Snakebite Assessment, Diagnosis, & Treatment Pyramid

**1st Patient Assessment (Physical Exam, Clinical Exams, Patient History)**
- **Physical Examination:** Look for local and systemic signs of neuro muscular impairment, abnormal bleeding, and soft tissue damage (i.e. oedema, pain, necrosis, blistering, lymphadenopathy, etc).
- **Clinical Examinations:** Laboratory/diagnostic exams; at minimum a whole blood coagulation test (WBCT20) should be taken from all snakebite patients in sub-Saharan Africa. Place all patients without S/S, of envenomation under observation for the first 24 hours after the bite. Repeat 1st assessment during observation and proceed accordingly if S/S develop; if patient remains asymptomatic discharge after 24 hours with anti-tetanus toxoid.

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**Local Oedema < Grade 3**
1st Treatment:
- No antivenom if oedema < 1/2 of the bitten limb
- If confirmed Puff Adder bite to finger or small child, 1x amp of appropriate polyvalent antivenom is generally sufficient

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**Extensive Oedema > Grade 3**
1st Treatment:
- 2x ampoules of appropriate polyvalent/ trivalent antivenom covering Rits and Spitting Cobras

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**Coagulopathy (DIC)/Bleeding**
1st Treatment:
- *Echis:* 2x ampoules polyvalent **OR** 1x ampoule monovalent/trivalent
- *Dyspholidus:* 1x amp monovalent
- *Unknown species T:* For *Echis/Bitis* Repeal at antivenom administration every 3rd hour after treatment only if confirmed ext/int. bleeding persists

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**Progressive Neurotoxicity**
1st Treatment:
- If species unidentified then treat with initial dose 3x – 4x ampoules of polyvalent antivenom effective against Noja/Dendroaspis species in your location (see manual).
- Neostigmine + Atropine may temporarily reverse symptoms and gain time for antivenom to take effect

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**Venom Ophthalmia**
1st Treatment:
- Antivenom is not indicated for ocular envenomation.
- Irrigate with copious amounts of water normal saline as for a chemical exposure. Analgesia drops may facilitate this procedure.

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**S/S, of Venom Ophthalmia**
Recent Hx of Ocular Envenomation AND No Findings Suggestive of Snakebite Envenomation in 1st Assessment

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**Syndrome = Coagulopathy/Bleeding**
- Coagulopathy and/or Abnormal Bleeding (external or internal)
  - Early Stages Can Present Without obvious external Hemorrhage /Late with severe internal hemorrhage

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**Syndrome = Neurotoxic Characterized by Progression of S/S**
- Curare-like [Cobra] and Muscarinic [Mamba] Syndromes Converge at Posis/Cranial Nerve Paralysis and Descending Paralysis

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**Symptoms & Signs**
- Pain, Conjunctivitis, Local Inflammation and Discharge, Photosensitivity
- Not limited to spitting cobra as venom can project during strikes.

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**Clinical Severity Score (Oedema/Bleeding)**

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**Primary (Antivenom)**

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**Secondary (2a Treatments)**
- Cornal erosion possible
- Fluorescein stain slit lamp exam
- Antibiotic drops if needed

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**Assess for clinical anemia/intestinal bleeding (Subarachnoid, abdominal)**
- Transfuse if HCT < 18% (ideally 1h before serum to prevent consumption of clotting factors by circulating venom)
- Suspected Cerebral hemorrhage – Diuretics, Ice, Elevation, Analgesics
- ABC’s: Prepare for airway control/manual ventilation
  - Bag-valve mask (ambu), Oxygen, airway adjuncts
  - Neostigmine + Atropine may temporarily reverse symptoms and gain time for antivenom to take effect