

A fatal case of food poisoning of cucurbitacin containing courgette

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Background: Cucurbitacins are a group of bitter tasting toxins produced by the Cucurbitaceae family (courgettes, cucumber, pumpkin and squash) to protect the plants against insects. High concentrations of toxin in plants could result from cross-pollination with wild or ornamental cucurbitaceae species, or high temperatures which cause growth stress.

Case: We present a case of food poisoning in an older, formerly healthy, couple. Both patients ingested maximum two bites of an ovensh containing courgette grown from their home garden. Two hours after ingestion, the woman contacted the general practice service (GPS) with symptoms of nausea, vomiting and diarrhea, more severe in the man. She also mentioned a repulsive bitter taste. Food poisoning in Dutch Triage Standard (NTS) is considered as bacterial gastro-enteritis and the couple was instructed conform NTS protocol to maintain fluid balance and contact the GPS if symptoms worsened. The next day, the woman had recovered, but her husband was still suffering from severe gastro-intestinal distress. A home-visit was planned, but by the time the GP visited the patient, he already died from exhaustion and dehydration, less than 24 hours after ingesting the courgette casserole.

Results: Because of the fulminant course and the bitter taste, food poisoning with cucurbitacins was suspected. Therefore, leftover material of the casserole and courgettes from the home garden was preserved. The materials were analysed using liquid-chromatography with Q-Exactive Orbitrap mass-spectrometry. Both the casserole and home garden courgette contained cucurbitacin-E, cucurbitacin-E-glucoside and cucurbitacin-I-glucoside, contrary to control courgettes obtained from another home garden.

Conclusion: Retrospectively, the cause of death was poisoned food by cucurbitacins containing courgette. In hindsight, the ovensh combined with the repulsive bitter indicated that bacterial gastro-enteritis was less likely. We present this case to alert physicians of the existence of this rare but potentially fatal cause of food poisoning. The medical terminology 'food poisoning' leads to diagnosis of bacterial gastro-enteritis which is inadequate in the case of poisoned food.

Keywords: Poisoned food, cucurbitacin, courgette, zucchini, bitter taste