First aid

Snakebite is a serious medical urgency that can be fatal.

The only valid advice is to transport the patient to a health facility as fast as possible, where she/he will be medically evaluated and treated.

Do not waste time!

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Société Africaine de Venimologie

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African Society of Venimology

Snakebite treatment

Africa & Middle East

SNAKEBITE TREATMENT IN AFRICA & MIDDLE EAST

CONFIRM & EVALUATE THE ENVENOMATION

In a person reporting a snakebite:

a) Reassure the patient and his relatives and ask them the time and date of the bite (important for judging the speed of developing symptoms). Ask about any traditional/pre-hospital treatment before arriving at the hospital (could be the cause of some alarming symptoms not actually caused by snake venom).

b) Clean the bite very gently and look for fang marks.

c) Proceed to a complete medical examination to assess gravity.

Determine signs of stress:
Nausea, vomiting, palpitations, tachypnea.

Perform: Whole Blood Clotting Test (WBCT) as the patient is assessed: Collect 2ml of venous blood in a clean, dry new glass test tube and let it rest for 20 min and read result: (Complete Coagulation - Stage 0, Partial Coagulation - Stage 1, Incoagulable blood – Stage 2, hemorrhagic risk).

GRADES OF ENVENOMATION:

- Important pain at the site of the bite.

Edema graduation:

1. Localized edema affecting the closest joint (Wrist or Ankle).
2. Progressive edema not exceeding 2 joints.
3. Extensive edema not going beyond the limb (Upper or Lower).
4. Edema exceeding the limb onto the body.

Local or generalized bleeding graduation:

1. Persistent local bleeding lasting for more than one hour.
2. Bleeding in the mouth, the nose or scars.
3. Ecchymosis, bruises, purpura.
4. Internal bleedings (renal, peritoneal, meningeal).

Neurological disorders graduation:

1. Anesthesia, tingling, local itches.
2. Drooping eyelids, visual, hearing and swallowing disorders.
3. Increased production of saliva and sweating, vomiting, myosis.
4. Respiratory distress syndrome, inability to talk.

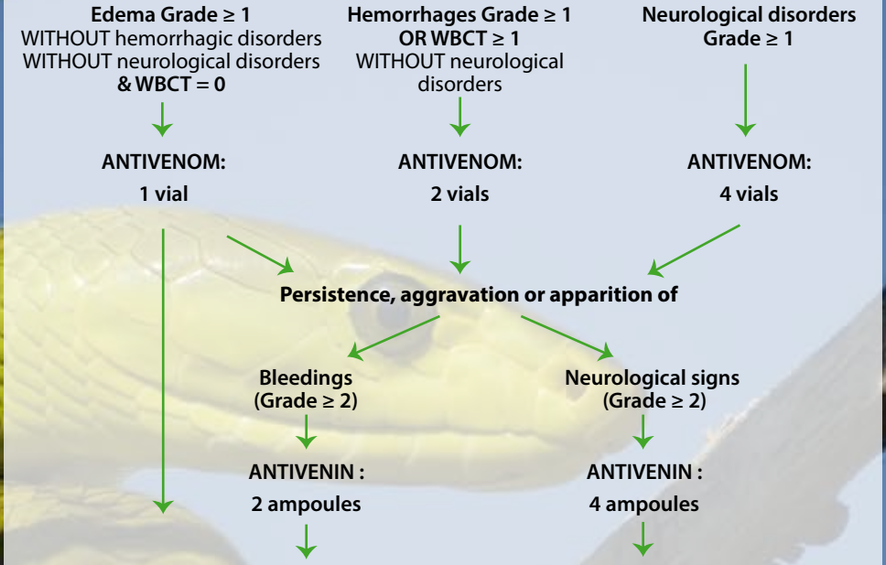
Necrosis (Measure regularly). This may have been caused by early dangerous first aid and delay in patient arrival at the hospital.

All signs mentioned above confirm the gravity of the bite and represent a vital urgency, which must be immediately taken care of. It is essential to measure the grades of envenomation from the time of the bite in order to have a good treatment plan.

Important Investigations:
Complete Blood Count, Platelets, Prothrombin, Fibrinogen, D-dimers, Creatine Phosphokinase, Creatinine levels

CARE & TREATMENT

A. ANTIVENOM (from le grade 1)
The antivenom is always administered intravenously; either in drip (diluted in 1/10) during 30 minutes, or by direct push over 3 minutes for every 10 ml.



Patient may be discharge 48 hours after bleedings and neurological disorders stop

Warn the patients with neurological disorders that temporary drops in blood pressure may occur over a few days so they are advised not to undertake any heavy work including driving riding or climbing

Caution *on the vulnerability and speed of evolution of symptoms in children and pregnant women.*

B. Symptomatic treatment (related to antivenom)
According to the available means and knowledge of medical staff:

- **Pain:** Paracetamol, codeine, tramadol, morphine derivatives.
- **Edema:** Elevation.
- **Bleeding:** Replacement therapies (transfusion, freshly frozen plasma, etc.) should be administered as soon as required depending on availability.
- **Neurotoxicity (reserved to an emergency physician or a resuscitator)** :
  - ***Muscarinic syndrome*** (neurological grade 2) for mamba bites atropine (10 mg intravenously, then 1 mg in subcutaneous injection every 5 minutes until the myosis disappears).
  - ***Cobraic syndrome*** (neurological grade 3 or 4) atropine (1 mg intravenously) + néostigmine (3 doses of 2,5 mg in intravenous injection every 30 minutes).
- **Necrosis:** Diameter must be regularly measured – Clean daily with antiseptic solution.

In case of adverse reactions in the treatment:

- Pruritus, urticaria, rash, cough,
- Anaphylactic shock = Adrenalin.

Antibiotics should only be administered in case of established infection.

Corticoids are not recommended.

SURVEILLANCE:

A. Surveillance of antivenom administration
For hour after the administration of the antivenom, it is necessary to watch the patient:

- To detect unwanted effects,
- To follow the clinical evolution.

Surveillance check-up will be made: 1 hour, 3 hours, 6 hours, 12 hours, 24 hours, then every 24 hours after the first treatment.

Watch the renal function (diuresis + creatinine).

The decision to repeat the antivenom will be taken in case of:

1. **Persistence or onset of bleedings events**
   Repeat the antivenom treatment with ⟶ 2 vials
2. **Persistence or onset of neurological signs**
   Repeat the antivenom treatment with ⟶ 4 vials

B. Surgical treatment
Avoid if possible any surgical operation that may cause superinfections and functional complications.

- In case of severe edema, it is imperative to measure the intracompartmental pressure to estimate the risk of a compartment syndrome (the intramuscular pressure should be at least 10 mm of mercury under the diastolic blood pressure) and only after a satisfactory WBCT test before making a relieving incision.

- For necrosis debridement or amputation: only after stabilizing lesions (absence of extension during 48 consecutive hours).

C. Surveillance after discharge
It is important to warn the patient that in 1 – 2 after the antivenom he/she may have serum sickness (fever, arthralgias, myalgias, urticaria, adenopathies) handled by an antihistamine or a non-steroid anti-inflammatory medication (steroids for serious forms).

The wound will be looked after until healing.

The complications will be treated according to the gravity.

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