

基础研究

不同给药方式下家兔尿液中乌头碱代谢产物的比较

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摘要:

目的: 研究不同给药方式下家兔尿液中的乌头碱(AC)代谢产物, 探讨不同代谢产物的作用。方法: 5只家兔分为AC 1.0 mg·kg⁻¹灌胃给药组、0.02 mg·kg⁻¹静脉给药组及空白对照组, 收集代谢产物, 采用LC/ESI-MSn方法, 通过测定化合物的准分子离子和各级碎片离子, 推断尿液中存在的代谢产物。结果: 与空白对照组比较, 静脉给药组尿液中除原形药物外主要有1种代谢产物(M1), 灌胃给药组除原形药物外主要有2种代谢产物(M1, M2); M1为16-O-去甲基乌头碱, M2为乌头碱去氧去甲基产物; M1和M2可能为AC失去1个亚甲基和脱去1个羟基所形成的代谢产物。结论: AC经不同体内代谢方式得到2种代谢产物, 与AC原型相比, 2种代谢产物与AC的药理及毒理作用密切相关。

关键词: 乌头碱; 代谢产物; 液相色谱-电喷雾电离-多级质谱法

Comparison of metabolites of aconitine in rabbit urine under different routes of administration

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Abstract:

Abstract: Objective To investigate the differences of metabolites of aconitine in rabbit urine under different routes of administration in order to demonstrate the effects of different metabolites. Methods With the method of LC/ESI-MSn, 15 rabbits were divided into 3 group: 1.0 mg·kg⁻¹ AC lavage administration group, 0.02 mg·kg⁻¹ intravenous injection group and physiological saline lavage group (control group), the quasi-molecule particles and each stage fragment ions were detected to identify the metabolites administration in the urine. Results Compared with control group, one major metabolite (M1) except aconitine (AC) was found in intravenous injection group, and two major metabolites (M1, M2) in lavage administration group. M1 was deduced as 16-O-demethylaconine (M1), M2 exhibited the deoxidation and nor-methyl production of aconitine, and M2 may be the metabolic products of AC which lost methylene and hydroxyl. Conclusion Two kinds of metabolites of aconitine are obtained under different routes of administration. Compared with AC, they have correlation with pharmacological and toxicological effects of AC.

Keywords: aconitine; metabolites; LC/ESI-MSn

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