

## Guest editorial

### *Snake bites, spider bites and scorpion stings*

Bernd Rosenkranz, MD, PhD, FFPM

*Professor and Head, Division of Pharmacology, Department of Medicine, Stellenbosch University*

*Correspondence to:* Bernd Rosenkranz (rosenkranz@sun.ac.za)

*To mistake a rope for a snake  
Or to mistake a snake for a rope  
Is illusion in perception.*

Shanmugam Chettiar (1942)

Exposure of humans to natural toxins occurs via snake bites, spider bites and scorpion stings, or by plant or mushroom poisonings. According to the WHO ([http://www.who.int/neglected\\_diseases/diseases/snakebites/en/](http://www.who.int/neglected_diseases/diseases/snakebites/en/)), envenoming is in fact one of the neglected tropical diseases and forms a particularly important public health problem in tropical and subtropical countries. A recent study estimated that at least 421 000 envenomings and 20 000 deaths occur worldwide from snake bites each year, although these figures may be even higher. The highest burden of snake bites is in South Asia, Southeast Asia, and sub-Saharan Africa; the incidence of snake bites in Africa has been estimated to be around 100 - 400 bites per 100 000 people. Snake bite is primarily a problem of the poorer rural populations. According to the WHO, poor access to appropriately equipped and trained health services in these settings often leads to poor outcomes and considerable morbidity and mortality. Many victims fail to reach hospital in time or seek medical care after a considerable delay. Some of the victims survive with permanent damage due to local tissue necrosis and sometimes suffer from psychological problems for a long time. Most victims are young, and the economic

impact of biological envenomations can be considerable.

For medical personnel to provide optimal patient management, they must be familiar with the clinical picture and with current treatment protocols. Rapid establishment of the correct diagnosis and appropriate patient handling are crucial to reduce patient morbidity and mortality. For example, as outlined in detail in the current CME issue, although most local scorpions are relatively harmless, a small number of scorpion species can cause life-threatening systemic envenoming. Patients with unexplained local tissue injury or dermal necrosis are often misdiagnosed with necrotic arachnidism, resulting in inappropriate treatments or even incorrect reports in local newspapers leading to misperceptions about spider bites. Management of patients with snake envenomings will depend on the particular clinical syndrome. In particular, neurotoxic snakes can cause life-threatening paralysis and death within 1 - 8 hours. Antivenoms are available for the management of boomslang, mamba, neurotoxic cobra, spitting cobra and major adder bites. Knowledge of the relevant facts will lead to high-quality management of such patients.

The Tygerberg Poison Information Centre (TPIC, tel +27 21-931 6129) is the main centre in South Africa assisting health care professionals and the lay public when confronted with snake bites or spider bites, scorpion stings or biological poisonings. The Centre receives calls from across the whole country (only 39% of the calls come from the local drainage area, the Western Cape), and 46% are related to children. Children are especially vulnerable to scorpion stings, with a mortality rate of close to 20%. Of all 5 527 cases dealt with in 2011 by the TPIC, 9% were related to envenomations and other biological exposures.

Following two toxicology issues of CME about acute poisonings presented in 1995 and 2003, the current CME issue offers the opportunity to doctors and other healthcare professionals to update their knowledge about management of patients exposed to the most important biological toxins. It can only be wished that this educational module prepared by Dr Gerbus Müller, founder and former Director of the TPIC, a recognised expert in natural toxins and consultant to the WHO, together with the staff of the TPIC, will lead to even better management of such patients and ultimately to better outcomes.