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Agents of Exposure among Pediatric Transgender Patients: An Analysis of the Toxicology Investigator's Consortium (ToxIC) Registry

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Background

Little is known regarding trends in poisonings within the pediatric transgender population. The purpose of this study was to review medical encounters managed by bedside medical toxicologists, and to describe trends within the data regarding types of exposures in this specific population.

Methods

The Toxicology Investigators Consortium (ToxIC) database was created in 2010 by the American College of Medical Toxicology (ACMT) to compile data recorded by medical toxicologists in both inpatient and outpatient settings. In January 2017 the data field for transgender (male-to-female, female-to-male, or gender non-conforming) was added to the ToxIC form. A retrospective database review of these transgender patient cases dating between January 2017 and December 2020 was performed.

Results

There were 195 transgender patients included in the ToxIC registry between January 2017 and December 2020. Of those, 103 (52.8%) were pediatric patients (age <18 years), 97 (49.7%) of whom were between the ages of 13-18, and six between (3.1%) ages 7-12. We focused on the 97 teenagers for the data analysis. Of the 97 teenagers, 71 (73.2%) were female-to-male, 18 (18.6%) were male-to-female, and eight (8.2%) were gender non-conforming. With regard to reason for the encounter, 91 (93.8%) of the teenagers were evaluated for an intentional pharmaceutical ingestion, compared to 73 of 92 (79.3%) of adults reporting an intentional pharmaceutical ingestion. Four teenagers (4.1%) reported an intentional non-pharmaceutical ingestion—one for alcohol use, and one for an unintentional pharmaceutical ingestion. Of the 91 teenagers that reported an intentional pharmaceutical ingestion, the primary agent in 24 (26.4%) cases was antidepressants, 21 (23.1%) analgesics, 11 (12.1%) anticholinergic/antihistamines, six (6.6%) anticonvulsants, six (6.6%) cardiovascular

medications, five (5.5%) antipsychotics, three (3.3%) sympathomimetics, two (2.2%) cough and cold medications, two (2.2%) opioids, and two (2.2%) unknown pharmaceuticals. Each of the remaining 9 patients were exposed to one of the following categories as their primary agent: anticoagulants, antimicrobials, caustics, GI medications, herbal/dietary supplements/vitamins, lithium, metals, sedative-hypnotic/muscle-relaxants, and other pharmaceuticals. The most common vital sign abnormality in the cohort was tachycardia (HR>140), observed in 17.5% (N=17) of the teenagers. This compares to the 13.0% (N=12) of the 92 transgender adults with tachycardia in the cohort. Nervous system abnormalities were seen commonly both in teens, 74.2% (N=72) and adults, 67.4% (N=62). The most common nervous system abnormality was coma/CNS depression. Of the 97 exposed teenagers, 25.8% (N=25) experienced these symptoms, and of the 92 exposed adults, it was reported in 23.9% (N=22). There were no deaths in either the teenage or adult transgender groups.

Conclusion

The majority of transgender exposures in the ToxIC registry were teenagers ranging in age from 13-18 and the most common reason for encounter was an intentional pharmaceutical exposure. The percentage of teens seen for this reason was higher than the adult transgender population during the same time frame. The most common substances ingested were antidepressants and analgesics. Recognizing and promoting further research on these trends could be helpful in both preventing and treating intentional poisonings within the transgender teenager population.