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FROM: Steven A. Seifert, MD, Medical Director
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RE: Toxicology Update

The Emergency Department is often the front line in dealing with significant toxic exposures. Here's an update.

1) We've had a name and sponsorship change. We are now the Nebraska Regional Poison Center and are sponsored by The Nebraska Medical Center, Creighton University Medical Center and University of Nebraska Medical Center. Our phone numbers, staff and services have not changed. We will continue to provide the same high quality poison center services to Nebraska and Wyoming.

2) A new topical agent, Zanfel, an abrasive agent that is also a mix of alcohol solubles and anionic surfactants, was shown to be effective in preventing or ameliorating the signs and symptoms of urushiol-induced (poison ivy, poison oak, poison sumac) dermatitis in 24 volunteers. It was effective at improving reaction and itch scores when applied at 48, 96 and 144 hours after exposure. (Davila, et al. Annals of EM, 2003;42(4):S98)

3) A new drug of abuse, "Foxy" or "Foxy Methoxy" has been reported in Michigan and several other Midwestern states. It is a synthetic tryptamine. Patients presented with hallucinations, hypertension, tachycardia, mydriasis, and waxy plasticity. Bear in mind that street drugs are notoriously impure, misrepresented and often combined, with unpredictable effects. Treatment is symptomatic and supportive. (Smolinske, et al. J Toxicol Clin Toxicol 2003;41(5):641)

4) As a first line agent, we recommend using benzodiazepines in the agitated ED patient, especially when the history is unknown and/or multiple substances may be involved. There is little downside to even high-dose benzos, as hemodynamic effects are minimal and excessive sedation can be managed with proper airway support. **Flumazenil (Romazecon®)** is *contraindicated* in most such cases, as seizures may be precipitated, unmasked or made more difficult to manage.

5) A number of ED's have started using **IM ziprazadone (Geodon®)** as an alternative to **droperidol (Inapsine®)** in the management of agitated patients unresponsive to high dose benzodiazepines. Although several small case series have shown effectiveness and not demonstrated adverse effects, it is known that ziprazadone prolongs the QTc interval, just as droperidol and **haloperidol (Haldol®)**. Although there is no "black box" warning on ziprazadone, it would be prudent to have a pre-treatment ECG with a normal QTc on any agitated, possibly polysubstance-using patient when contemplating using any agent known to prolong QTc. When a pre-dose ECG cannot be obtained, a risk-benefit analysis must be done before giving these medications. An ECG should be obtained at the earliest opportunity following the use of these drugs and patients should be monitored for several hours following use. The physician should be prepared to manage Torsades de Points should it occur (IV magnesium, lidocaine, overdrive pacing, DC shock).



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6) Airway management in the overdose setting can be challenging. The need for intubation to protect the airway, either during lavage or later in the course of CNS depression, is not uncommon. Anticipation of the need for intubation and advance preparation can help turn a crash intubation into a semi-elective one. Some points to keep in mind:

- Emptying the stomach first via an NG may decrease the risk of emesis and aspiration.
- Have all equipment and personnel assembled prior to initiation of intubation.
- Have back-up plans in place (e.g. alternative airways, anesthesiology, surgical options). Call for help early in a difficult intubation.
- Select appropriate Rapid Sequence Intubation (RSI) drugs and know the proper doses, sequences and contraindications.

- Here is a partial list of useful RSI agents:
 - Atropine 0.01 mg/kg IV (Minimum dose: 0.1 mg)
 - Prevents vagally stimulated bradycardia
 - Consider the need for increased intracranial pressure management
 - Lidocaine 1 mg/kg IV (Prevents ICP rise)
 - Fentanyl 3 ug/kg IVP
 - Consider vecuronium 1 mg as a defasciculating agent
 - Sedation
 - Preferred medications
 - Etomidate 0.2-0.3 mg/kg IVP
 - Midazolam (Versed®) 0.1 mg/kg IVP
 - Propofol (1-3 mg/kg IV)
 - Other options
 - Thiopental (Pentothal®) 3-5 mg/kg IVP
 - Ketamine 1-2 mg/kg IV
 - Diazepam (Valium®) (0.2-1.0 mg/kg IV)
 - Muscle relaxants/paralytic agents
 - Succinylcholine 1-1.5 mg/kg IV, 2-4 mg/kg IM
 - Vecuronium (Norcuron®) 0.1 mg/kg IV
 - Pancuronium (Pavulon®) 0.1 mg/kg IV

- Select the proper blades and tubes for your patient. Patient positioning, good lighting and adjunctive support (e.g. suction, cricoid pressure) are important.
- Hyperoxygenate the patient prior to your attempt. Stop to reoxygenate when saturations drop.
- Confirm the proper positioning of the tube. Listen for breath sounds. Expired CO₂ monitoring devices are most useful. CXR confirms proper depth of tube placement.