Acknowledgment

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References

4. Zamora-Chavez A, O-Cavazos ME, Bernal-Medregal Negro; scientific name: Seriola Rivoliana) while scuba diving along the coast of the Canary Islands, Spain. The fishermen filleted the fish and stored fillets in a household freezer. Within a few days, one of the fishermen and 4 family members consumed some fish, and neurologic and gastrointestinal symptoms developed within 30 minutes to 28 hours. The 5 family members sought treatment at the emergency room of Hospital de Fuerteventura and the Outpatient Clinic of Infectious Diseases and Tropical Medicine Service of Hospital Insular de Las Palmas.

The 5 family members exhibited a combination of gastrointestinal (diarrhea [4 persons], nausea/vomiting [3 persons], metallic taste [1 person]), cardiologic (heart rhythm disturbances [2 persons]), systemic (fatigue [5 persons], itching [3 persons], dizziness [1 person]), and neurologic manifestations (myalgia [3 persons], peripheral paresthesia [3 persons], perioral numbness [2 persons], and reversal of hot and cold sensations [3 persons], which is pathognomonic of ciguatera poisoning). These clinical observations and laboratory data were collected from a prospective questionnaire filled in by physicians at the patients’ first visits. No hematologic or biochemical abnormalities were detected in any patient. Based upon the symptomatic profiles, relationships of the patients, and their common dietary histories, ciguatera intoxication was diagnosed in all. None of the patients required hospitalization. The neurologic and gastrointestinal symptoms resolved over several weeks, but intermittent recurrence of some symptoms, at lower intensities, was noted for several months.

A portion of the implicated fish was recovered from freezer storage at the fisherman’s home. A solid-phase membrane immunobead assay with a monoclonal antibody directed against Pacific ciguatoxins and related polyether toxins was used to detect ciguatoxins or other antigenically related
substances in fish tissues. Results were positive.

A 150-g sample of the fish was delivered to the US Food and Drug Organization’s Gulf Coast Seafood Laboratory, Dauphin Island, Alabama, USA, for sodium channel–specific in vitro assay (8) and liquid chromatography–mass spectrometry (LC/MS/MS) analysis. Assay results were positive and the ciguatoxin content of the fish sample was estimated to be 1.0 ppb (ng/g). Caribbean ciguatoxin (CCTX-1: MH+ m/z 1141.6) was confirmed by LC/MS/MS by using multiple reaction monitoring (9). The amount of ciguatoxin in the fish tissue estimated by in vitro assay was low, and close to the limit the LC/MS/MS method can detect. At least 2 additional toxins were detected in the fish sample by in vitro assay of liquid chromatography fractions. We cannot rule out the possibility that these toxins represent new ciguatoxinlike structures unique to the eastern Atlantic. Further studies are necessary to elucidate all toxins implicated in this outbreak.

Classic symptoms of ciguatera developed in our patients after eating a fish they captured in the Canary Islands, which are not in the ciguatera-endemic zone (Figure). The preliminary results of this outbreak investigation suggest the presence of ciguatoxins or ciguatoxinlike structures in fish from temperate waters of the eastern Atlantic. Ciguatera poisoning is a matter of public health concern and residents of coastal West Africa and the regional island archipelagos could be a new community at risk for this seafood intoxication syndrome. We emphasize that ciguatera poisoning is a debilitating disease, and therapeutic intervention strategies are very limited (10).

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References

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