



## 苦参碱肌肉注射给药在大鼠体内的药动学研究

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**中文摘要:**目的:研究苦参碱肌肉注射给药在大鼠体内的药代动力学。方法:采用高效液相色谱法测定苦参碱的血药浓度,Shim-pack VP-ODS色谱柱(4.6 mm×150 mm,5 μm);流动相:乙腈-0.02 mol·L<sup>-1</sup>乙酸铵水溶液-三乙胺(30:70:0.04);流速1 mL·min<sup>-1</sup>;检测波长220 nm;柱温40℃;进样量20 μL。用DAS 2.1.1药动学程序处理苦参碱的血药浓度-时间数据。结果:苦参碱在大鼠体内的药代动力学符合二室开放模型,C<sub>max</sub>为21.113 9 mg·L<sup>-1</sup>,t<sub>max</sub>为0.75 h,t<sub>1/2α</sub>为1.34 h,t<sub>1/2β</sub>为3.509 h,AUC<sub>0-∞</sub>为90.984 mg·h<sup>-1</sup>·L<sup>-1</sup>,AUC<sub>0-∞</sub>为100.346 mg·h<sup>-1</sup>·L<sup>-1</sup>。结论:与口服给药相比,肌肉注射给药的苦参碱吸收较好,从中央室到周边室的分布也较快;其绝对生物利用度也比口服给药高,推测其药理作用的强度比口服给药强,维持时间也比口服给药长。

中文关键词:苦参碱 肌肉注射 药动学

## Study on pharmacokinetics of matrine by intramuscular administration in rat

**Abstract:** Objective: To study the pharmacokinetics of matrine (MT) intramuscular administration in rat. Method: Plasma concentration of matrine was determined by HPLC under the following conditions: column (Shim-pack VP-ODS, 4.6 mm×150 mm, 5 μm); eluent (acetonitrile-0.02 mol ammonium acetate buffer-triethylamine 30:70:0.04); flow rate was 1 mL·min<sup>-1</sup> and ultraviolet detection wavelength was set at 220 nm; column temperature 40℃; aliquot injected 20 μL. All data of concentration-time of matrine were treated with pharmacokinetics program DAS 2.1.1. Result: A simple, sensitive and reliable method for determining matrine in rat plasma by HPLC was established. The plasma concentration time profiles of MT fitted in with two-compartment models well, and the main pharmacokinetic parameters found for MT after i.m. infusion were as follows: C<sub>max</sub>=21.113 9 mg·L<sup>-1</sup>, t<sub>max</sub>=0.75 h, t<sub>1/2α</sub>=1.34 h, t<sub>1/2β</sub>=3.509 h, AUC<sub>0-∞</sub>=90.984 mg·h<sup>-1</sup>·L<sup>-1</sup>, AUC<sub>0-∞</sub>=100.346 mg·h<sup>-1</sup>·L<sup>-1</sup>. Conclusion: Compare with oral administration, the matrine is absorbed well and distributes fast with intramuscular administration; the absolute bioavailability of matrine is higher. According to this, the pharmacological action is also stronger and duration is longer.

keywords: matrine intramuscular injection pharmacokinetics

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