

An animal model of clinical kinetic analyzed to diminazene aceturate in subjects with Tripanosoma infection

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Abstrak

Diminazen aseturat dilaporkan menghambat aktivitas balik enzim transkriptase melalui mekanisme aksi pengganjalan pada beberapa protozoa eukariot parasitik seperti kerabat Tripanosoma. Telah dicari farmakokinetik plasma darah diminazen pada lima kambing terinfeksi yang diberi pengobatan 7 mg.kg-1 berat badan dosis tunggal intra muskular. Konsentrasi obat ditetapkan melalui Kromatografi Cair Kinerja Tinggi fase terbalik. Hasil menunjukkan rerata ($\pm$ galas baku) Absorbsi, Distribusi, Metabolisme, Ekskresi (ADME) berpola tri-eksponensial dengan K_a (menit⁻¹) 5.102 ± 26.10^{-2} (menit⁻¹), K_{12} (menit⁻¹) dan K_{21} (menit⁻¹) $18.10^{-2} \pm 1.10^{-2}$, $14.10^{-2} \pm 1.10^{-2}$ dan 1.4103 ± 1.10^{-2} . Rerata harga $t_{1/2}$ (menit) dan K_{13} (menit⁻¹) didapat $1.4.104 \pm 4.10^4$ dan $3.10^{-2} \pm 2.10^{-2}$. Rerata harga T_{max} (menit) dan C_{max} (fig.mt⁻¹) didapat 53.71 ± 30.61 and 13.40 ± 8.13 . Rerata harga Y_{ds} (L), Cl (ml.menit⁻¹), $TL_{1/2}$ (jam) and Area di bawah kurva $\int_0^\infty C_p dt$ (fig.L".menit) didapat 4.91 ± 3.12 , 14.29 ± 4.08 , 94.91 ± 33.23 dan 12.680 ± 2.722 . (MedJIndones 2006; 15:69-73).

Diminazene aceturate has been reported to inhibit the reverse transcriptase activity by intercalating action mechanism of a number of protozoan eucaryot parasitic like Trypanosoma species. The phamacokinetics of diminazene in the blood plasma of five infected goat treated with single intramuscular doses of 7 mg diminazen base kg body weight was investigated. The concentrations of the drug were determined by reverse phase high performance liquid chromatography. Results show that the mean ($\pm$ SD) Absorption, Distribution, Metabolism and Excretion (ADME) of the drug plasma followed a tri-exponential process with K_a (minutes⁻¹) were obtained at $5.10^{-2} \pm 26.10^{-2}$ (minutes⁻¹), K_{12} (minutes⁻¹) and K_{21} (minutes⁻¹) were obtained at $18.10^{-2} \pm 1.10^{-2}$, $14.10^{-2} \pm 1.10^{-2}$ and 1.4103 ± 1.10^{-2} . The mean values of $t_{1/2}$ (minutes⁻¹) and K_{13} (minutes⁻¹) were obtained at $1.4.104 \pm 4.10^4$ and $3.10^{-2} \pm 2.10^{-2}$. The mean values of T_{max} (minutes) and C_{max} (fig.mt⁻¹) were obtained at 53.71 ± 30.61 and 13.40 ± 8.13 . The mean values of Y_{ds} (L), Cl (ml .minutes⁻¹), $TL_{1/2}$ (hours) and $ALKf^{area}$ (L".minutes) were obtained at 4.91 ± 3.12 , 14.29 ± 4.08 , 94.91 ± 33.23 and 12.680 ± 2.722 . (MedJIndones 2006; 15:69-73).