

Poison Information Follow Up Study

Quirino W, Fleming LE, Weisman R, et al. Follow-Up Study of Florida Red Tide-Associated Respiratory Illness. Submitted

The extent to which aerosolized Florida red tide toxins (brevotoxins) can cause respiratory symptoms in humans is not known. A phone-questionnaire matched retrospective cohort study was conducted to evaluate reports of chronic respiratory symptoms following self-report of exposure to Florida red tide among persons calling the South Florida Poison Information Center between August 2001-May 2002. Exposed participants were defined as adults (> 18 years) who reported exposure to Florida red tide; unexposed participants (controls) had called the Poison Information Center for reasons other than Florida red tide exposure, and were matched with exposed participants on age, gender, and date of original call. There were 36 exposed participants and 36 unexposed participants. The mean age (+ standard deviation) of the exposed population was 54.58 + 14.41 years, with 26 (72.2%) females. Exposed participants reported 3.25 + 1.78 mean respiratory symptoms following exposure (defined as self-report of exposure to Florida red tide on the west coast of Florida), which is significantly more than the unexposed participants, who reported 0.36 + 0.89 symptoms ($p < 0.001$). Exposed participants had significantly elevated relative risk of reporting cough (relative risk [RR]= 7.75; $p < 0.001$), runny nose (7.00; $p < 0.005$), eye irritation (5.25; $p < 0.025$), sore throat (10.00; $p < 0.001$); shortness of breath (16.00; $p < 0.001$), and wheezing (15.00; $p < 0.001$) at the time of their original call. These symptoms lasted for a significantly longer time after the reported red tide exposure when compared with symptom durations reported by the unexposed population. For example, the reported duration for cough among exposed participants was 12.84 ± 25.35 days compared with 2 ± 1.41 for the unexposed participants). We found similar results for shortness of breath (10.75 ± 19.56 days for exposed participants and 1.0 ± 0 days for unexposed participants; $p < 0.0001$) and wheezing (11.06 ± 20.21 days in exposed participants and 0 in unexposed participants; $p < 0.0001$). Participants exposed to Florida red tide were also significantly more likely than unexposed participants to report seeking medical care (RR = 3.00; $p < 0.025$). This is the first epidemiologic study to verify reports of chronic respiratory symptoms among persons with self-reported exposure to Florida red tide. This pilot study demonstrated that these symptoms lasted for a considerable time after exposure, and resulted in significantly increased use of medical care. Future studies are necessary to characterize both the chronic and acute respiratory health effects associated with exposure to Florida red tides.