



## *ANDROCTONUS CRASSICAUDA* (OLIVIER), A DANGEROUS AND UNDULY NEGLECTED SCORPION—I. PHARMACOLOGICAL AND CLINICAL STUDIES

M. ISMAIL, M. A. ABD-ELSALAM and M. S. AL-AHAIDIB

The Antivenom and Vaccine Production Center, King Fahad National Guard Hospital,  
P.O. Box 22490, Riyadh 11426, Saudi Arabia

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M. ISMAIL, M. A. ABD-ELSALAM and M. S. AL-AHAIDIB. *Androctonus crassicauda* (Olivier), a dangerous and unduly neglected scorpion—I. Pharmacological and clinical studies. *Toxicol* 32, 1599-1618, 1994.—*Androctonus crassicauda* venom has an i.v. LD<sub>50</sub> in mice of  $0.32 \pm 0.02$  mg/kg, which makes the scorpion among the most toxic species in the world. Fifty-one non-fatal and one fatal cases of scorpion sting were presented. Pain and tenderness were very common following the sting. Generalized erythema occurred in 20-25% of all infants and children below the age of 5 years. Severe CNS manifestations including seizures, unconsciousness and marked irritability occurred mainly in infants and young children, while hypertension occurred in the majority of victims below the age of 11 years. Two pregnant victims were treated with antivenom with no bad consequences on mothers or foetuses. The fatal case described was inadequately treated with antivenom and presented a rare situation of intracranial coagulation in the basal cisterns or low in the cranial subarachnoid space. The victim developed moderate hydrocephalus of the communicating type with clear ventricular CSF and strongly xanthochromic fluid from lumbar puncture. The effects of *A. crassicauda* venom on isolated hearts, atria and anaesthetized rat blood pressure appeared to be mediated largely through stimulation of the autonomic nervous system with predominance of sympathetic stimulation and release of tissue catecholamines. Electrocardiograms recorded simultaneously with blood pressure changes showed evidence of ectopic foci during the hypertensive phase and ischaemia, inferior wall infarction and different degrees of heart block during the late hypotensive phase. *Androctonus crassicauda* venom was unique in following a three-compartment open model comprising a central compartment 'blood', a rapidly equilibrating 'shallow' tissue compartment and a slowly equilibrating 'deep' tissue compartment. The overall elimination half-life,  $t_{1/2\beta}$ , was 24 hr, indicating that the venom has the slowest elimination among all known scorpion venoms. The long stay of the venom in the body might explain the increased risk of toxicity and the good potential for treatment with serotherapy even hours after the sting.

### INTRODUCTION

THE SCORPION *Androctonus crassicauda* (Olivier) is widely distributed in Saudi Arabia and neighbouring countries. The scorpion is abundant in Iran (VACHON, 1966; HABIBI, 1971),