

Presented at North American Congress of Clinical Toxicology 2014 – New Orleans, LA

Published in Clin Toxicol 2014,52:783

### **223. Comparative analysis of exposure substances in the Toxicology Investigators Consortium case registry versus National Poison Data System**

J D Cao, A C Bronstein, E J Lavonas, for the Toxicology Investigators Consortium (Toxic) Investigators

*Rocky Mountain Poison & Drug Center – Denver Health, Denver CO USA*

**Objective:** National Poison Data System (NPDS) and Toxicology Investigators Consortium (Toxic) Case Registry collect data from overlapping yet distinct populations using differing exposure classification schema. We sought to identify and characterize the differences between the top 10 exposure substances from NPDS and Toxic to better understand the populations tabulated by poison centers versus those seen by medical toxicologists.

**Methods:** We retrospectively analyzed all cases in the NPDS and Toxic Registry from 1/1/2010–12/31/2013. Substances involved in the exposure were categorized using NPDS generic codes and Toxic standardized substance nomenclature and sorted by frequency.

**Results:** A total of 11,085,874 exposures in the NPDS and 11,380 exposures in the Toxic were analyzed. The most common exposures managed by both poison centers and medical toxicologists were acetaminophen (APAP), ethanol and benzodiazepines (BDZ) – Table 1. Diphenhydramine, atypical antipsychotics and selective serotonin reuptake inhibitor (SSRIs) were also among both top 10 exposures. Exposures to atypical (non-TCA/SSRI) antidepressants, cocaine, oxycodone and aspirin (ASA) were among the most common exposures in Toxic, whereas multivitamins, hypochlorite and antihistamine (other than diphenhydramine) exposures made up a larger proportion of cases in NPDS.

**Limitations:** Toxic registry data may represent a highly urban population as compared to NPDS. Substance categories do not fully match due to innate data structure differences.

**Conclusions:** Medical toxicologists manage more cases involving atypical antidepressants, cocaine, oxycodone and ASA, which may reflect greater toxicity. The prevalence of substances in the Toxic may provide toxicologists-in-training a focus for their studies. Analysis of the NPDS/Toxic Top 10s provides the practicing toxicologist with the most likely substances to be encountered. Conformation of the different product databases is recommended.

**Table 1.** Top 10 Exposures for NPDS & ToxIC.

NPDS - Substances	Count	% of Cases	Rank on ToxIC List	ToxIC - Substances	Count	% of Cases	Rank on NPDS list
APAP	639158	5.8	1	APAP	3401	8.9	1
Ethanol	342576	3.1	3	BDZ	3000	7.8	3
BDZ	336632	3.0	2	Ethanol	2572	6.7	2
Ibuprofen	336035	3.0	13	Atypical Antipsychotics	1897	5.0	8
Multivitamins	201439	1.8	121	SSRI	1409	3.7	7
Antihistamines*	195820	1.8	32	Non-TCA/SSRI Antidepressants	1202	3.1	19
SSRI	189680	1.7	5	Diphenhydramine	1129	2.9	9
Atypical Antipsychotics	173438	1.6	4	Cocaine	924	2.4	130
Diphenhydramine	168330	1.5	7	Oxycodone	921	2.4	33
Hypochlorite	161291	1.5	79	ASA	804	2.1	30

\*Excluding Diphenhydramine and Cough & Cold Preparations