

ABSTRAK

Pendahuluan: Ada beberapa faktor yang dapat menyebabkan kerusakan ginjal, salah satunya adalah obesitas. Obesitas sendiri dapat menyebabkan gangguan metabolisme kompleks yang dapat mempengaruhi fisiologi ginjal. Aktivitas biologis komponen flavonoid pada *A. compactum* menunjukkan bahwa ekstrak kapulaga memiliki aktivitas antiinflamasi dan antioksidan yang tinggi.

Metode: Penelitian ini merupakan true eksperimental dengan post test only of control group design dan dilaksanakan pada bulan Juli sampai Agustus 2022 di Pusat Studi Pangan dan Gizi (PSPG), Universitas Gadjah Mada. Jumlah tikus Wistar yang digunakan dalam penelitian ini sebanyak 30 ekor yang secara acak dibagi menjadi kelompok kontrol normal, kontrol negatif, kapulaga dosis 45 mg, kapulaga dosis 90 mg, kapulaga dosis 180 mg. Obesitas diperoleh dengan diet tinggi lemak dan tinggi karbohidrat. Pada akhir penelitian, tikus diterminasi dan dilakukan pemeriksaan ureum, kreatinin, perubahan histopatologi ginjal menggunakan hematoxylin dan eosin stain.

Hasil: Terdapat perbedaan kadar ureum antara kelompok K dan P1, P2, P3; P1 dan P2, P1 dan P3, dan P2 dan P3 ($p < 0,005$). Terdapat perbedaan kadar kreatinin antara kelompok K dan P1, P2, P3; P1 dan P2, dan P1 dan P3 ($p < 0,005$). Terdapat perbedaan yang bermakna pada histologi ginjal antara kelompok kontrol normal, kontrol negatif, dan P1 ($p < 0,001$).

Kesimpulan: Ekstrak biji kapulaga efektif menurunkan kadar ureum kreatinin dan memperbaiki histopatologi ginjal tikus obesitas.

Kata Kunci: Histologi Ginjal; Kapulaga; Kreatinin; Kegemukan; Urea

ABSTRACT

Background: There are several factors that can cause kidney damage, one of which is obesity. Obesity itself can cause complex metabolic disorders that can affect kidney physiology. The biological activity of flavonoid components in *A. compactum* showed that cardamom extract had high anti-inflammatory and antioxidant activity.

Methods: This study was a true experimental with post tests only of control group design and was conducted from July to August 2022 at Pusat Study Pangan dan Gizi (PSPG), Gadjah Mada University. A total of 30 Wistar rats were used in this study and which randomly divided into normal control, negative control, 45 mg dose cardamom, 90 mg dose cardamom, 180 mg dose cardamom groups. Obesity was obtained by high fat and high carbo diet. At the end of the study, the rats will be terminated and urea, creatinine was examined, renal histopathology changes were observed using hematoxylin and eosin stain.

Results: There was differences in urea levels between groups K and P1, P2, P3; P1 and P2, P1 and P3, and P2 and P3 ($p < 0.005$). There was differences in creatinine levels between groups K and P1, P2, P3; P1 and P2, and P1 and P3 ($p < 0.005$). There was a significant difference in renal histology between groups normal control, negative control, and P1 ($p < 0.001$).

Conclusion: Cardamom seed extract is effective in reducing urea creatinine levels and improving histopathology obese rat kidney.

Keyword: Cardamom; Urea; Creatinine; Obesity; Renal Histologi