

Oral Abstracts

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CLINICAL SPECTRUM OF SNAKE ENVENOMATION IN TAMIL NADU : THE IMPORTANCE OF RUSSELL'S VIPER ENVENOMATION

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Objectives: Viperidae bites are the predominant cause of snake envenomation in South India and Russell's viper bite leads to high rate of complications. We aimed to prospectively document the clinical syndromes, complications, ASV requirements and allergy/anaphylaxis with focus on Viper bite syndromes.

Methods: Prospective clinical study; Snake bite, age > 15 years presenting to CMC, Vellore over 2 years (2014-16). Patients observed daily till discharge/death. Description of clinical syndrome, complications, ASV requirement and allergy/anaphylaxis. Envenomation Syndromes: Viper-Haemotoxic syndrome; Probable Russell's viper -combinations of haemotoxicity with neurotoxicity and/or acute kidney injury (AKI); Cobra bite- Neurotoxicity with local swelling; Krait bite- Neurotoxicity without local swelling.

Results: Background: total 167 patients; median age- 38 years (15-68); Two thirds males; 75.59% (n=126) referred cases with prior ASV treatment. Snake species identified in 13 cases (7.78%) (Daboiaruselii -4, Echiscarinatus- 2, Najanaja- 3, Bungarus caeruleus-2. Biting species correlated to above syndromes.

Distribution of Envenomation syndromes (Table 1).

127 (76.05%) had viper bite syndrome and 30 (17.97%) Elapidae syndromes. Of the viper bites 101 (79.53%) had probable Russell's viper envenomation. 10 (5.99%) patients had only local envenomation.

Differences in neuroparalysis spectrum (Table 2)

Ptosis and ophthalmoplegia occurred in the majority of both Russell's viper envenomation and Elapidae syndromes. Russell's viper envenomation syndrome was associated with lower frequency of bulbar, respiratory and limb weakness and shorter duration of paralysis.

Venom induced consumptive coagulopathy (VICC) requiring blood transfusion -Among patients with VICC (n=97), 4 patients (21.05 %) with pure hemotoxic syndrome and 39 patients (51.32%) with probable Russell's viper syndrome required blood transfusion.

AKI requiring dialysis

Of the probable Russell's viper envenomation (n=101), 60 (59.4 %) developed AKI and 34 (33.7%) required dialysis.

Mortality

All the 5 deaths (mortality rate -2.99%) had probable Russell's viper envenomation.

ASV requirement

Median ASV requirement: Pure haemotoxicity-14 vials (9-30); ProbableRussells viper envenomation- 18 vials (0-44); Elapidae bites- 12 vials (5-32).

ASV hypersensitivity

54 patients had ASV hypersensitivity (33.54%). Itching- 52 (94.54%); urticaria-41(74.55%); bronchospasm 20 (36.36%) and anaphylaxis 16 (29.09%).

Conclusion:

1. Russell's viper envenomation syndrome is the most frequent and important cause of morbidity and mortality in snake envenomation in Tamil Nadu.
2. Neuroparalysis with Russells' viper envenomation is shorter with lower frequency of bulbar paralysis, respiratory and limb weakness .
3. Russell's viper envenomation is associated with high rate of requirement of blood product transfusion and haemodialysis and increased antivenom dose suggesting relative inefficacy of ASV.

Table 1- Distribution of Envenomation syndromes

Envenomation syndromes	n (%)
Pure haemotoxicity	26 (15.57%)
Haemotoxicity with AKI (No neuroparalysis)	15 (8.98%)
Haemotoxicity with neuroparalysis (No AKI)	44 (26.34%)
Haemotoxicity with neuroparalysis and acute kidney injury	42 (25.15%)
Neurotoxicity with local reaction	18 (10.78%)
Pure neurotoxicity without local reaction	12 (7.19%)

Table 2- Differences in neuroparalysis spectrum

Pattern of neurotoxicity	Probable Russell's viper syndrome (Haemotoxicity + Neurotoxicity)		Probable Krait bite (Pure neuroparalysis)		Probable Cobra Bite (Neuroparalysis +local swelling)	
	n (%)	Median duration	n (%)	Median duration	n (%)	Median duration
Ptosis	81 (98.78%)	3 days	12 (100%)	3 days	17 (94.4%)	2 days
Ophthalmoplegia	63 (76.82%)	4 days	10 (83.3%)	4 days	13 (72.2%)	3 days
Bulbar muscle weakness	26 (31.71%)	2 days	6 (50%)	3 days	7 (38.9%)	2 days
Respiratory muscle weakness	23 (28.05%)	Not assessed	8 (66.67%)	Not assessed	7 (38.9%)	Not assessed
Limb weakness	5 (6.1%)	2 days	4 (33.33%)	3 days	4 (22.2%)	1 day