantan galur wistar yang diinfeksi *Staphylococcus aureus* dan bagaimana gambaran histopatologinya. Sampel penelitian, yaitu 24 ekor tikus (*Rattus norvegicus*) jantan galur wistar yang diperoleh melalui perhitungan rumus Ferderer untuk 4 kelompok. Masing-masing kelompok terdiri dari 6 ekor tikus yang diberi perlakuan berbeda. Kelompok pertama sebagai kelompok kontrol, pada kelompok ini tikus tidak diberi infeksi bakteri dan hanya diberi aquades. Kelompok perlakuan diberi infeksi dengan suspensi bakteri *Staphylococcus aureus* dan ekstrak cengkeh (*Syzygium aromaticum*) dengan dosis berbeda yaitu 150mg/KgBB, 350mg/KgBB, dan 450mg/KgBB. Hasil pengamatan menunjukkan bahwa ekstrak cengkeh mengandung metabolit sekunder berupa saponin, tannin, flavonoid, dan steroid yang membantu memperbaiki sel ginjal yang mengalami kerusakan dan penurunan fungsi ginjal akibat infeksi bakteri *Staphylococcus aureus*. Senyawa aktif yang paling berperan dalam perbaikan fungsi ginjal yaitu flavonoid. Pemberian ekstrak cengkeh dengan dosis 450mg/KgBB efektif dalam meningkatkan fungsi ginjal pada tikus putih (*Rattus norvegicus*) galur wistar yang diinfeksi *Staphylococcus aureus*. Perbaikan ini dapat dilihat melalui kadar ureum, kreatinin, dan struktur histologis ginjal yang mengalami perbaikan. Hasil pengamatan histopatologi jaringan ginjal pada kelompok perlakuan 3 yaitu ekstrak cengkeh dengan dosis 450mg/KgBB mengalami perbaikan paling signifikan dan mendekati kelompok kontrol dibanding kelompok lainnya.

Kata Kunci: Infeksi, *Staphylococcus aureus*, Ginjal, Cengkeh

ABSTRACT

*This study aims to analyze and test the effectiveness of administering moringa flower extract (*Moringa oleifera*) in reducing cholesterol levels and improving testicular function in male Wistar rats (*Rattus norvegicus*) who are obese and how the histopathology of rat testicles (*Rattus norvegicus*) looks like. The research sample was 24 male Wistar rats (*Rattus norvegicus*) obtained by calculating the Ferderer formula for 4 groups. Each group consisted of 6 mice that were given different treatments. The control/normal group was given regular food and distilled water, while the treatment group was made obese and given *Moringa oleifera* flower extract at different doses, namely 200mg/KgBB, 400mg/KgBB, and 600mg/KgBB. To induce obesity in test animals, mice were fed a high-fat diet every day in the form of quail egg yolks for 14 days. These foods exogenously increase cholesterol levels and give rise to obesity. The parameter used to confirm that mice are obese is by calculating the Lee index value. After 14 days of a high-fat diet, the mice were calculated for the Lee Index value and obtained a value of >0.30 , which means the mice were obese. The results of the observations showed that *Moringa oleifera* flower extract at a dose of 400mg/KgBW and 600mg/KgBW was effective in reducing total cholesterol levels in obese white Wistar rats. This is evident from the cholesterol levels in both groups which were less than 54mg/dl. The results of histopathological observations of testicular tissue in treatment group 3, namely *Moringa oleifera* flower extract at a dose of 600 mg/KgBW, experienced the most significant improvement and were closer to the control group compared to the other groups. Reducing total cholesterol levels and improving the function of testicles damaged due to obesity occurs due to the help of the phytochemical compounds contained in *Moringa* flower extract. Based on the results of phytochemical tests, it was found that *Moringa* flower extract contains compounds in the form of flavonoids, tannin saponin alkaloids, and steroids which help reduce total cholesterol levels and improve testicular function.*

Keywords: Obesity, Cholesterol, Testes, Moringa Flowers