[1]柳珊,杨林,廖红,等.吴茱萸碱纳米复合物的药代动力学和生物利用度研究[J].第三军医大学学报,2013,35(04):325-327.

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吴茱萸碱纳米复合物的药代动力学和生物利用度研

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Title: Pharmacokinetics and bioavailability of evodiamine nanocomplex

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关键词: 吴茱萸碱; 纳米复合物; 药代动力学; 生物利用度

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摘要: 目的　制备吴茱萸碱纳米复合物，并研究其在大鼠体内的药代动力学和生物利用度。　方法　采用溶剂挥发法制备吴茱萸碱纳米复合物，考察其载药量、粒径和Zeta电位。大鼠单剂量灌胃给予吴茱萸碱纳米复合物和吴茱萸碱原料药，眼底采血，采用液液萃取法处理血浆样品，以和厚朴酚为内标物质，RP-HPLC测定血浆样品中吴茱萸碱的含量，用DAS软件分析药动学数据。　结果　制备所得吴茱萸碱纳米复合物的载药量、粒径和Zeta电位分别为（24.26±0.97）%、248.8 nm、-28.61 mV。吴茱萸碱和吴茱萸碱纳米复合物在大鼠体内的药动学行为均符合一级消除动力学二室开放模型，吴茱萸碱与磷脂形成的纳米复合物的大鼠口服生物利用度是原料药的2.16倍。结论　成功制备了吴茱萸碱纳米复合物，建立了一种检测吴茱萸碱血药浓度的简单、可行的方法，吴茱萸碱纳米复合物明显提高了吴茱萸碱的口服生物利用度。

Abstract: Objective　To study the pharmacokinetic behavior and bioavailability of evodiamine nanocomplex in rats.　Methods　Evodiamine nanocomplex was prepared by solvent evaporation method, and its loading efficiency, particle size and zeta potential were investigated by RP-HPLC and dynamic laser light scattering. Rats were administrated with (i. g.) evodiamine solution and evodiamine nanocomplex (500 mg/kg), respectively. Blood samples were collected from eye socket, and evodiamine in blood plasma was extracted by liquid-liquid extraction and determined by RP-HPLC using honokiol as the internal standard (IS). Compartmental pharmacokinetics was analyzed by DAS software.　Results　The loading efficiency, particle size and zeta potential of evodiamine

nanocomplex were (24.26±0.97)%, 248.8 nm and -28.61 mV, respectively. Mean plasma concentration-time curve of evodiamine after oral administration of evodiamine nanocomplex and evodiamine solution in rats were both in accordance with open two-compartment mode. The bioavailability of evodiamine after oral administration of evodiamine nanocomplex was 2.16 times higher than that of evodiamine solution. Conclusion Evodiamine nanocomplex is successfully prepared by solvent evaporation method. The developed HPLC method is suitable for the determination of evodiamine in rat blood plasma. The bioavailability of evodiamine in rats increases remarkably after oral administration of evodiamine nanocomplex as compared with that of evodiamine solution.

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