

## SNAKE VENOM ANTISERUM IP

10 mL Liquid / Lyophilised  
(Polyvalent, enzyme refined,  
equine antivenom immunoglobulin fragments)

### Description

Snake Venom Antiserum is a sterile preparation containing equine immunoglobulin fragments F(ab')<sub>2</sub>. The antivenom is supplied in liquid as well as freeze dried form.

Each mL has capacity of specifically neutralizing the venom of the following species of Snake.

0.60 mg of dried *Indian Cobra (Naja naja)* venom

0.45 mg of dried *Common Krait (Bungarus Caeruleus)* Venom

0.60 mg of dried *Russell's viper (Daboia russelii)* venom

0.45 mg of dried *Saw-scaled viper (Echis carinatus)* venom

The antitoxic equine Immunoglobulin fragments and their derivatives are obtained from the serum of healthy equines immunized against venoms of the above species of snakes.

### Reconstitution of Lyophilised Antiserum

The antivenin is supplied in liquid as well as freeze dried form. The freeze dried powder is reconstituted with 10mL of Sterile Water for Injections IP which is supplied with this pack. The whole container of freeze dried powder dissolves into a clear colourless or pale yellow liquid.

### Administration and Dosage

Reconstituted antivenom / liquid antivenom is administered as soon as possible if clear-cut signs/symptoms of envenomation are evident. It can be administered in two ways:

- 1 Intravenous injections: Reconstituted antivenin is administered by slow intravenous injection (1-2mL/minute).
- 2 Infusion: Reconstituted antivenin is diluted in isotonic saline or glucose solution, 5-10ml/Kg of body weight.

At present there is no simple method to measure the amount of circulating venom in the body, therefore the antivenin dose cannot be accurately recommended. The dose also depends on the type of snake bite and severity of envenomation. In consideration to the requirement of venom neutralization fast, two vials are usually injected directly by I.V. route slowly i.e. 1-2mL/minute (taking care of sensitivity reaction). Two more vials are given after half an hour to one hour, if the symptoms of envenomation persists. This way patient should be given doses (further dose can be given with Intravenous fluid) till the envenomation symptoms subside.

The patient should be closely monitored for 2 hours. Local administration of antivenin in or around the bite site is ineffective, painful and may raise intra compartmental pressure, particularly in the digits, hence it is not recommended.

### Snakebite manifestations

In case of bite by Cobra or Krait, there is creeping paralysis of muscles of eyelids, staggering gait, difficulty in speaking, blurred vision and dropping of head, accompanied by nausea and vomiting. These symptoms are due to the predominance of neurotoxins. Death may result within minutes or several hours due to respiratory failure. In case of Russell's viper and Saw scaled viper, Paralytic manifestations are uncommon (though they have occasionally been reported with Russell's viper). The usual manifestations comprise persistent pain and swelling of the bitten limb with oozing of blood from the bite site. There may be blister formation and necrosis. This is followed by generalized vascular injury with severe external and internal haemorrhage. Vomiting may occur. Death usually results from cardiovascular shock or renal failure.

### Antivenin Reactions

Anaphylaxis is life-threatening, but if the correct protocol is followed, it can be effectively treated and dealt with. Anaphylaxis can be of rapid onset and can deteriorate into a life-threatening emergency very quickly. The patient should be monitored closely and at the first sign of any of the following, antivenin should be discontinued, and 0.5 mg of 1:1000 adrenaline must be administered intramuscularly; urticaria, itching, fever, chills or rigor, nausea, vomiting, diarrhea, abdominal cramps, tachycardia, hypotension, bronchospasm and angioedema. Children must be given 0.01 mg/kg body weight of adrenaline I.M.

In addition, to provide longer term protection against anaphylactic reaction, 100 mg of hydrocortisone and 10 mg of H1 antihistamine can be given I.V. The dose for children is 0.2 mg/Kg of antihistamine I.V. and 2mg/Kg of hydrocortisone. I.V.

If after 10 to 15 minutes, the patient's condition has not improved, or if the condition is worsening, a second dose of 0.5 mg of adrenaline 1:1000 I.M. may be given. In the vast majority of cases, no more doses will be required. If there is hypotension or haemodynamic instability I.V. fluids should be given.

Once the patient has recovered, the antivenom can be restarted slowly for 10-15 minutes keeping the patient under close observation. Then the normal drip rate can be resumed. Serum sickness reactions sometimes may occur. But these usually take a few days to a week, and can be easily treated with oral antihistamines and corticosteroids (for ex. prednisolone - adults 5 mg 6 hourly; child 0.7 mg/Kg/day).

### Associated Treatment

Snake bite can cause moderate to severe pain at the bite site. This normally responds well to paracetamol. Aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) should not be

administered, as they can exacerbate bleeding. Mild opiates (such as tramadol 50 mg) can be administered, for severe pain. Neostigmine is an anticholinesterase drug, which prolongs the action of acetylcholine, there by reversing respiratory failure and neurotoxic symptoms. It is particularly effective in post-synaptic neurotoxins such as those of the Cobra.

### Recommended dose

0.5 mg intramuscularly, half hourly, together with 0.6 mg of atropine I.V. over an 8 hour period by continuous infusion. If there is no improvement in symptoms after one hour, neostigmine therapy should be stopped. Renal failure may require dialysis therapy.

### Storage of Lyophilised vial

Store the lyophilised vial "Below 25°C". Reconstituted liquid should neither be stored for long nor should be allowed to freeze.

### Storage of Liquid vial

Store the liquid vial between 2<sup>o</sup> to 8°C.

### Presentation

Snake venom antiserum I.P. is supplied as freeze dried powder in a glass vial. Sterile Water for Injections I.P. is supplied in 10 mL container. The antivenom is also supplied as 10mL liquid in a glass vials.

### Disposal

Left over antiserum and used empty vials should be discarded as a biomedical waste.



Manufactured by:

**VINS BIOPRODUCTS LIMITED**

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