

INTISARI

Piperin dalam lada putih (*Piper nigrum* L) memiliki efek hepatoprotektif, antiinflamasi, antiarthritis, antihipertensi dan antiasma. Penelitian ini bertujuan untuk mengetahui efek toksik piperin sub kronik terhadap skor kerusakan hati dan skor jumlah sel *polimorfonuklear* (PMN) pada hati dan ginjal.

Metode yang digunakan ialah *post only control group design*. Biji lada putih diekstraksi dengan metode sokhletasi menggunakan etil asetat. Subjek uji 30 ekor mencit jantan, 2-3 bulan, 35-45 gram, dibagi menjadi 5 kelompok yaitu kontrol piperin, dosis 17,5 mg/kgBB, dosis 35 mg/kgBB, dosis 70 mg/kgBB dan dosis 140 mg/kgBB. Pemberian piperin dilakukan secara oral selama 21 hari. Seluruh subjek dikorbkan pada hari ke-22. Organ hati dan ginjal diambil dan difiksasi dengan larutan formalin 10% dan dibuat preparat dengan pengecatan HE. Preparat diberi skor kerusakan hati dan skor jumlah PMN hati dan ginjal. Data dianalisis menggunakan uji Kruskal-Wallis dan dilanjutkan dengan uji Mann-Whitney.

Skor kerusakan hati kelompok kontrol; dosis 17,5 mg/kgBB; dosis 35 mg/kgBB; dosis 70 mg/kgBB dan dosis 140 mg/kgBB berturut-turut ialah: $1,13 \pm 0,05$; $1,53 \pm 0,34$; $1,91 \pm 0,20$; $2,10 \pm 0,20$ dan $2,41 \pm 0,14$. Skor jumlah PMN hati kelompok kontrol; dosis 17,5 mg/kgBB; dosis 35 mg/kgBB; dosis 70 mg/kgBB dan dosis 140 mg/kgBB berturut-turut ialah $0,10 \pm 0,08$; $0,33 \pm 0,10$; $0,50 \pm 0,08$; $0,70 \pm 0,11$ dan $0,88 \pm 0,13$. Skor jumlah PMN ginjal kelompok kontrol; dosis 17,5 mg/kgBB; dosis 35 mg/kgBB; dosis 70 mg/kgBB dan dosis 140 mg/kgBB berturut-turut ialah: $0,03 \pm 0,05$; $0,21 \pm 0,09$; $0,50 \pm 0,11$; $1,01 \pm 0,11$ dan $1,11 \pm 0,13$. Hasil uji statistik pada seluruh parameter menunjukkan perbedaan signifikan antara kontrol dengan kelompok piperin. Piperin secara sub kronik selama 21 hari menimbulkan efek toksik yang ditandai dengan perubahan histopatologi hati dan kenaikan jumlah sel PMN hati dan ginjal. Kerusakan semakin meningkat seiring dengan semakin tingginya dosis yang diberikan.

Kata kunci: ginjal, hati, piperin, PMN, uji toksisitas sub kronik.

ABSTRACT

Piperin in white pepper (*Piper nigrum* L) has a hepatoprotective effect, anti-inflammatory, anti-arthritis, antihypertensive and anti-asthma. This study aims to determine the toxic effects of subchronic piperine on liver damage scores and scores on the number of polymorphonuclear (PMN) cells in the liver and kidneys

The method used is post only control group design. White pepper seeds were extracted by soxhletation using ethyl acetate. The test subjects were 30 male mice, 2-3 months, 35-45 grams, divided into 5 groups namely piperine control, dose 17.5 mg / kg body weight, dosage 35 mg / kg body weight, dose 70 mg / kg body weight and dose 140 mg / kg body weight . Piperine administration is carried out orally for 21 days. All subjects were sacrificed on the 22nd day. Liver and kidney were taken and fixed with 10% formalin solution and preparations were made by painting HE. Preparations were given a liver damage score and a score of the number of liver and kidney PMN. Data were analyzed using the Kruskal-Wallis test and continued with the Mann-Whitney test.

Score of liver damage in control group; dose of 17.5 mg / kgBB; dose of 35 mg / kgBB; the dose of 70 mg / kgBB and the dose of 140 mg / kgBB are: 1.13 ± 0.05 ; 1.53 ± 0.34 ; 1.91 ± 0.20 ; 2.10 ± 0.20 and 2.41 ± 0.14 . Score of the number of liver PMN in the control group; dose of 17.5 mg / kgBB; dose of 35 mg / kgBB; the dose of 70 mg / kgBB and the dose of 140 mg / kgBB are 0.10 ± 0.08 respectively; 0.33 ± 0.10 ; 0.50 ± 0.08 ; 0.70 ± 0.11 and 0.88 ± 0.13 . Score of the number of kidney PMN in the control group; dose of 17.5 mg / kgBB; dose of 35 mg / kgBB; the dose of 70 mg / kgBB and the dose of 140 mg / kgBB are: 0.03 ± 0.05 ; 0.21 ± 0.09 ; 0.50 ± 0.11 ; 1.01 ± 0.11 and 1.11 ± 0.13 . The results of statistical tests on all parameters showed a significant difference between the control and the piperine group. Piperin in a subchronic for 21 days causes toxic effects characterized by changes in liver histopathology and increase in the number of PMN cells of the liver and kidneys. Damage increases with increasing dosage.

Keywords: kidney, liver, piperine, PMN, subchronic toxicity test.