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To: ALL HEALTH CARE PROVIDERS including Physicians and Nurses  
From: Poison Center Education Team  
Subject: Treatment of ciguatera fish poisoning  
Date: February 22, 2022

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**CIGUATERA** is caused by ingestion of tropical reef-dwelling fish that have consumed microorganisms that produce ciguatoxins, or other fish that have consumed the toxins. Ciguatoxins are thought to increase flow through neuronal sodium channels.

Although affected fish appear normal, all tissues can be toxic, especially organs contained within the abdominal and thoracic cavities, such as the liver and heart. Because ciguatoxins are concentrated up the food chain, the risk of ciguatera is greatest with consumption of larger predatory fish. Fish commonly involved are amberjack, barracuda, grouper, kingfish, moray eels, parrot fish, red snapper, sea bass, and surgeon fish.

#### **Symptoms:**

Ciguatera is characterized by gastrointestinal (diarrhea, vomiting) and neurologic effects, usually beginning within hours of ingestion. Gastrointestinal symptoms generally appear first and are followed by neurologic effects. Paresthesias (pins and needles feeling) are the hallmark of ciguatera poisonings. Neurologic effects usually resolve within 2 weeks, but can persist for months. Ocular effects include blurred vision, transient photophobia, transient visual loss, mydriasis, and lacrimation. Chills without fever may occur. Diaphoresis and itching are common. Drowsiness, headache, dizziness, fatigue, and malaise are often reported. Less common effects include hypotension, bradycardia, hypothermia and respiratory depression. Fatalities are rare.

Sensations of "hot-cold reversal," also described as paradoxical sensory disturbances, are often seen. Other sensory effects include metallic taste and dental pain. Cranial nerve palsies, visual hallucinations, and dysuria are occasionally reported. The diagnosis is based on clinical findings and a history of fish ingestion rather than diagnostic testing. Repeated exposures to ciguatoxins may produce more severe attacks.

Symptoms of ciguatera poisoning can be further exacerbated by ethanol use and stress. Ciguatoxin may be transmitted from males to females during sexual contact. Cases of ciguatera poisoning in breast feeding infants whose mothers were poisoned have been reported.

#### **Treatment:**

Treatment of ciguatera poisoning is primarily supportive.

- Hypotension: Treat with IV fluids, consider vasopressors as needed
- Seizures: Treat with benzodiazepines
- Antiemetic and antidiarrheal preparations may be given
- There are reports of successful treatment of neurologic manifestations with IV mannitol 1 g/kg IV over 40-60 min and this may be considered if within 48 h of symptom onset
- NSAIDs or other analgesics for pain and muscle aches
- Patients should avoid further fish and seafood ingestion and alcohol for several months after the incident, since these substances may aggravate symptoms or slow recovery

**Our certified nurse specialists in poison information and physician toxicologists  
are available 24 hours a day to answer your questions**