EP – 37

Methanol content in homemade Alcohol in Vietnam

Yvonne Lao[1], Pham Bich Diep[2], Le Thi Huong[2], Nguyen Van Hien[2], Knut Erik Hovda[1]

[1]*Norwegian National Unit for CBRNE Medicine, Department of Acute Medicine, Oslo University Hospital, Norway,* [2]*Institute for Preventive Medicine and Public Health, Hanoi Medical University, Vietnam*

Objective: The number of methanol poisoning incidents globally has been increasing. Some have been in Vietnam. Methanol poisoning usually occurs when people think they are drinking regular alcohol. Methanol is a cheaper product; it is sometimes added to liquor to save money, despite its known toxicity. Substitution with methanol is thought to be the main reason for methanol poisoning globally. Methanol can also be found as a by-product from the distillation of ethanol. It is unclear if improper home-brew ethanol distillation in Vietnam generates toxic concentrations of methanol. We evaluated this in a prospective pilot study of Vietnamese homemade liquor.

Methods: Twenty households producing homemade alcohol in Phu Tho province were included in this study. All the households made alcohol from rice, which was cleaned, cooked and allowed to cool before yeast was added for fermentation. The alcohol was then distilled without any temperature control. The final product was a mix of all the distilled alcohol contents. After observing the production, one litre of a batch from each household was collected. In addition, one bottle of rice-distilled alcohol was purchased randomly at ten different street vendors or eateries. The street vendor alcohol samples were all made by home-brewers. All 30 samples were analyzed for methanol content. To obtain a concentration of 32mg/dL of methanol in a 70 kg person (volume of distribution 0.7 L/kg) who drinks 0.5 L of home-brew or street-vendor liquor, a concentration of 31.36 g/L or 31360 mg/L 100 % alcohol by volume (ABV) is required.

Results: None of the samples contained toxic concentrations of methanol. Seventeen (85%) of the samples from home brewers contained detectable concentrations of methanol. Median concentration was 9 mg/L 100% ABV (range 2-37 mg/L 100% ABV). Six samples (60%) of the street vendor alcohol contained methanol, median concentration 12 mg/L 100% ABV (range 2-25 mg/L 100 % ABV).

Conclusion: This pilot study revealed that home distillation of alcohol from rice in Vietnam does not produce toxic methanol concentrations. The results support the proposition that methanol poisonings are most likely due to substitution with methanol in ethanol-containing beverages. More studies are warranted to confirm these findings.