

Antisnake Venom in a Neonate with Snake bite

GEETANJALI JINDAL, VIDUSHI MAHAJAN AND VEENA R PARMAR

From the Department of Pediatrics, Government Medical College, Sector 32, Chandigarh, India.

Correspondence to:

*Dr Geetanjali Jindal, # 1203,
Sector 32-B (GMCH, Doctor's
complex), Chandigarh, India,
geetanjali_jindal@yahoo.com*

Received: February 10, 2009;

Initial review: February 26, 2009;

Accepted: March 6, 2009.

There is no report of the use of antisnake venom (ASV) in the neonatal age group in literature. We report a 27 days old female neonate who presented with neuroparalytic manifestations of snake bite and was treated successfully with ASV. A total of 50 vials (500 mL) of polyvalent antisnake venom were given as infusion in hourly aliquots of 50 mL, over 72 hours.

Key words: *Antisnake venom, Neonate, Neuroparalytic, Snake bite.*

Snakebite is a common medical emergency encountered in South Asia. In India alone, around 200,000 people every year are bitten by snakes, out of which 15,000 die. Annual incidence of snake bites in India is reported to be 0.16% with a mortality of 0.016% per year(1). Majority of snake bites (90%) occur in males aged 11-50 years(2). To the best of our knowledge, there is no published case report of snakebite in neonatal age group treated with ASV.

CASE REPORT

A 27 days-old female neonate was brought with inconsolable cry for 2 hours. Baby was sleeping on the bed with the parents when mother woke up due to some noise at 1.30 am and saw a black colored snake pass by. A drop of blood was noticed to ooze from left ear and the child had severe retching. There was no history of bleeding from any other site, abnormal movements or passage of dark colored urine or decreased urination.

On admission, heart rate was 140 beats per minute, respiratory rate - 60 breaths per minute, capillary filling time < 3 seconds, peripheral pulses well palpable, blood pressure of 74/40 mmHg and frothing was present. Systemic examination was normal. Child was admitted with the diagnosis of snake bite and started on supportive management.

Twenty minutes post-admission, child suddenly developed bradycardia, shallow breathing and cyanosis. Child was intubated and started on synchronized intermittent mandatory ventilation (Galileo, Hamilton Medical) with settings of PIP-22, PEEP-5, VR-40/min, FiO₂-0.5, Ti-0.4 sec. She required fluid resuscitation (normal saline 50 mL/kg) and inotropic support (dopamine at the rate of 10 mcg/kg/minute). Neurological examination revealed Glassgow coma scale (GCS) E₁M₁V₁, generalized hypotonia, power grade zero and absent deep tendon reflexes. Pupils were normal size and reacting to light. Doll's eye movement was present. Complete hemogram, renal function test and coagulogram (repeated twice) were within normal limits. Total of 500mL (50 vials) of polyvalent antisnake venom (Snake venom Antisera, Bharat Serums and Vaccines Limited) was given in aliquots of 50mL as infusion over 1 hour over 72 hours. Following administration of ASV, some flickering movements appeared after 24 hours. Child's spontaneous respiratory efforts returned in 48 hours. GCS improved to E4M5V5 and power grade became 4/5 in all the four limbs after approximately 72 hours of ASV. No untoward reaction was noticed till the end of infusion. Child was extubated by day 4. She was discharged in a satisfactory condition after 7 days. No neurological or developmental delay was observed after a follow up of 12 weeks.

DISCUSSION

Although snakebite has been observed to occur in all age groups, we have not encountered any case in the neonatal age group. Lack of guidelines regarding ASV use in neonatal age group and its dosing schedule were the problems in the management of this baby.

The clinical presentation of the baby fitted into severe neurotoxic ophitoxemia. ASV was started within 4 hours of bite(3). There are no clinical trials to determine the ideal dose but doses as high as 1400ml (140 vials) have been used in adults(4). Our baby required 50 vials of ASV for complete recovery. The reversal of respiratory and neuromuscular paralysis was used as the end point of antivenom therapy. Higher doses of ASV may be required in neonates because of severe envenomation due to small body size, inability to avoid the snake and failure to raise alarm(5). Anti-cholinesterases were not used in the present case; its role in neonates needs to be ascertained. As always, supportive management *viz* maintenance of airway, oxygenation and hemodynamic status formed the basis of successful outcome.

Contributors: GJ managed the case and did the literature search, VM prepared the draft of the manuscript, VRP edited and checked the final manuscript.

Funding: None.

Competing interests: None stated.

REFERENCES

1. Hati AK, Mandal M, De MK, Mukherjee H, Hati RN. Epidemiology of snake bite in the district of Burdwan, West Bengal. *J Indian Med Assoc* 1992; 90: 145-147.
2. Hansdak SG, Lallar KS, Pokharel P, Shyangwa P, Karki P, Koirala S. A clinico-epidemiological study of snake bite in Nepal. *Trop Doc* 1998; 28: 223-226.
3. Paul VK. Animal and insect bites. In: Singh M (Ed). *Medical Emergencies in Children*. 3rd ed. New Delh: Sagar Publications: 1993. p. 554-578.
4. Agrawal PN, Aggarwal AN, Gupta D, Behera D, Prabhakar S, Jindal SK. Management of respiratory failure in severe neuromuscular snake envenomation. *Neurol India* 2001; 49: 25-28.
5. Fritts TH, McCoid MJ, Haddock RL. Risks to infants on Guam from bites of the brown tree snake (*Boiga irregularis*). *Am J Trop Med Hyg* 1990; 42: 607-611.