

Role of Neostigmine and Polyvalent Antivenin in Common Krait (*Bungarus Caeruleus*) Bite

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Introduction : Common krait bite is common in the plains of North West India. Neostigmine has been shown to be beneficial in postsynaptic neuroparalytic snakebite. However its role is not clear in pre synaptic common krait bite. **Aims and Objectives :** To find the effectiveness of neostigmine and polyvalent antivenin in improving neuromuscular weakness following common krait bite. **Methods :** All consecutive patients with common krait bite admitted to the Emergency Department of Nehru hospital attached to the Postgraduate Institute of Medical Education and Research from July 2007 to December 2008 were included in the study. Patients were confirmed to have been bitten by Common krait; either by identifying the dead snake (9 patients) or by morphological description of snake provided by victim and circumstantial evidence (45 patients). The mean time interval between bite and arrival to hospital was 4.5 hours (range 0.5 -10) hours. All patients with signs of envenoming were given 10 vials of polyvalent antivenin over 1 hour. In 10 patients a second dose of 10 vials of antivenin was administered. They were also administered 3 doses of 2.5 mg neostigmine at 30 min intervals after administration of 0.6 mg of atropine. They were assessed for any improvement in neuroparalytic features (ptosis, neck muscle, weakness, respiratory muscle) at 10 and 20 minutes after each neostigmine administration. **Results :** During the study period, 73 patients were admitted with snakebite of which 54 were identified to have been bitten by common krait. Their mean age was 30.2+9.3 (15-60) years in males and 29.4+9.0(range 16-65) years with males being bitten more commonly (M:F=2:1). The bites occurred between June to September only. All the patients except 2 came from rural areas. In 43 the time of bite was generally during the night (11pm-5am) while patients were sleeping. Eleven, however were bitten while clearing bricks, cutting grass etc. All these patients showed no improvement following administration of neostigmine and developed respiratory paralysis, requiring assisted ventilation (mean +SD 39.5+19.87 (range 8-96) hours. Fifty-two survived and 2 died. The cause of death was irreversible brain damage before assisted ventilation could be initiated. **Conclusion :** Polyvalent antivenin in the dose of 10-20 vials would likely have neutralized free flowing venom. However it is possible that as it was not administered soon after the bite and it could not neutralize all the venom completely but reduced toxicity by neutralizing free flowing venom and preventing further vesicle damage. However neostigmine showed no beneficial effect against the pre synaptic symptoms of the north west Indian common krait (*Bungarus Caeruleus*).