

The assessment of a selective inhibition of potassium channels and guanylate cyclase in the relaxation induced by exogenous nitric oxide in the human nonpregnant myometrium

Beata Modzelewska, Anna Kostrzevska

To evaluate the involvement K^+ channels in the relaxation induced by exogenous nitric oxide, after preincubation with L-arginine analogue L-NA in the human nonpregnant myometrium. The activity of myometrial strips, obtained from 60 premenopausal hysterectomised women, mounted in an organ bath was recorded under isometric conditions using force transducers with digital output. Concentration-response curves to DEA/NO after inhibition of endogenous NO were constructed in the absence and presence of soluble granulate cyclase and K^+ channels' blockers. The responses were quantified by calculating the area under the curve, the amplitude and frequency of the contractions. The inhibition of NOS results in slight but significant attenuation of the myometrium strips response to DEA/NO. Pre-treatment with both sGC inhibitors after preincubation with L-NA did not counteract the DEA-NO-induced relaxation of the spontaneous contractions of the myometrial strips. Application of blockers of different types of K^+ channels to the myometrial strips significantly attenuated relaxing effect of cumulative DEA/NO administration in all cases. The present data indicate that even when endogenous production of NO is inhibited, the DEA/NO induced relaxation of human non-pregnant myometrium without involving the cGMP pathway.