PENGARUH *CIMETIDINE* DALAM MENGHAMBAT KERUSAKAN HEPAR TIKUS WISTAR YANG DIINDUKSI METANOL DOSIS BERTINGKAT

Studi Pada Gambaran AST dan ALT Hepar Tikus Wistar

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ABSTRAK

Pendahuluan: Alkohol tidak terlepas dari kehidupan sehari-hari yang bersifat adiktif dan mengganggu kesehatan. Di Indonesia tingkat konsumsi alkohol oplosan yang mengandung metanol masih tergolong tinggi dan banyak memakan korban jiwa. Keracunan metanol dapat menyebabkan kerusakan sel-sel hepar dan menyebabkan kadar AST dan ALT meningkat dalam darah. Pada penelitian sebelumnya, *cimetidine* menunjukan dapat berperan hepatoprotective dengan studi aspek histopatologinya mengingat 80% metabolisme alkohol terjadi di Hepar.
Tujuan: Mengetahui pengaruh pemberian *Cimetidine* dalam membantu menghambat kerusakan hepar tikus Wistar yang diinduksi metanol dengan pemberian dosis secara bertingkat ditinjau dari kadar AST dan ALT.
Metode: Penelitian *true experimental*, dengan *post-test only control group design*. Subjek penelitian adalah 35 ekor Tikus Wistar jantan *(Rattus Norvegicus)* dibagi 7 kelompok yaitu, Kontrol Sehat, Kontrol Negatif ¼ Dosis Letal Metanol, Kontrol Negatif ½ Dosis Letal Metanol, Kontrol Negatif 1 Dosis Letal Metanol, Perlakuan ¼ Dosis Letal methanol dengan *Cimetidine*, Perlakuan ½ Dosis Letal methanol dengan *Cimetidine*, Perlakuan 1 Dosis Letal methanol dengan *Cimetidine* (n=5) (Dosis *Cimetidine*: 30 mg/kgBB), Gambaran kerusakan dan efektivitas *cimetidine* didapatkan dengan menggunakan spektrofotometer dengan hasil berupa skor AST dan ALT.
Hasil: Uji statistik menunjukkan hasil tidak signifikan antara kelompok K+ dengan P-1 (AST dan ALT), K+ dengan P-2 (ALT)
Kesimpulan: *Cimetidine* dosis 30 mg/KgBB berpotensi sebagai hepatoprotective pada keadaan keracunan metanol.

Kata Kunci: AST, ALT, *Cimetidine*, Metanol, Hepar, Wistar

THE EFFECT OF CIMETIDINE IN INHIBITING METHANOL-INDUCED LIVER DAMAGE IN WISTAR RATS WITH GRADUAL DOSAGE

A Study On the AST and ALT Profiles of Wistar Rat Livers

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ABSTRACT

Introduction: Alcohol is an addictive substance that significantly disrupts daily life and poses health risks. In Indonesia, the consumption of adulterated alcohol containing methanol remains high and claims many lives. Methanol poisoning can lead to liver cell damage, resulting in elevated levels of AST and ALT in the blood. In previous studies, cimetidine has demonstrated hepatoprotective properties, particularly in histopathological aspects, considering that 80% of alcohol metabolism occurs in the liver.

Objective: To investigate the influence of Cimetidine administration in assisting the inhibition of methanol-induced liver damage in Wistar rats with gradually administered doses, as assessed through AST and ALT levels.

Method: This study employed a true experimental design with a post-test only control group design. The research subjects consisted of 35 male Wistar rats (Rattus Norvegicus) divided into 7 groups: Healthy Control, Negative Control ¼ Lethal Dose of Methanol, Negative Control ½ Lethal Dose of Methanol, Negative Control 1 Lethal Dose of Methanol, Treatment with ¼ Lethal Dose of Methanol and Cimetidine, Treatment with ½ Lethal Dose of Methanol and Cimetidine, Treatment with 1 Lethal Dose of Methanol and Cimetidine (n=5) (Cimetidine Dose: 30 mg/kgBW). The extent of damage and the effectiveness of cimetidine were assessed using a spectrophotometer, with the results presented as AST and ALT scores.

Results: Statistical analysis revealed non-significant differences between the K+ group and P-1 (AST and ALT), as well as between the K+ group and P-2 (ALT).

Conclusion: Cimetidine at a dose of 30 mg/kgBW has the potential to serve as a hepatoprotective agent in methanol poisoning.

Keywords: AST, ALT, Cimetidine, Methanol, Liver, Wistar