

论著

地西洋与咪达唑仑对离体大鼠子宫平滑肌收缩功能的影响

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收稿日期 2006-4-25 修回日期 网络版发布日期 2008-5-22 接受日期 2006-7-21

摘要 目的 比较苯二氮卓类药物(BDZ)地西洋和咪达唑仑对孕和未孕大鼠子宫平滑肌收缩的影响是否不同。方法 分离、制备孕和未孕SD大鼠子宫平滑肌条, 采用累积给药法在浴槽内加入地西洋和咪达唑仑 $0.01\sim 300\ \mu\text{mol}\cdot\text{L}^{-1}$, MedLab生物信号采集系统记录给药前后子宫平滑肌收缩幅度和频率。结果 地西洋和咪达唑仑对孕和未孕大鼠子宫平滑肌的收缩幅度均呈浓度依赖性抑制, 且咪达唑仑的抑制作用明显较地西洋强。对于未孕大鼠, 地西洋和咪达唑仑抑制子宫平滑肌收缩的 IC_{50} 分别为 280.6 和 $1.1\ \mu\text{mol}\cdot\text{L}^{-1}$ 。对于孕大鼠, 地西洋与咪达唑仑抑制子宫平滑肌收缩的 IC_{50} 分别为 52.2 和 $28.2\ \mu\text{mol}\cdot\text{L}^{-1}$ 。地西洋对子宫平滑肌收缩频率的影响较小, 而咪达唑仑在高浓度时能完全抑制子宫平滑肌的收缩。结论 咪达唑仑对未孕及孕大鼠子宫平滑肌收缩幅度和频率的抑制作用强于地西洋, 尤其是对未孕大鼠子宫平滑肌, 为临床选择BDZ药物用于分娩提供了实验依据。

关键词 [地西洋](#) [咪达唑仑](#) [子宫收缩](#) [肌,平滑](#) [子宫](#) [大鼠](#)

分类号 [R972](#)

Effects of diazepam and midazolam on contraction of rat uterine smooth muscles

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Abstract

AIM To compare effects of diazepam and midazolam on the isolated pregnant and nonpregnant rat uterine smooth muscles. **METHODS** Uterine strips from the pregnant and nonpregnant rats isolated and prepared. After contractions became regular, strips were exposed to cumulative concentrations ($0.01\text{-}300\ \mu\text{mol}\cdot\text{L}^{-1}$) of diazepam and midazolam. Contractile amplitude and frequency of the isolated uterine smooth muscles were recorded by MedLab Biological Signal Collection System. **RESULTS** Both drugs inhibited contractile amplitude in a concentration-dependent manner on myometrium from non-pregnant and pregnant rats. On myometrium of non-pregnant rats, the IC_{50} of diazepam and midazolam was 280.6 and $1.1\ \mu\text{mol}\cdot\text{L}^{-1}$, respectively. On myometrium of pregnant rats, the IC_{50} of diazepam and midazolam was 52.2 and $28.2\ \mu\text{mol}\cdot\text{L}^{-1}$, respectively. Diazepam had slight inhibitory effect on the contractile frequency, while midazolam completely depressed the contractile activity at the highest concentration. **CONCLUSION** The inhibitory effect of midazolam is stronger than that of diazepam, especially on the myometrium from nonpregnant rats, providing experimental basis for clinical use of midazolam on parturition.

Key words [diazepam](#) [midazolam](#) [uterine contraction](#) [muscle](#) [smooth](#) [uterus](#) [rats](#)

DOI:

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