ADULT SNAKEBITE PATIENTS ADMITTED TO A TERTIARY CARE CENTRE IN RURAL SRI LANKA: A COHORT STUDY

Anjana Silva MD[1]; Kalana Maduwage[3], Sisira Siribaddana[2], Geoffrey K. Isbister[3]

[1] *Monash Venom Group, Department of Pharmacology, Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Australia*

[2] *Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka, Saliyapura, Sri Lanka.*

[3] *Clinical Toxicology Research Group, Department of Pharmacology, Faculty of Health and Medicine, University of Newcastle, Australia.*

Objective: Cohort studies with proper case authentication areof considerablevalue in understanding the clinico-epidemiology of snakebites.The objective of this study is to describe a cohort of authenticated snakebite patients treated in a tertiary care centrein Sri Lanka.

Methods: Patients aged 16 or more admitted to the Teaching Hospital, Anuradhapura, Sri Lanka (North Central Province) following snakebites during September 2013 to October 2014, were enrolled. Cases were authenticated by positive identification of the offending snake specimen or by venom specific enzyme-immunoassay ofpatients' blood samples or both .The following data was recorded: demographic information, clinical effects and laboratory investigations including the presence or absence of neurotoxicity, coagulopathy, local effects and acute kidney injury, treatment, complications and disposition (length of stay, intensive care admission).

Results: Of 1032 suspected snakebites, 773 were confirmed as definite snakebites (direct admissions, 224(29%); males: 475 (61%); median age: 40 (range: 16-89)y).Patients reached either a primary care centre or the study hospital a median of 30min post-bite(10min – 16h). There were 455 authenticated cases:226 Russell's viper (*Daboia russelli*: RV) bites; 149 Merrem's Hump-nosed viper (*Hypnale hypnale*: HNV) bites33 Indian Krait (*Bungarus caeruleus*: IK) bites, 7 Common Cobra (*Naja naja*: CBR) bites, one Green-pit viper (*Trimerusurus trigonocephalus*: GPV) bite, 5 Cat snakes (*Boiga trigonata*and *B. ceylonensis*: CS); 34 non-venomous colubridsand 318 unidentified (UID). Wolf snakes (*Lycodonaulicus* and *L.osmanhilli*) bites (10 patients) were the commonest among 34 non-venomous snake bites. Local envenoming was evident in 570 (74%) patients (RV: 218; HNV: 144; CBR: 6; IK: 20; CS:1, UID:181). Coagulopathy, as diagnosed with a prolonged whole blood clotting time, INR or clinically detectable local or systemic bleeding was present in 216 (28%)patients (RV,167; HNV,7; UID, 44). Neuromuscular paralysis was seen in 144 patients (RV: 118; IK: 25; CBR: 1) of which 17 required mechanical ventilation (all IK). Acute renal failure requiring dialysis was reported in 13 patients (RV: 12; HNV:1). Of the 773 patients,262received 10 (8% patients) or 20 (92% patients) vials in the study hospital at a mean 445 (range: 1 – 1:45) after the bite, to which 139 developed acute adverse reactions (45% Brown Grading III).Adverse reactions were clearly high in number and severity in some antivenom batches. Patients spent a mean 2 (range: 1-33) days in hospital and 6 deaths were reported, all being RV bite victims.

Conclusion: Snakebite continues to be a major health hazard in Rural areas in Sri LankaSevere systemic envenoming and high rates of antivenom reactions remain challenges, despite patients reach hospitals early.