FLORIDA'S POISON CONTROL CENTERS Tampa

FLORIDA POISON INFORMATION CENTER-TAMPA

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EASTERN CORAL SNAKE (*Micrurus fulvius fulvius*) TREATMENT RECOMMENDATIONS

BITES: Eastern Coral snakes are not aggressive and should be left alone. Bites usually occur from intentionally handling the snake.

VENOM CHARACTERISTICS:
Type: Neurotoxin **Venom Yield:** 2-12 mg **Venom LD50:** 1.3 mg/kg SC

Pathophysiology: Coral snake neurotoxins bind the neuromuscular junction nicotinic acetylcholine receptors at the muscle end plates, causing weakness progressing to flaccid paralysis. Less commonly other receptors may be affected causing hyperalgesia and autonomic instability. Bruising and bleeding at the site of the bite is NOT a feature of this venom.

CLINICAL SIGNS: Initial symptoms be delayed for 10-12 hours, but upon onset may progress rapidly.

Local findings: Punctures, abrasions or scratches (The absence of findings does not rule out envenomation) Eventually redness, pain and paresthesias may radiate proximally up the extremity.

Systemic:

Neurologic effects: (Bulbar Paralysis) Diplopia, Dysphagia, Ptosis, Dysphonia, Fasciculation of Tongue, Weakness, Delirium, and Seizures (more common in children)

Respiratory effects: Pharyngeal spasm, hyper-salivation, cyanosis, respiratory depression and respiratory paralysis

Estimated Dry Bite Rate: 40-50%

Mortality: Historically, up to 10-20% of untreated cases died.

TREATMENT:

1. Complete a detailed history of the bite circumstances. Circle the site of the bite. Venom extraction is not possible.
2. If the snake is available, confirm ID as Eastern Coral Snake (red and yellow bands touch, head is black with a yellow ring). Do not transport or attempt to capture it. A photo may be emailed to the Poison Center: floridapoisoncenter@tgh.org for identification. If the snake is not available, the Poison Center can assist in determining the degree of suspicion.
3. Determine if the patient has any allergies to horses, horse dander, or horse serum (antivenin is equine based).
4. Immediately initiate continuous cardiac monitoring, pulse oximetry and end-tidal CO2.

5. Establish an IV site and infuse normal saline or Lactated Ringers at a maintenance rate.
6. Keep patient NPO to avoid potential aspiration.
7. Give tetanus booster if indicated.
8. Routine laboratory studies are not helpful. Serial CPK levels may reflect myotoxic activity of the venom. Perform an arterial blood gas (ABG) immediately if any respiratory distress.
9. Consider serial peaks flow or negative inspiratory effort to monitor for respiratory compromise.
10. Intubate and ventilate aggressively for airway compromise or respiratory depression.
11. Avoid opioid pain medications and sedatives.
12. Antibiotics and steroids are not indicated.
13. Administer Coral Snake Antivenin as soon as possible after a confirmed or highly suspected bite has occurred. To obtain information about locating Coral Snake antivenin, contact FL Poison Information Center-Tampa at 1-800-222-1222.
14. Upon discharge, provide patient instructions on how to call the Poison Center. Warn the patient regarding possible late effects of equine-based antivenom such as serum sickness (see below).

DISPOSITION:

All patients with a confirmed or highly suspected bite should be admitted to the ICU and closely monitored for neurologic and respiratory effects for a minimum of 24 hours.

ANTIVENIN:

In 2001, Wyeth discontinued production of the only antivenin approved by the Food and Drug Administration (FDA) for treatment of coral snake envenomations. Stocks of this antivenin have diminished over time. In response, the FDA and Wyeth have extended the expiration date on a single lot (Lot# 4030024) of antivenin until April 2017.

It is not recommended that other expired lots be administered to patients.

Florida Poison Information Center-Tampa recommends that Antivenin be administered if a bite has occurred and there is a credible identification of the snake.

Administration (Lot# 4030024):

1. Each vial of Wyeth Antivenin (*Micrurus fulvius*)(equine origin) North American Coral Snake Antivenin should be reconstituted with 10 ml of sterile water or normal saline, and gently agitated to prevent bubbles. DO NOT SHAKE!
2. A dose of 5 vials (but as many as 10), is further diluted into 250-500 ml of normal saline.
3. Start the infusion at 1-2 ml over 3-5 minutes closely monitoring the patient for signs of anaphylaxis. If no reaction occurs, gradually increase the infusion rate to finish in 2 hours.
    a. Should any signs or symptoms of anaphylaxis (e.g., wheezing, urticaria, pruritus, increased oral secretions, sensation of throat closing, etc.) develop, immediately discontinue the infusion and treat with epinephrine, corticosteroids, an H2 histamine blocker, diphenhydramine or hydroxyzine. As soon as the patient is stabilized, continue the infusion at a slower rate. An Epinephrine infusion may concurrently be administered and titrated while the antivenin continues.

SPECIAL CONSIDERATIONS:

Supportive Care:

1. Patients should be closely monitored and intubated at the onset of respiratory distress or impending respiratory failure. Ventilator support may be required for up to several weeks in severe envenomation.

Patient Transfer:

1. Per pharmacy policy, Tampa General Hospital does not release vials of North American Coral Snake Antivenin to other entities including healthcare facilities.
2. Tampa General Hospital will accept Coral snake envenomation patients in transfer for treatment. Call the transfer center: (813) 844-7979.

Serum Sickness (Type III Hypersensitivity):

1. Serum sickness is a potential complication of antivenin administration and usually occurs 5-24 days post administration.
2. Potential effects include malaise, fever, urticaria, lymphadenopathy, edema, arthralgias, nausea and vomiting.
3. Minor cases can be managed with antihistamines alone.
4. More severe cases may require methylprednisolone in tapering doses over 7-10 days.

The Florida Poison Information Center-Tampa is dedicated to working closely with Healthcare facilities to manage victims of coral snake envenomation. In addition, the Poison Center is closely monitoring antivenin supplies. A clinical trial of an experimental antivenin is currently enrolling patients at Tampa General Hospital and several other clinical sites. Please contact the Poison Center for more information about the clinical trial. Foreign manufactured non-FDA approved antivenins have shown good effectiveness in neutralizing coral snake venom in animal studies.