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论文

# 间硝苯地平在Beagle犬体内的药代动力学

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摘要：

目的用反相高效液相色谱法研究间硝苯地平(*m*-nifedipine，*m*-Nif)在Beagle犬体内的药代动力学特征。方法正交设计优化色谱分离条件，Beagle犬分别iv给予*m*-Nif 0.288 mg·kg$^{-1}$和ig *m*-Nif 1.152，3.456，10.370 mg·kg$^{-1}$。用反相高效液相色谱法分析血浆中原型药物浓度，血浆药物浓度-时间数据用3P97药代动力学软件分析。结果Beagle犬iv *m*-Nif，其体内过程符合二室模型，$T_{1/2}\beta$为116.8 min；ig给予*m*-Nif 后在Beagle犬体内的代谢符合一室模型，其中低剂量(1.152 mg·kg$^{-1}$)组$C_{max}$为20 μg·L$^{-1}$， $T_{1/2}(k_e)$为147 min；中剂量(3.456 mg·kg$^{-1}$)组$C_{max}$为36 μg·L$^{-1}$，$T_{1/2}(k_e)$ 为122 min；高剂量(10.37 mg·kg$^{-1}$)组$C_{max}$为69 μg·L$^{-1}$，$T_{1/2}(k_e)$为144 min。结论Beagle犬ig和iv *m*-Nif 后，血浆中药物消除迅速，口服绝对生物利用度较低。

关键词： 间硝苯地平 药物代谢动力学 高效液相色谱法

# Pharmacokinetics of *m*-nifedipine in Beagle dogs

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Abstract:

AimTo study the pharmacokinetics of *m*-nifedipine (*m*-Nif) in Beagle dogs. Methods The Beagle dogs were divided into two groups. *m*-Nif was intravenously administered to the Beagle dogs in group 1 at the dose of 0.288 mg·kg$^{-1}$, and it was orally administered to the Beagle dogs in group 2，3 and 4 at the dose of 1.152， 3.456 and 10.370 mg·kg$^{-1}$, respectively. *m*-Nif in plasma was detected by reversed phase high performance liquid chromatography. The pharmacokinetic parameters were calculated by 3P97 software. ResultsWhen *m*-Nif was intravenously administered, the plasma concentration-time curve was fit to a two-compartment model and $T_{1/2}\beta$ was 117 min. When *m*-Nif was orally administered, the plasma concentration-time curve was fit to a one-compartment model. $T_{1/2}(k_e)$ and $C_{max}$ were 147 min and 20 μg·L$^{-1}$; at the low dose of 1.152 mg·kg$^{-1}$. $T_{1/2}(k_e)$ was 122 min and $C_{max}$ was 36 μg·L$^{-1}$ at the middle dose of 3.456 mg·kg$^{-1}$. $T_{1/2}(k_e)$was 144 min and $C_{max}$ was 69 μg·L$^{-1}$ at the high dose of 10.37 mg·kg$^{-1}$, respectively. ConclusionIt was showed that the speed of elimination of *m*-Nif was high in Beagle dogs. The absolute bioavailability of *m*-Nif given orally was very low.

Keywords: pharmacokinetics；high performance liquid chromatography *m*-nifedipine

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