ABSTRACT

EFFECT RENOPROTECTIVE IN TURMERIC EXTRACT (*Curcuma domestica Val*.) TOWARDS SPRAGUE DAWLEY RATS (*Rattus norvegicus*) INDUCED BY MEFENAMIC ACID

By

LUCKY IKRAM ALFATHANY

Background: Mefenamic acid is an NSAID often prescribed because of its wide therapeutic applications and its accessibility by the public. Mefenamic acid can also induce damage to the kidneys. Turmeric can provide a renoprotective effect because it contains curcumin which is a phenolic compound. This study was conducted to determine the renoprotective effect of turmeric extract on white rats induced with mefenamic acid.
Method: This study used an experimental method with a post-test only control group design, using primary data from measuring renal histopathological scores. Measurement of renal histopathology scores used The EGTI Histology Scoring System. The sample of this study was 20 male white rats which were divided into 5 groups. The negative control group was given standard food and drink, the positive control group was induced by mefenamic acid at a dose of 25 mg/KgBW 3 times a day for 14 days, the treatment groups (P1, P2, P3) were induced with mefenamic acid at a dose of 25 mg/KgBW 3 times a day and given turmeric extract with doses of 12.5, 25, and 50 mg for 14 days. The data was analyzed using the *Kruskal-Wallis* test.
Result: The mean histopathological scores of the rat kidneys were K- =0.44; K+ =0.93; P1=0.5; P2=0.25; P3=0.93. Data analysis of the *Kruskal-Wallis* test obtained $p = 0.014$. This was followed by the *Mann-Whitney* test which showed a significant difference between groups K+ with P2, P1 with P2 and P3, and P2 with P3($p<0.05$).
Conclusion: There was a renoprotective effect of the turmeric extract (*Curcuma domestica Val*.) on the renal histopathological features of the Sprague Dawley rat (*Rattus norvegicus*) strain induced with mefenamic acid.

Keyword: *Curcumin, Mefenamic acid, NSAID, Renoprotective, Turmeric*

ABSTRAK

EFEK RENOPROTEKTIF EKSTRAK KUNYIT (*Curcuma domestica Val.*) TERHADAP TIKUS PUTIH (*Rattus norvegicus*) GALUR SPRAGUE DAWLEY YANG DIINDUKSI ASAM MEFENAMAT

Oleh

LUCKY IKRAM ALFATHANY

Latar Belakang: Asam mefenamat merupakan obat anti inflamasi non steroid (NSAID) yang sering diresepkan oleh dokter karena aplikasi terapeutiknya yang luas dan mudah diakses oleh masyarakat. Asam mefenamat dapat menyebabkan kerusakan ginjal. Kunyit dapat memberikan efek renoprotektif karena mengandung kurkumin yang merupakan senyawa fenolik. Penelitian ini dilakukan untuk mengetahui efek renoprotektif ekstrak kunyit pada tikus putih yang diinduksi asam mefenamat.
Metode: Penelitian ini menggunakan metode penelitian eksperimental dengan desain *post-test only control group design*, menggunakan data primer dengan mengukur skor histopatologi ginjal. Pengukuran skor histopatologi ginjal menggunakan *The EGTI Histology Scoring System*. Sampel dalam penelitian ini yaitu 20 ekor tikus. Kelompok kontrol negatif diberikan makanan dan minuman standar, kelompok kontrol positif diinduksi asam mefenamat dengan dosis 25 mg/KgBB 3 kali sehari selama 14 hari, kelompok perlakuan (P1, P2, P3) diinduksi dengan mefenamat. asam dengan dosis 25 mg/KgBB 3 kali sehari dan diberikan ekstrak kunyit dengan dosis 12,5, 25, dan 50 mg selama 14 hari. Kemudian data tersebut dianalisis menggunakan *Kruskal-Wallis*.
Hasil: Rerata skor histopatologi ginjal tikus adalah K- =0,44; K+ =0,93; P1=0,5; P2=0,25; P3=0,93. Analisis data menggunakan uji *Kruskal-Wallis* didapatkan p = 0,014. Dilanjutkan dengan uji *Mann-Whitney* menunjukkan perbedaan signifikan antara kelompok K+ dengan P2, P1 dengan P2 dan P3, P2 dengan P3 (p<0,05).
Kesimpulan: Terdapat efek renoprotektif ekstrak kunyit (*Curcuma domestica Val.*) terhadap gambaran histopatologi ginjal tikus putih (*Rattus norvegicus*) galur Sprague Dawley yang diinduksi asam mefenamat.

Kata Kunci: *Asam mefenamat, Kunyit, Kurkumin, NSAID, Renoprotektif*