



OP12

Characteristics of repeat self-poisoning cases in a decade of NSW Poisons Information Centre calls

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Objective

To investigate characteristics of patients treated for multiple instances of self-poisoning or poisoning exposure as recorded in the NSW Poisons Information Centre (NSW-PIC) call data.

Methods

The Poisoning And enVenomation Linkage to evaluate Outcomes and clinical Variation in Australia (PAVLOVA) study has linked all NSW-PIC call data for the period January 2011–November 2020 with Registry of Birth, Deaths and Marriages, NSW ambulance, hospital and emergency admission data. All cases listed in NSW-PIC calls, as well as all cases admitted in hospital or through emergency admission for poisoning were included. Focusing on NSW-PIC cases, from an initial dataset of 145,940 calls (N=79,317), we focused only on Exposure calls (86,639), excluding Recalls (27,934) and/or 3,248 Bite/Sting calls, for a final total of 84,010 calls. From these, we also took only the first call on each date, reducing the total of 58,843 (N=55,076). To clearly identify single vs repeat cases, we used 365 day call-free periods, so that only index (first) calls from 2012 up to October 2019 were included (N=53,817). Patients were divided into once-only vs repeaters and compared.

Results

The overall sample was 54.8% female, and Repeaters constituted 4.2% (N=2260) of the sample, and 2% of the sample had died (N=1070). For the Repeaters, the median number of calls was 2 (i.e., 1 repeat call) with an IQR of 2–3 (although one outlier individual recorded 61 calls). The median number of days between repeated incidents was 125 (IQR: 28–344).

When comparing likelihood of Repeated calls with logistic regression, females were significantly more likely than males (OR: 1.7, 95%CI: 1.6–1.9) and age at index call (N with age=18,788) was negatively associated with repeating, with the odds per year at 0.997 (95%CI: 0.995–0.999). Repeaters were more likely to die (OR: 2.75, 95%ci: 2.23–3.37). Interestingly, in a multivariate logistic regression predicting death, females had lower odds of death after adjusting for age and Repeating, and younger patients similarly had lower odds.

Conclusion

Having more than one poisoning incident is a strong predictor of death, although given that the median of repeated calls was 2, the first repeat would have been the incident associated with death. Repeaters were more likely to be young and female, although, paradoxically, amongst repeaters, being young and female had lower odds of death. Better support for, and possibly closer monitoring of, first-time poisoning cases is needed to prevent repeated incidents.