

Food Poisoning Investigation in an Under-resourced Environment: A Case Report

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Abstract Food borne diseases are of public health importance. A food poisoning incident occurred on 24th October 2010 amongst 22 mourners who had consumed porridge one day after the funeral rites of a child in Mubachi Sub-Location of Suba West Division in Migori District, south western Kenya. An investigation of the incident was conducted with only two objectives in mind, i.e. (1) to document the poisoning incident for learning and for future reference and (2) to determine the causative factors so as to recommend appropriate public health interventions. Both patient and clinician interviews were conducted. A total of seven patients were interviewed. Patients denied any knowledge of environmental contamination within or without the homestead. They also denied care-less handling of tobacco farming pesticides. The investigation established that the water used in preparing the porridge had been left uncovered on the verandah overnight and it had developed a brownish discoloration. The porridge was prepared from a mixture of cassava and sorghum flour in the ordinary way and mourners had consumed between 250ml-500ml in clean plastic cups. The victims developed signs and symptoms about 30-60 minutes after consumption. Children were affected first. They collapsed, vomited, complained of abdominal pains and had diarrhea. Other signs and symptoms occurring in both adults and children were fever, generalized body weakness, and profuse sweating. The frequency distribution of signs and symptoms showed 63% generalized body weakness, 50% vomiting, 27% nausea, 23% abdominal pain, 14% diarrhea, 9% cough and 5% restlessness. The attack rate was 100%. The suspected cause of poisoning was either hydrocyanic acid in cassava flour or pesticide contamination of the water used in preparing the porridge. In order to arrive at a differential diagnosis, an internet-based literature search was conducted to provide an overview of the signs and symptoms associated with the suspected toxicological agents. On this basis, hydrocyanic acid, organochlorine and pyrethroid pesticides were ruled out. There was a near-perfect match between the signs and symptoms of the poisoning to classical signs and symptoms of organophosphate poisoning in the literature. We conclude that the poisoning agent was an organophosphate. Though the victims denied any knowledge of environmental contamination, we strongly believe that the water used in preparing the porridge had been chemically contaminated either by careless handling of pesticides or foul play. We recommend that since the affected area and indeed the rest of Migori district are tobacco growing areas, there is need for mass health education on the safe handling and disposal of pesticide products as these are widely used. Pesticide dispensing outlets should provide also pesticide safety education to customers on each pesticide sold to encourage safe use and handling.

Keywords Food Poisoning, Investigation, Kenya, Hydrocyanic Acid, Pesticide Handling

1. Introduction

Unsafe food causes many acute and life-long diseases, ranging from diarrhoeal diseases to various forms of cancer[1]. WHO estimates that foodborne and waterborne diarrhoeal diseases jointly cause about 2.2 million deaths annually, 1.9 million of them children[1]. This study set out to investigate an incidence of food poisoning in a Kenyan

village with a view to document the poisoning incident for learning and for future reference; and to determine the causative factors of the poisoning incident so as to recommend appropriate public health interventions.

1.1. Setting

Mubachi Sub-Location has a population of about 5,723 inhabitants, composed mainly of three ethnic groups i.e. Luo, Abasuba and the Maragoli sub-tribe of the Luhya. It is the second lowest administrative area in Suba West Division of Migori District, in southern Nyanza, western Kenya. The main economic activity is tobacco farming practiced by households on small-scale farms. The literacy levels are

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