

A Case of Scombroid Poisoning From Tilapia

Case report

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Background

Scombroid poisoning is a syndrome of histamine toxicity. It was first described in 1799 [1]. Scombroid poisoning occurs after ingestion of contaminated oily fish that is not properly refrigerated. Fish of the Scombroideae and Scomberesocidae family cause many of the cases of scombroid. Tuna fish accounts for more than 80% of cases. Mackerel, Bonito, salmon and even dolphin have also been known to cause scombroid [1]. In 2016, physicians at USC reported one case of Scombroid poisoning from Tilapia. Tilapia is a non-scombroideae fish and has never been associated with scombroid poisoning. Histamine levels greater than 50 mg of histamine per 100 g of fish are associated with clinical toxicity. An in vitro public health survey identified histamine levels of 290 mg/100 g of fish in the Tilapia species [2]. Despite these high levels, a literature review shows only one case of suspected scombroid poisoning has been reported in humans. We present another case of Scombroid poisoning from Tilapia.

Case Report

A 61 year-old female presented to the Emergency Department (ED) with a chief complaint of having an “allergic reaction”. She states she ate Tilapia “a few hours ago” and then began to feel itchy all over her body. She stated the Tilapia “didn’t taste right” but could not describe the taste, and then began breaking out in a pruritic rash all over her body from her lower legs up to her neck and into her face. She denied having shortness of breath and

thought the rash would go away. After four hours of the non-improving rash, she was brought to the ED. Physical examination was remarkable for a diffuse urticarial-like pruritic rash along her arms, legs, and torso extending into her neck and face. Lungs were clear to auscultation, no stridor, hoarseness or wheezing was present, and she was speaking in full sentences without difficulty. Initial vital signs were within normal limits (blood pressure at 102/63 mm Hg, heart rate 75 beats per minute, temperature 97.8 degrees Fahrenheit, and respiratory rate 18 breaths per minute with oxygen saturation at 98% on room air). Her past medical history was unremarkable, she has no history of allergy to fish or shellfish. She had eaten Tilapia in the past without problems. The patient was given Famotidine, Diphenhydramine, and Methylprednisolone due to the clinical picture of an acute allergic reaction. Her limited laboratory test results were unremarkable. She was observed in the ED for three hours and subsequently discharged as her rash began to recede, and she was no longer pruritic.

Discussion

Scombroid poisoning results from the high levels of histidine in the fish that with improper refrigeration get converted to histamine through the bacterial enzyme histidine decarboxylase [1]. Properly cooking the fish has not been shown to prevent toxicity [1]. The onset of symptoms is rapid, occurring within 10 minutes to 1 hour after the consumption of the contaminated fish. The

clinical presentation of scombroid poisoning looks similar to an allergic reaction. Symptoms include erythema, flushing of the face, neck and torso which resembles a rash. Headache, dizziness, palpitations, pruritus, and a burning sensation of the mouth, described by patients as the fish tasting “peppery” is also common [1]. Gastrointestinal symptoms such as abdominal cramping, nausea, vomiting, and diarrhea also occur. However, unlike an IgE mediated allergic reaction, bronchospasm, hypotension and stridor are not usually seen [3].

There is no specific diagnostic test for scombroid poisoning in humans. The diagnosis is made clinically with a history of recent fish consumption, and can be confirmed by determination of elevated histamine levels either in the suspected fish or the patient’s plasma. Once scombroid toxicity is suspected, histamine levels in the fish may be measured, as well as histamine levels in the patient’s plasma. Treatment of scombroid poisoning is variable. Because it can be a benign episode and typically self-limiting, often treatment is not necessary. If the patient presents with mild symptoms such as flushing, rash, swelling, one can give oral antihistamines for 1 to 2 days.⁴With this treatment, symptoms typically

resolve within 8 hours. Patients who cannot tolerate oral antihistamines or with more severe symptoms can be given intravenous antihistamines. Administration of epinephrine is only considered if symptoms are extremely severe, however this is very rare [4].

Scombroid fish poisoning is a reportable foodborne illness; however, it is thought to be underreported and could account for up to 5% of food-borne disease outbreaks. It is an important differential diagnosis to consider when treating a patient who presents with symptoms consistent of an allergic reaction after eating fish.

References

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