ABSTRACT

Epidemiological and Microbiological Investigation of a Food Poisoning Outbreak in Berau, Indonesia

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Background : Food poisoning outbreaks remain an important public health concern in Indonesia. Integrating epidemiological and laboratory evidence is essential for identifying potential food vehicles and etiological agents during outbreak investigations.

Objective : To investigate potential food vehicles and microbiological findings in a food poisoning outbreak among workers at PT. SMJ, Berau, Indonesia.

Research Methods/ Implementation Methods : An outbreak investigation was conducted using epidemiological interviews and laboratory testing. Because interviewed participants were predominantly ill, food-specific exposures were assessed using an unmatched case-control analysis involving 87 cases and 21 non-ill controls who attended the lunch. Odds ratios (ORs), exact 95% confidence intervals (CIs), and Fisher's exact p-values were calculated. Three leftover food samples were examined by the Indonesian Food and Drug Authority.

Results : The overall outbreak attack rate was 29%. Diarrhea (66%) and abdominal pain (65%) were the predominant symptoms. Sayur asam (OR=3.05; 95% CI: 1.00–10.52; p=0.050) and sambal (OR=4.01; 95% CI: 0.86–37.99; p=0.093) showed elevated but statistically inconclusive associations. Fish (OR=2.13; 95% CI: 0.72– 6.87) and omelet (OR=1.77; 95% CI: 0.60–5.73) were also not significantly associated with illness. Salmonella sp. was detected in the combined sambal-and-omelet sample but not in the tested sayur asam or fish samples.

Conclusion/Lesson Learned : No individual menu item was conclusively associated with illness. However, laboratory testing detected Salmonella sp. in the combined sambal-and-omelet sample, identifying a potential microbiological source that could not be attributed to either component individually.

Keyword : food poisoning; outbreak investigation; case-control; odds ratio; Salmonella