

Journal of Andrology, Vol 19, Issue 5 551-557, Copyright © 1998 by The American Society of Andrology

## JOURNAL ARTICLE

# The influence of castration on pharmacologically induced penile erection in the cat

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The purpose of this study was to investigate the in vivo effects of intracavernosal injections of adrenomedullin (ADM), calcitonin gene-related peptide (CGRP), nociceptin, vasoactive intestinal polypeptide (VIP), sodium nitroprusside (SNP), and prostaglandin E1 (PGE1) on penile erection in castrated and intact (control) anesthetized cats.

Erectile responses to ADM, CGRP, nociceptin, VIP, SNP, and PGE1 were compared with responses to a standard triple-drug combination (1.65 mg of papaverine, 25 microg of phentolamine, and 0.5 microg of PGE1) in both castrated and control cats. In control animals, ADM, CGRP, nociceptin, VIP, SNP, and PGE1 induced penile erections similar to those elicited by the triple-drug combination. However, in castrated animals, there was a significant decrease in erectile response; the response to intracavernosal injection of the standard triple-drug combination in castrated cats was 28% of that of the control group of animals. Serum testosterone levels demonstrated a significant ( $P < 0.0001$ ) positive correlation ( $r = 0.52$ ) with intracavernosal pressure in response to the standard combination. A marked reduction in serum testosterone levels was observed in castrated cats when measured by radioimmunoassay (0.34 +/- 0.1 ng/dl in castrated cats, compared with 31.15 +/- 6 ng/dl in control cats). These data suggest that the presence of testosterone is a necessary prerequisite to sustain a pharmacologically induced penile erection in the cat.

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