ABSTRACT:
Food poisoning outbreak caused by poisonous cassava flour: Kasese District, Uganda, September 2017

Authors
Mrs. Phoebe Alitubeera, Ms. Patricia Eyu, Dr. Benon Kwesiga, Dr. Alex Ario, Dr. Bao-ping Zhu

Background: Cassava, a staple food in Africa, may contain lethal levels of cyanide if not properly scraped and soaked. On 8 September 2017, Kasese District, Uganda reported a suspected food poisoning outbreak involving ≥30 cases and 2 deaths after a funeral. We investigated to determine the cause and source of outbreak, and recommend control measures.

Methods: We defined a probable case as sudden onset during 1-9 September of vomiting or diarrhoea, plus muscle aches, rapid heart rate, dizziness, or altered mental state in a resident of the tri-subcounty area where the funeral occurred. We conducted medical-record review and active community case-finding. In a case-control study, we compared exposures of case-patients and age- and neighbourhood-matched controls. Eligible controls must have eaten cassava during outbreak period because all case-persons ate cassava. We conducted track-back investigation and tested implicated cassava for cyanide.

Results: We identified 98 probable cases; 2 (2.0%) died. Males (attack rate [AR]=1.2/10,000) and females (AR=1.5/10,000) were similarly-affected. Cases started at 8:00pm on 5 September, and peaked during 12:00a.m.-3:00am for three subsequent days diminishingly. Of 88 case-persons and 176 controls, 21 (24%) case-persons and 3 (1.7%) controls attended the funeral (OR=40, 95%CI=5.4-298). All case-persons who attended the funeral ate cassava provided by wholesale supplier X, who purchased the implicated batch from Tanzania. Among 67 case-persons and 173 controls absent from the funeral, 67 (100%) case-persons and 137 (79%) controls bought cassava flour from Supplier X during outbreak period (OR=∞, 95%CI_Fisher's exact=4.3-∞). Cyanide levels in 5 implicated cassava samples (range=85-90mg/kg, mean=88mg/kg) were >8 times higher than safe level (<10mg/kg).

Conclusion: Consuming food made with cyanide-contaminated cassava flour caused this outbreak. We recommend routine testing of commercial cassava flour (including that at border crossings) for cyanide, and safe cassava processing (peeling, scraping, and soaking for three days before drying).