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## Alpha adrenergic receptors are involved in the contractile activity of neuropeptide Y in the porcine isolated ovarian artery

W. Markiewicz

<https://doi.org/10.17221/5781-VETMED>

Citation: Markiewicz W. (2003): Alpha adrenergic receptors are involved in the contractile activity of neuropeptide Y in the porcine isolated ovarian artery. Veterinarni Medicina, 48: 283-292.

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The objective of this study was to determine whether  $\alpha$ -adrenergic receptors are involved in the contractile activity of neuropeptide Y (NPY) in the porcine isolated ovarian artery collected from immature pigs and from the animals on day 1–5, 8–13 and 17–20 of the estrous cycle. NPY increased ( $P < 0.05$ ) blood pressure in preparations collected from the immature and mature pigs. NPY administration into prazosin pre-treated vessels increased ( $P < 0.05$ ) blood pressure in preparations of the immature and mature animals with the highest potency in the vessels from days 17–20 of the cycle. Simultaneous methoxamine and NPY treatment caused an increase ( $P < 0.05$ ) in blood pressure in the vessels from all the periods examined with the highest potency in the preparations from days 17–20 of the cycle. NPY administration at the time of the maximum response to rauwolscine increased ( $P < 0.05$ ) blood pressure in the preparations from the immature and mature pigs with the highest changes in the preparations from days 17–20 of the cycle. In clonidine pre-treated ovarian arteries, NPY insignificantly increased ( $P > 0.05$ ) blood pressure in the preparations collected from the immature pigs and on days 1–5, 8–13 of the cycle, and significantly increased ( $P < 0.05$ ) blood pressure in preparations from the animals on days 17–20 of the oestrous cycle. The present study has revealed that NPY increases blood pressure in the isolated porcine ovarian artery and that  $\alpha$ -adrenergic receptors are involved in the vasocontractile action of this peptide. Moreover, the changes in the blood pressure caused by NPY alone or administered after  $\alpha$ -adrenergic receptor agonists or antagonists treatment are dependent on steroid hormone concentrations.

**Keywords:**

neuropeptide Y;  $\alpha$ -adrenergic agonists;  $\alpha$ -adrenergic antagonists; norepinephrine; porcine ovarian artery; blood pressure

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**Impact factor (WoS)**

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