

The effect of nitroglycerin on the contraction of rat uterine smooth muscle

Tae Hun An, M.D., Chang Hoon Song, M.D.¹

Department of Anesthesiology and Pain Medicine, ¹Obstetrics and Gynecology,
Chosun University, Gwang Ju, Korea

Background : It has been reported that nitroglycerin relaxes not only vascular smooth muscle but also uterine smooth muscle. The aim of the present study was to investigate the effect of nitroglycerin on rat uterine contractile activity *in vitro*.

The effect of nitroglycerin on myometrial spontaneous activity and oxytocin-induced contractions was also observed.

Methods : Uterine Smooth muscle tissues were obtained from non-pregnant female rats (n=21). The uterine segments were mounted in tissue baths. After spontaneous or oxytocin-induced activity had been accomplished, nitroglycerin in various concentrations was added to the bath and the effects were continuously registered.

Results : Nitroglycerin induced a dose-dependent inhibition of oxytocin-induced as well as spontaneous myometrial contractile activity. Complete muscular relaxation on spontaneous contractility was obtained at a concentration of 50 $\mu\text{g}/\text{mL}$. Complete muscular relaxation on oxytocin-induced contractility was obtained at a concentration of 75 $\mu\text{g}/\text{mL}$.

Conclusion : Nitroglycerin inhibited the uterine contractile response to exogenous oxytocin as well as spontaneous in the estrous rat.