

AS6.

**EFFECT OF ANGIOTENSIN CONVERTING ENZYME INHIBITOR
CAPTOPRIL ON REPRODUCTION IN THE MALE RAT**

V.K. GUNAWARDANA, N. ATHURELIYA*, M. NAVARATNAM AND
M.A. NAVARATNE

*Department of Preclinical Studies, Faculty of Veterinary Medicine and Animal Science
and *Department of Pharmacology, Faculty of Medicine, University of Peradeniya,
Sri Lanka*

Angiotensin Converting Enzyme (ACE) activity is reported to be present in the male reproductive tract particularly in epididymal spermatozoa and in the epithelial cells lining the epididymal duct in the rat. Certain antifertility compounds which affect sperm motility are known to be potent ACE inhibitors and it may be hypothesised that inhibition of this enzyme leads to loss of sperm motility. This hypothesis was tested using Captopril, a drug widely used in the treatment of hypertension. This paper reports some of the results obtained in this investigation.

Sprague-Dawley rats of proven fertility were used in this study. Captopril suspended in gum acasia was administered twice daily to ten rats at a dose of 40 mg/kg/day for a period of 10 weeks. A group of ten males receiving equivalent amounts of gum acasia only served as controls. Each male was then paired with a proven proestrus female. Mating was confirmed by the presence of sperm in the vaginal smear of the female. Mated males were subjected to autopsy. If mating had not occurred another proestrus female was introduced 2-4 days later. Each male was provided at least three opportunities for achieving successful mating, and autopsies were carried out thereafter. Dosing continued until the day of autopsy. Mated females were subjected to autopsy on day 16 of pregnancy. At autopsy, the epididymis was separated from the testis and the organs were weighed separately. Spermatozoa from the cauda epididymis were examined for motility and morphology. The epididymal sperm concentration was determined using a haemocytometer.

The results showed that mating occurred only in four of the ten animals treated with Captopril compared to nine animals in the control group. The number of foetuses carried by the four pregnant animals were within acceptable limits. There was no significant difference in organ weights or epididymal sperm concentrations between treated and control groups. Morphological abnormalities in spermatozoa were minimal in both groups. However, there was a marginally significant difference in the motility between treated and control groups when the two groups were compared using the unpaired t-test. The percentage motility (mean± sd) was 40.5±31.3 and 65±24.1 respectively for the treated and control groups. The sperm motility of the four animals which mated successfully in the treated group was 30%, 40%, 70% and 80%. The sperm motility of animals which did not mate ranged from zero to 70%. The results suggest that Captopril suppresses libido in the male rat and possibly sperm motility.