岳寿伟,殷翠萍,王晓聆.pH值及皮肤角质层对乌头生物碱直流电离子导入量的影响[J].中国康复医学杂志,2006,(10):887~889

pH值及皮肤角质层对乌头生物碱直流电离子导入量的影响

点此下载全文

岳寿伟 殷翠萍 王晓聆

[1]山东大学齐鲁医院康复科,济南市250012 [2]山东大学物理医学教研室,济南市250012

基金项目：

DOI：

摘要：

目的：比较不同pH及去角质皮肤条件下乌头生物碱的体外透皮吸收情况。方法：成年大鼠28只，随机分4组（n=7）：pH4．0完整皮肤组，pH7．0完整皮肤组，pH9．0完整皮肤组，pH4．0去角质层皮肤组。取含乌头生药3g／ml浓度的提取液作为释放液，各组均采用0．1mA／cm^2直流电导入作为促透因素，在设定条件下行离体透皮吸收，并均在实验开始后10min、20min、30min、40min、50min于接受液取样。高效液相色谱法建立新乌头碱的峰值-含量标准曲线．并测定不同时间点取样溶液中新乌头碱含量，通过计算新乌头碱累积透过量-时间曲线图求得各组透皮速率。结果：当pH值为4．0、7．0、9．0时，新乌头碱通过完整皮肤的透皮吸收率分别为12．623，4．916，3．121，差异有显著性意义：当pH值为4．0时去角质层皮肤的新乌头碱透皮速率是未去角质层的9．60倍。6%乌头溶液中新乌头碱浓度为0．00319%。结论：在pH4．0-9．0的缓冲条件下，乌头碱的直流电促透皮量随pH的下降而增加：去角质条件下直流电导入的新乌头碱的量明显高于完整皮肤条件下的导入量；临床用6%乌头溶液的透皮吸收安全有效。

关键词：体外透皮吸收 新乌头碱 pH值 角质层

Effects of different pH buffer solution and corneum on the absorption of Aconitum alkaloids introduced by direct current in vitro

Download Fulltext

YUE Shouwei YIN Cuiping WANG Xiaoling

Dept. of Rehabilitation Medicine, Shandong University,Qilu Hospital,Jinan, 250012

Fund Project:

Abstract:

Objective:To study the effects of different pH buffer solutions and the corneum on the transcutaneous permeability of Aconitum alkaloids in vitro.Method:Twenty-eight adult rats were randomly divided into four teams(n=7),each team with different transcutaneous absorptive condition:pH 4.0 buffer solution and normal skin; pH7.0 buffer solution and normal skin;pH9.0 buffer solution and normal skin;pH4.0 buffer solution and corneum-moved skin. R. aconiti was extracted and the solution with 3g/ml aconiti was obtained. Using this solution and 0.1mA/cm2 direct current as absorption facilitating factor delivery solution for the transcutaneous absorption of Aconitum alkaloids in vitro, with different conditions above. From the beginning of absorption, samples were collected from receiving solution at 10min?20min?30min?40min?50min, separately.A peak area-content standard curve of mesaconitine was established through the high performance liquid chromatography method.Thus,the contents of mesaconitine were determined of all samples.Calculating accumulative permeation quantity at each correspond time. So the percutaneous speeds were obtained from Q-t curves.Result:When the pH value of buffer solution were 4.0, 7.0, 9.0, the percutaneous speed were 12.623,4.916,3.121,separately, the statistic differences were obvious. The percutaneous speed of conium -moved skin was 9.60 times of normal skin. The concentration of MA in 6% aconiti solution was 0.00319%.Conclusion:Within pH 9.0 to pH 4.0, if the pH of buffer solution decreases, the percutaneous absorption of Aconitum alkaloids increases.The percutaneous absorption of Aconitum alkaloids with conium-moved skin obviously increases than normal skin.For the aconiti percutaneous absorptive therapy, the clinical 6% concentration is safe.

Keywords:mesaconitine percutaneous absorption pH corneum

查看全文 查看/发表评论 下载PDF阅读器