

Sex Differences in Adult Abuse and Misuse Cases: an Analysis of the Toxicology Investigators Consortium (ToxIC) Registry: 2010– 2016.

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Background: Sex differences have been previously reported in classes of abused drugs.

Hypothesis: The aim of this study is to review poisonings in adults presenting with drug abuse/misuse as managed by bedside medical toxicologists.

Methods: ToxIC cases ages 19–65 years with drug abuse or misuse between 1/2010–12/2016 were included. Descriptive statistics, chi-square tests, and logistic regression were used to assess differences in distribution of study variables by sex. All analyses were performed with Stata SEv14.2.

Results: Among 51,441 total registry cases, 542 (1.05%) were excluded for missing data: 34,133 cases were ages 19–65 years, among which 3426 (10.0%) were included for misuse/abuse. 47.5% were white, 12.6% black, 0.6% Asian, 6.2% other, 32.9% race unknown. Racial distributions were similar by sex. Overall, 52.9% of cases were pharmaceuticals. Females were more likely to present with pharmaceutical exposure than non-pharmaceutical exposure (OR = 2.3, 95% CI 1.9–2.6). Males were more likely than females to present with non-pharmaceutical exposure (54.1 versus 34.2%, $p < 0.001$). Opioids/analgesics accounted for 34.0% of cases with females having a higher proportion of opioids/analgesics cases than males (37.9 versus 28.7%, $p < 0.001$). The second most common was anti-depressants at 15.4% of cases, with no difference observed between sexes (14.5 versus 16.0%, NS). Females were more likely to present for opioids than males (OR = 1.7, 95% CI 1.4–1.9), whereas males were more likely to present for sympathomimetics (OR = 1.5, 95% CI 1.2–1.8) and psychoactives (OR = 3.0, 95% CI 2.3–4.0). 6.1% of patients had a vital sign abnormality, with tachycardia most common (9.0%). Most common interventions were pharmaceutical support (males = 29.9%, females = 23.0%, $p < 0.001$) and intubation (males = 14.0%, females = 12.0%, NS). Death was reported in 1.4% ($n = 47$) of cases of misuse/abuse, representing 12.8% of the 184 females + 183 males who died among all registry cases in this age group.

Discussion: Among adults with drug misuse/abuse, females were more likely to have used an opioid pharmaceutical and males were more likely to have used a non-pharmaceutical sympathomimetic or psychoactive agent. Conclusion: Sex differences were observed among adult patients managed for drug abuse or misuse, which may have implications for both management and prevention.