THE EFFECT OF POTASSIUM CHANNEL BLOCKERS ON THE RELAXANT RESPONSE OF HUMAN INTRAUTERINE ARTERIES TO EXOGENOUS NITRIC OXIDE.

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Nitric oxide (NO) is known to be an important relaxant of contractile activity in various muscles. It is generally accepted that NO activates soluble guanylate cyclase, causing the activation of several mechanisms leading to vasorelaxation. In some vessels, NO may directly activate K⁺ channels causing hyperpolarisation of the cell membrane. Several types of K⁺ channel may be involved in NO-induced relaxation, including ATP-dependent K⁺ channels, Ca²⁺-sensitive K⁺ channels with small and large conductance, and even voltage-dependent K⁺ channels.

The purpose of this study was to investigate the involvement of different types of K⁺ channel in the responses of human intrauterine arteries to exogenous nitric oxide donated by sodium nitroprusside.

Uterine arteries (diameter 0.6-1.2 mm) were obtained from non-pregnant women, aged 41-51, who were undergoing hysterectomy for benign gynaecological disorders. The local ethical committee approved the study. Experiments were performed on artery rings without endothelium. The responses of the arteries to AVP were recorded under isometric conditions. The quantification of the responses was done by calculating the area under the curve. The area was measured from the baseline over a 10 minute period after each stimulus. The effects were evaluated by comparing the experimental responses with the controls (set as 100%).