

A型肉毒素抑制电场刺激及乙酰胆碱引发的大鼠胃体胃底离体平滑肌收缩

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中文摘要:目的:观察大鼠胃体、胃底离体平滑肌条自发性收缩及电场刺激(EFS)、乙酰胆碱(ACh)和A型肉毒素(BTX-A)对肌条收缩的影响,并探讨其机制。方法:取大鼠胃体胃底平滑肌制备肌条,肌条随机分为对照组、EFS组、BTX-A($10\text{ U} \cdot \text{mL}^{-1}$)组、BTX-A($10\text{ U} \cdot \text{mL}^{-1}$)+EFS组、ACh($100\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)组、ACh($100\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)+BTX-A($10\text{ U} \cdot \text{mL}^{-1}$)组、ACh($100\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)+阿托品($1\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)组,采用Biolap 420E生物机能实验系统记录肌条收缩数据。结果:EFS引发胃体平滑肌张力增强($P<0.05$)及振幅增大($P<0.01$),引发胃底平滑肌张力增强($P<0.01$)及振幅增大($P<0.05$);BTX-A降低胃体平滑肌自发性收缩张力及振幅($P<0.01$),引发胃底平滑肌自发性收缩张力下降($P<0.05$);BTX-A可抑制EFS引发的胃体平滑肌张力增强及振幅增大效应($P<0.01$),对EFS引发的胃底平滑肌张力增强($P<0.01$)及振幅增大($P<0.05$)也产生抑制;BTX-A降低ACh引发的胃体胃底平滑肌收缩张力增强及振幅增大($P<0.01$)。结论:EFS可增强胃体胃底平滑肌收缩能力;EFS对BTX-A作用后胃体胃底平滑肌收缩不产生增强作用;BTX-A可抑制胃体胃底平滑肌自发性收缩及ACh引发的收缩。

中文关键词:[A型肉毒素](#) [胃体](#) [胃底](#) [乙酰胆碱](#) [电场刺激](#)

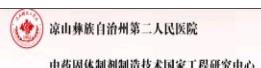
Inhibitory Effect of Botulinum Toxin Type A on Gastric Body and Gastric Fundus Smooth Muscle Contractility Induced by EFS and ACh-induced in Rats *in vitro*

Abstract: Objective: To observe the effect of botulinum toxin type A (BTX-A),electrical field stimulation(EFS)and acetylcholine(ACh) on spontaneous contractility in gastric body and gastric fundus smooth muscle. **Method:** Muscle strips in gastric body and gastric fundus were prepared, and subdivided randomly into control group, EFS group, BTX-A($10\text{ U} \cdot \text{mL}^{-1}$)group, BTX-A($10\text{ U} \cdot \text{mL}^{-1}$)+ EFS group, ACh($100\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)group, ACh($100\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)+BTX-A($10\text{ U} \cdot \text{mL}^{-1}$)group, Ach($100\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)+Atropine($1\text{ }\mu\text{mol} \cdot \text{L}^{-1}$)group. The data were recorded by physiological experimental system of BL-420. **Result:** EFS enhanced the tension($P<0.05$)and amplitude($P<0.01$)in gastric body contractility, and similar results was observed in gastric fundus contractility; BTX-A decreased spontaneous contractile tension and amplitude ($P<0.01$)in gastric body and tension($P<0.05$)in gastric fundus; BTX-A inhibited EFS-induced smooth muscle contractility including tension and amplitude($P<0.01$)in gastric body,tension($P<0.01$) and amplitude($P<0.05$)in gastric fundus, BTX-A inhibited ACh-induced smooth muscle contractility including tension and amplitude($P<0.01$)in gastric body and gastric fundus. **Conclusion:** EFS enhances smooth muscle spontaneous contractility in gastric body and gastric fundus; BTX-A inhibits gastric body and gastric fundus smooth muscle spontaneous contractility; BTX-A inhibits EFS and ACh-induced smooth muscle contractility in gastric body and gastric fundus.

keywords:[botulinum toxin A](#) [gastric body](#) [gastric fundus](#) [acetylcholine](#) [electrical field stimulation](#)

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