

## Oral Abstracts

### 8B-03

#### HISTAMINE POISONING DUE TO INSECT INGESTION: AN OUTBREAK INVESTIGATION FROM THAILAND

S.Chomchai

*Department of Preventive and Social Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand*

**Objectives:** Insect is a common delicacy in the in the Asian culture. Adverse effects may be associated with insect ingestion. We are reporting an outbreak of histamine poisoning from ingestion of fried insects.

**Methods:** On July 25, 2014, a group of high school students at a seminar presented to Angtong Provincial Hospital, Thailand for symptoms of “food poisoning with pruritic skin rashes” after ingesting snacks consisting of fried insects from a local vendor. We initiated an outbreak investigation and collected samples of remaining foods for analyses. A retrospective cohort study was performed. The information collected were demographic data, types of food ingested by each individual, their clinical findings, and treatments received. Attack rates and relative risks were calculated.

**Results:** Out of 242 students, 28 developed acute illnesses. Mean age the sick students was (range 11-17). Fifteen (53.6%) of them were female. Clinical manifestations included, flushing, pruritus, urticarial rashes, headache, nausea, vomiting, diarrhea, dyspnea and bronchospasm. Two children were hospitalized overnight without serious complications. The type of food ingested included a lunch that was provided at the seminar for all students and snacks that 41 students bought from the only vender in the vicinity. The snacks included fried grasshoppers, silkworm pupae, common green frogs, bamboo borers, crickets and meat balls. The attack rates were highest (82.6% and 85.0%) among students who ingested fried grass hoppers and fried silkworm pupae; and lowest (4.4 and 5.3%) among those who did not ingest them, with relative risk of 18.73 (95%CI 9.62-36.44) for grasshoppers and 16.0 (95%CI 8.75-29.26) for silkworm pupae. The average concentrations of histamine in the fried grass hoppers and silkworm pupae were 9.73 and 7.66 mg/100g, respectively. These concentrations were comparable with those of fish found to cause scombroid poisoning (Epidemiology and Infection. 1987;99(3):775-82). Assays for insecticides were negative.

**Conclusion:** Through epidemiological outbreak analysis and laboratory confirmation, we have illustrated that histamine poisoning can occur from ingestion of certain fried insects. We postulate that histidine, which is known to be present in high concentration in grass hoppers and silkworm pupae is decarboxylated by bacteria to the primary intoxicant histamine, a heat stable toxin. The ingestion of such substance can give the clinical pictures of scombroid poisoning.