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An overview of Emergency Department poisonings in Taiwan

Hsien-Yi Chen
Department of Emergency Medicine, Chang Gung Memorial Hospital, Taoyuan, Taiwan

Objective: Poisoning is an important health problem and frequently leads to an emergency department (ED) visit. The incidence and pattern of poisoning varies from country to country and time to time. We conducted a hospital-based study to assess the pattern, etiology and clinical outcome of ED poisonings.

Methods: We retrospectively analyzed all patients with confirmed or suspected poisoning presenting to the ED of Linkou Chang-Gung Memorial Hospital (a tertiary medical center with approximately 180,000 ED visits annually) between Nov. 01, 2014 and Oct. 31, 2016. We identified cases by two methods: 1) patients who had ever been reported to our ED poisoning consultation system; 2) ICD -9 and ICD-10 code searching. The electronic medical record of all these patients was reviewed, and patients who were non-poisoning, alcohol or food poisoning were excluded.

Results: During the 2-year period, 1,535 patients presented to ED due to poisoning, corresponding to 0.44% of total ED visits. Female patients were approximately equal to male patients. Patients aged under 10 years contributed to 11% of all poisonings, and 98% of them was unintentional exposure. In contrast, 50% were unintentional poisoning in patients older than 10 years. Prescription drugs were the most common exposure type (38.3%), followed by chemical material (36.6%, including household products), pesticides/herbicides (13.2%), biotoxin (7.5%) and illicit drugs (6.1%). The detailed substances of exposure are shown in table 1. 6% patients were admitted to the ICU, and 68 (4.4%) died from poisoning. Among fatality cases, approximately 60%were due to paraquat poisoning (42 patients), followed by anticoagulant overdose (5 patients), stimulants (4 patients) and caustic agents (4 patients).

Conclusion: Our study provides an update of hospital-based acute poisoning epidemiology data in Taiwan. Paraquat remained an unbeatable cause of poisoning death. High volume of unintentional carbon monoxide poisoning indicates that household safety should be emphasized.

Table 1: Type of poison exposed. The case number includes patients with both single and multiple agent exposure. Top ten substances/toxins of exposure are shown in bold.

Exposure category (subtotal, % of all)	Specific substance/toxin	Case number
Prescription drugs (588, 38.3%)	**Sedatives/hypnotics**	**252**
	Anticoagulants	**74**
	Antidepressants	**50**
	Acetaminophen	**44**
	Antipsychotics	28
	Anticonvulsants	22
	Calcium channel/beta blockers	20
	Antihistamines	16
	NSAID	14
	Oral hypoglycemia agents	12
	Digoxin	11
	Opioid analgesics	8
Chemical materials (562, 36.6%)	**Carbon monoxide**	**250**
	Caustic agents	**103**
	Household cleaning products	**57**
	Hydrocarbons	43
	Irritant gas	29
	Desiccating agents	9
	Camphor	7
Pesticide, herbicides, rodenticide (202, 13.2%)	**Paraquat**	**74**
	pyrethrin/pyrethroid	30
	Organophosphate	24
	Rodenticide	15
	Glyphosate	14
	Carbamate	10
	Others & unknown	27
Biotoxins (115, 7.5%)	**Snake bite**	**67**
	Bees/wasps	14
	Herbal medicine	10
	Marine organism	6
	Other plants	14
Illicit drugs (93, 6.1%)	**Amphetamines & its derivatives**	**47**
	Ketamine	24
	Ecstasy	15
	Heroin	12
	Unknown stimulants	5
	Nitrogen dioxide	6
Miscellaneous		25
Total poisonings		1535