

Cyclone Nargis: Myanmar - Snakebite Emergency Management

Key Medically Significant Species: Russell's viper (85% of bites) (Haemotoxic + shock + renal failure), Green Pit Vipers (Haemotoxic), Monocled Cobra, Kraits (Neurotoxic)

First Aid:

No tourniquets, cutting and or sucking.

Reassure the patient, Immobilise whole patient especially the bitten limb, **Get to Hospital fast**, Tell the doctor about signs such as bleeding, shock or drooping eyelids that develop on way to hospital.

Treatment: Assess Patient for at least 24 hours

Give antivenom (AV) ONLY if:

1. Incoagulable blood measured by 20 Minute Whole Blood Clotting Test (20WBCT) in NEW, CLEAN, DRY, GLASS test tube or vessel (see below).
2. Low blood pressure (less than 90 mmHg systolic) and/or shock. With lyophilised antivenom the reconstitution time will enable 20WBCT to be available.
3. **Visible neurological signs such as ptosis/ respiratory impairment**

AV Initial Dose:

1. Incoagulable blood 4 vials Myanmar* Anti-Viper, Russell's Viper AV over 1 hour
2. Neurotoxic signs 6 vials Myanmar* Bivalent *Daboia russelii*, *Naja kaouthia* AV over 1 hour

Myanmar Pharmaceutical Factory: Anti-Viper AV is effective ONLY for Russell's viper; Bivalent AV is effective ONLY for cobra. If not available, Thai monovalent Russell's viper (Initial Dose 5 vials) and Cobra (Initial Dose 10 vials) antivenoms may be used. Indian polyvalent antivenoms are NOT effective.

Anaphylactic Reaction to AV

0.5 mg Adrenaline IM (Adults); 0.01mg/kg (juveniles) thigh muscle
Wait 10-15 minutes if symptoms not improved repeat same dose

Support with 100mg Hydrocortisone and H1 Antihistamine

One or two doses of adrenaline will solve problem, then AV is restarted.

If Neurotoxic:

Measure single breath count i.e. ask patient to count aloud for the duration of one breath and record the number reached.

0.6 mg atropine given IV FOLLOWED BY 1.5 mg neostigmine given IM,
Repeat single breath count every 10 minutes for 1 hour. If it improves, give atropine as required followed by 0.5mg neostigmine every 30 minutes until recovery, if no improvement, stop atropine and neostigmine.

Monitor patient for 1-2 hours, if symptoms do not improve, or worsen i.e. paralysis descends repeat dose of 6 vials of AV. **Maximum 12 vials.**
If patient is unable to raise the head and shoulders off the bed, prepare for respiratory support with assisted ventilation by endotracheal tube, asopharyngeal mask airway or tight fitting face mask.

If the patient is to be transported to another hospital for mechanical ventilation then use a resuscitation bag and, if available, improvise nasopharyngeal airways with size 5 rubber endotracheal tubes cut to the length of the distance between the nostril and the tragus. These will not trigger the gagging reflex and will provide more effective ventilation with flaccid paralysis.

If Haemotoxic: Monitor coagulation every 6 hours and repeat dose of 4 vials until blood becomes coagulable **Maximum 8 vials**

20WBCT is essential and measurement of haemoglobin concentration or haematocrit are important to detect occult bleeding and careful monitoring of urine output and measurement of blood urea/creatinine and potassium are important as renal failure is a high risk. If possible, move patient to a hospital with lab facilities and/or renal support after first dose of ASV.

If severely hypotensive, give fluid/ blood transfusion after first dose of ASV.

20 minute whole blood clotting test (20WBCT)

1. Place a few mls of freshly sampled venous blood in a small glass vessel.
2. Leave undisturbed for 20 minutes at ambient temperature
3. Tip the vessel once
4. If the blood is still liquid (unclotted) and runs out, the patient has incoagulable blood. In the South East Asian region, incoagulable blood is diagnostic of a viper bite and rules out an elapid bite

Warning! If the vessel used for the test is not made of ordinary glass, or if it has been used before and cleaned with detergent, or is wet, its wall may not stimulate clotting of the blood sample in the usual way and test will be invalid

If there is any doubt, repeat the test in duplicate, including a "control" (blood from a healthy person).