

Emergency department presentations with analytical confirmation of bromazepam across Australia

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Introduction: Bromazepam, a novel benzodiazepine without registered clinical use, is associated with sedative, hypnotic and anxiolytic properties. Self-report surveys, police seizures and mortality data show increasing trends of bromazepam detections, but clinical data with confirmed identification is limited. We aimed to describe emergency department (ED) presentations with confirmed bromazepam exposure between April 2020 and March 2024.

Methods: Demographic, clinical, toxicology and outcome data from cases aged 16 years and older with analytical confirmation of bromazepam were extracted from the Emerging Drugs Network of Australia (EDNA) national dataset. All data were summarised using descriptive statistics.

Results: Bromazepam was detected in 141 ED presentations (4.8% of all EDNA cases). Bromazepam was first detected in March 2021, however, three-quarters of cases occurred in 2023/24 (n=101, 71.6%). The median age was 26 years (range 16-59 years) and 112 (79.4%) were male. Most arrived by ambulance (n=126, 89.4%) and the median length of ED stay was 5.1 hours (Q1-Q3, 2.9-8.6). No case self-reported bromazepam. Any benzodiazepine was self-reported in 26 (18.4%) cases, five cases specifically stating 'Xanax'.

Illicit/novel substances were co-detected in 117 (83.0%) cases; frequently methylamphetamine (n=74, 52.5%), gamma-hydroxybutyrate (n=26, 18.4%) and clonazepam (n=22, 15.6%). An opioid was detected in 43 (30.5%) cases and additional benzodiazepines in 100 cases (70.9%). Pharmaceutical co-detections included diazepam (37, 26.2%) and pregabalin (n=21, 14.9%). The median total detected substances (including metabolites) was four (range 1-20). Two cases had no other substance detected, both presented

sedated and recovered with supportive care. The ED length of stay was 11.3 and 13.9 hours respectively.

Discussions and Conclusions: Bromazolam is the most common novel substance detected nationally in EDNA. Lone bromazolam detection in ED presentations is rare, with polydrug use limiting conclusions regarding clinical effects and management requirements.

Implications for Practice or Policy: Objective evidence of novel drug exposure causing harm within ED presentations is scarce. Novel benzodiazepines are the most commonly detected NPS in Australia and require continued monitoring to prevent and reduce harm. The inclusion of ED clinical data with confirmed identification of drug exposure within national toxicosurveillance systems identifying acute harms of emerging drugs is essential.

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