

ABSTRAK

Nyeri merupakan pengalaman sensoris dan emosional yang berhubungan langsung dengan kerusakan jaringan tubuh. Nyeri sering diatasi dengan *non-steroid anti-inflammatory drug* (NSAID), salah satunya adalah piroxicam, namun obat ini dapat menimbulkan efek samping berupa inflamasi pada gaster. Kunyit merupakan salah satu contoh rempah-rempah asli Indonesia yang sering digunakan sebagai anti nyeri, anti inflamasi, dan lain-lain.

Penelitian ini bertujuan untuk mengetahui perbedaan derajat inflamasi pada gaster mencit yang dipejani piroxicam (p.o), minyak atsiri (p.o), kurkuminoid kunyit (p.o), serta kombinasi minyak atsiri dan kurkuminoid (p.o) selama 20 hari.

Desain penelitian yang digunakan adalah eksperimental *posttest only control design*. Dua puluh empat mencit galur BALB/c (30 ± 5 gr) usia 2 bulan dibagi menjadi enam kelompok, yaitu kelompok kontrol normal, kontrol CMC-Na 5%, piroxicam (52 mg/KgBB), kurkuminoid (48 mg/kgBB), minyak atsiri (24 mg/kgBB), kombinasi kurkuminoid dan minyak atsiri. Semua perlakuan diberikan satu kali setiap hari selama 20 hari secara oral sebelum induksi dengan formalin. Pada hari ke-20, formalin 1% sebanyak 20 μ l diinjeksikan secara *intraplantar* kepada masing-masing mencit. 25 menit setelah induksi formalin, mencit dikorbankan untuk diambil organ gasternya untuk dibuat sediaan histologis. Data derajat kerusakan gaster dinilai dengan cara melihat tingkat derajat inflamasi.

Uji perbedaan antar kelompok perlakuan dilakukan dengan analisis *Kruskal-Wallis* yang membandingkan median masing-masing kelompok. Setelah itu, untuk melihat perbedaan diantara kelompok tertentu, digunakan tes *Pairwise Comparison*. Pada analisis, didapatkan perbedaan signifikan antara kelompok kombinasi kurkuminoid dan minyak atsiri jika dibandingkan dengan kelompok piroxicam $p=0.019$ ($p<0.05$). Selain itu, didapatkan hasil signifikan antara kelompok CMC-Na jika dibandingkan dengan kelompok piroxicam $p=0.007$. Yang terakhir, terdapat perbedaan signifikan pada kelompok normal yang dibandingkan dengan kelompok piroxicam $p=0.027$. Selain itu, tidak terdapat perbedaan yang signifikan antar kelompok.

Kesimpulan dari penelitian ini adalah kombinasi kurkuminoid dan minyak atsiri kunyit tidak menimbulkan inflamasi yang dilihat dari minimnya infiltrasi sel radang.

Kata Kunci: Kunyit, Nyeri, Histologi, Kerusakan, Gaster, Piroxicam

ABSTRACT

Pain is a sensory and emotional experience directly related to tissue damage. Pain is often treated with non-steroidal anti-inflammatory drugs (NSAIDs), one of which is piroxicam. However, this drug can cause side effects such as inflammation in the stomach. Turmeric is one example of an indigenous Indonesian spice commonly used as an analgesic, anti-inflammatory, and more.

This study aims to determine the difference in the degree of inflammation in the stomach of mice treated with piroxicam (oral), essential oil (oral), turmeric curcuminoids (oral), and a combination of essential oil and curcuminoids (oral) for 20 days. The research design used is a posttest-only control design. Twenty-four BALB/c mice (30 ± 5 grams) aged 2 months were divided into six groups: normal control, CMC-Na 5% control, piroxicam (52 mg/Kg body weight), curcuminoids (48 mg/Kg body weight), essential oil (24 mg/Kg body weight), and a combination of curcuminoids and essential oil. All treatments were administered once daily for 20 days orally before induction with formalin.

On day 20, 20 μ l of 1% formalin was injected intraplantarly into each mouse. Twenty-five minutes after formalin induction, the mice were sacrificed to collect their stomach organs for histological preparations. The degree of gastric damage was assessed by observing the level of inflammation. Differences between treatment groups were analyzed using the Kruskal-Wallis test, comparing the median of each group. After that, to observe differences between specific groups, Pairwise Comparison tests were used. The analysis showed significant differences between the combination of curcuminoids and essential oil when compared to the piroxicam group, with $p = 0.019$ ($p < 0.05$). Additionally, a significant result was found between the CMC-Na group and the piroxicam group, with $p = 0.007$. Lastly, there was a significant difference between the normal group and the piroxicam group, with $p = 0.027$. Furthermore, there were no significant differences between other groups.

The conclusion of this study is that the combination of turmeric curcuminoids and essential oil does not cause inflammation, as evidenced by the minimal inflammatory cell infiltration.

Keywords: Turmeric, Pain, Histology, Damage, Gaster, Piroxicam