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中药复方谱动学与谱效动力学差异性的研究

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中文摘要：目的: 对中药多成分体系谱动学与谱效动力学的数学模型及参数差异进行研究,回答中药多成分药物动力学参数能否指导中药临床用药问题。 方法 :在已建立的中药四谱学理论基础上,主要对谱动学与谱效动力学的数学模型及参数的差异进行对比分析,找出其特点与应用条件。 结果 :从定量药理学的角度,分析了单成分与中药多成分药物动力学,药效动力学的函数表达、零、一、二阶矩的通用式及运算结果,总量药物动力学参数由单个成分的药物动力学参数决定,总量药效动力学参数由单成分的药物动力学参数与药效系数共同决定,当中药各成分的构成比决定了,各成分的效应系数一定时,药效动力学参数与药物动力学参数对应。 结论 :中药药效决定于药物动力学参数及效应系数。单成分药物动力学参数能独立指导药物临床用药是谱效动力学的特例,不适用于多成分体系,不能用之来解决中药多成分谱效动学的问题。

中文关键词：谱动学 谱效动力学 药物动力学 药效动力学 单成分 多成分

Study on differences between pharmacokintics and chromatopharmacodynamics for Chinese materia medica formulae

Abstract: Objective : To study on the differences between chromatopharmacokinetics (pharmacokinetics with fingerprint chromatography) and chromatopharmacodynamics (pharmacodynamics with fingerprint chromatography) of Chinese materia medica formulae to answer the question whether the pharmacokinetic parameters of multiple composites can be utilized to guide the medication of multiple composites. Method : On the base of established four chromatopharmacology(pharmacology with chromatographic fingerprint), the pharmacokinetics, and pharmacodynamics were analyzed comparably on their mathematical model and parameter definition. Result : On the basis of quantitative pharmacology, the function expressions and total statistical parameters, such as total zero moment, total first moment, total second moment of the pharmacokinetics, and pharmacodynamics were analyzed to the common expressions and elucidated results for single and multiple components in Chinese materia medica formulae. Total quantitative pharmacokinetic, i.e. chromatopharmacokinetic parameter were decided by each component pharmacokinetic parameters, whereas the total quantitative pharmacodynamic, i.e. chromatopharmacodynamic parameter were decided by both of pharmacokinetic and pharmacodynamic parameters of each components. The pharmacokinetic parameters were corresponded to pharmacodynamic parameters with an existing stable effective coefficient when the constitutive ratio of each composite was a constant. Conclusion : The effects of Chinese materia medica were all controlled by pharmacokinetic and pharmacodynamic coefficient. It is a special case that the pharmacokinetic parameter could independently guide the clinical medication for single component whereas the chromatopharmacokinetic parameters are not applied to the multiple drug combination system, and not be used to solve problems of chromatopharmacokinetic of Chinese materia medica formulae.

keywords:chromatopharmacokinetic chromatopharmacodynamics pharmacokinetics pharmacodynamics single component multiple componenents

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