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# Association between co-ingested alcohol and deliberate self-poisonings

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**Objective:** Sri Lanka has one of the highest alcohol consumption rates in the world. Acute use of alcohol is a potent risk factor for deliberate self-harm, though the nature of this risk is poorly understood. The aim of this study was to compare the clinical outcomes and diurnal variation in time of ingestion between deliberate self-poisonings that involve alcohol versus those that do not.

**Methods:** This is a retrospective analysis of consecutive presentations to specialized toxicology unit, Teaching Hospital Peradeniya, Sri Lanka, following deliberate self-poisoning from 26 March 2011 to 30 October 2016. Demographic and clinical data were collected from deliberate self-poisoning along with a history of alcohol co-ingestion.

**Results:** A total of 6290 (52% females) deliberate self-poisoning cases were included in the analysis (median age 22 [IQR 18 to 32]). Overall, 12.2% (768/6290) of cases involved alcohol co-ingestion (median age 38 [IQR 28 to 49]) based on history. Most of the alcohol co-ingestion cases were male (754/768 [98%]). Risk of death was greater amongst patients reporting alcohol co-ingestion (41/768 [5.3%] vs 102/5522 [1.8%]; $p < 0.001$). More patients who co-ingested alcohol required intubation (91/768 [11.8%]) than those who did not co-ingest alcohol (182/5522 [3.3%], $p < 0.001$). Patients who co-ingested alcohol had a longer hospital stay (median 53.8 [IQR 38.0 to 85.48] vs 44.7 [30.0 to 65.9) hours; $p = 0.5890$). Most of the alcohol co-ingestion cases were associated with pesticide poisoning (614/768 [79.8%]); by contrast, medication poisoning accounted for a larger proportion of the no alcohol co-ingested group (3289/5522 [59.6%]). The distribution of exposure time was significantly different between cases that did and did not involve alcohol ($p < 0.001$). The alcohol co-ingestion group showed a prominent peak occurring later in the evening (~18:00 hour) compared to poisonings that did not involve alcohol (peak at ~15:00 hour). Using multi-logistic regression, age (OR 1.1 [1.0 to 1.1] for age >38 years vs ≤ 38 years), male sex (OR 4.1 [2.7 to 6.1]) and co-ingestion (OR 3.0 [2.1 to 4.4]) were independently associated with increased risk of death.

**Conclusion:** It is likely that alcohol consumption is playing a key role in the high deliberate self-poisoning, though at present the evidence for this is under-developed. Alcohol co-ingestion is highly associated with pesticide poisoning. The timing of alcohol and deliberate self-poisoning is in line with peak ingestion times after working hours. Further studies are required to investigate the level of alcohol intoxication involved with deliberate self-poisonings.


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