

# Gastrointestinal emergency room admissions and Florida red tide blooms

Barbara Kirkpatrick, Judy A. Bean, Lora E. Fleming, Gary Kirkpatrick, Lynne Grief, Kate Nierenberg, Andrew Reich, Sharon Watkins, Jerome Naar

## A B S T R A C T

Human exposure to brevetoxins during Florida red tide blooms formed by *Karenia brevis* has been documented to cause acute gastrointestinal, neurologic, and respiratory health effects. Traditionally, the routes of brevetoxin exposure have been through the consumption of contaminated bivalve shellfish and the inhalation of contaminated aerosols. However, recent studies using more sensitive methods have demonstrated the presence of brevetoxins in many components of the aquatic food web which may indicate potential alternative routes for human exposure.

This study examined whether the presence of a Florida red tide bloom affected the rates of admission for a gastrointestinal diagnosis to a hospital emergency room in Sarasota, FL. The rates of gastrointestinal diagnoses admissions were compared for a 3-month time period in 2001 when Florida red tide bloom was present onshore to the same 3-month period in 2002 when no Florida red tide bloom occurred. A significant 40% increase in the total number of gastrointestinal emergency room admissions for the Florida red tide bloom period was found compared to the non-red tide period.

These results suggest that the healthcare community may experience a significant and unrecognized impact from patients needing emergency medical care for gastrointestinal illnesses during Florida red tide blooms. Thus, additional studies characterizing the potential sources of exposure to the toxins, as well as the dose/effect relationship of brevetoxin exposure, should be undertaken.

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