

论文

静脉注射左氧氟沙星在兔血液与组织液中的药代动力学

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摘要:

目的 研究家兔静脉注射左氧氟沙星(LVFX)后其血液和组织液中的药物分布及药代动力学参数,为铜绿假单胞菌及常见致病菌转入动物体内实验提供依据。方法 建立兔组织笼模型,用高效液相色谱法测定给药后不同时点家兔血液和组织液的药物浓度,计算药代动力学参数。结果 静脉注射左氧氟沙星(10mg/kg)后,血液、组织液峰质量浓度(Cmax)分别为(8.27±0.9)、(2.48±0.3)mg/L,消除半衰期(T1/2β)分别为(1.06±0.1)、(3.63±1.3)h,表观分布容积(V)分别为(1.55±0.3)、(4.89±2.1)L/kg。结论 LVFX直接静脉注射给药后,能迅速到达组织液中,在组织液中存留时间长,药物浓度波动小,有助于维持组织液的有效浓度。

关键词: 氧氟沙星; 组织分布; 药代动力学; 色谱法, 高压液相

Pharmacokinetics of levofloxacin in rabbit blood and tissue fluid after intravenons injection

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Abstract:

Objective To measure blood and tissue fluid concentrations of levofloxacin (LVFX) in rabbits and calculate the drug and pharmacokinetic parameters after intravenous injection, and then provide the basis for the transition of common pathogens such as Pseudomonas aeruginosa in vitro studies to in vivo. Methods The rabbit cage models were established, and then the rabbit blood and tissue fluid concentrations of LVFX at different times were measured by high performance liquid chromatography(HPLC). The pharmacokinetic parameters were calculated. Results After 10mg/kg LVFX was intravenously injected in rabbits, the peak concentration (Cmax) of LVFX in blood and tissue fluid was (8.27±0.9) and (2.48±0.3)mg/L; the half-life (T1/2β) of various concentrations in blood and tissue fluid was (1.06±0.1) and (3.63±1.3)h; the apparent volume of distribution was (1.55±0.3) and (4.89±2.1)L/kg, respectively. Conclusion LVFX shows good penetration when administered by intravenous injection in the tissue fluid. Both the long half-life of LVFX and small fluctuation of drug concentration could be helpful to maintain therapeutic levels in tissue fluid.

Keywords: Ofloxacin; Tissue distribution; Pharmacokinetics; Chromatography, high pressure liquid

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