ORAL PRESENTATIONS

[ID-O#049] Analysis of hydrogen sulfide poisoning cases reported to Taiwan Poison Control Center between 1986 and 2021

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Objective: Hydrogen sulfide (H2S) exposure is a major cause of occupational poisoning that frequently leads to life-threatening effects. This study aimed to investigate the pattern, outcome and predictors of severity of H2S poisoning in Taiwan.

Methods: This study identified all H2S poisoning cases reported to Taiwan Poison Control Center between 1986 and 2021. Their medical records were independently reviewed by two clinical toxicologists. Nominal variables were then assessed using Fisher's exact test, and continuous variables with the Mann- Whitney U test. Logistic regression model was used to calculate odds ratios and 95% confidence intervals for developing severe and fatal outcomes with different exposure scenarios, adjusted for age, sex, and exposure time.

Results: A total of 164 cases were eligible for final analysis. Over 70% was exposed occupationally, such as working in sanitary sewers or cesspits (17.2%), chemical factories (12.6%), and hot-spring reservoirs (10.3%). Severe and fatal poisoning was found in 87 cases (53.0%, including 43 with severe effects and 44 fatal cases), and many of them exhibited metabolic acidosis, acute liver injury, and acute kidney injury. Severe and fatal effects were more likely to occur among those who worked in confined spaces (OR 3.85, 95% CI 1.35–11.01). Moreover, working in underground and leather factory were both associated with a higher risk of severe-to-fatal outcome (OR 6.52, 95% CI 2.25–18.86, and OR 1.41,
95% CI 1.08–1.85, respectively). The use of sodium nitrite did not prevent death (p=0.43). However, prompt administration before out-of-hospital cardiac arrest (OHCA) appeared to lower the risk of fatality (p=0.03, OR=0.29, 95% CI 0.09–0.90).

Conclusion: We found a correlation between working in the confined spaces and the severity of H2S poisoning. The treatment of H2S poisoning is mainly supportive; while sodium nitrite may lower the risk offatality rif it is administered promptly before OHCA.