

POISONING OF A PEDIATRIC PATIENT

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I have no financial interests or
relationships to disclose



Objectives



Learning Objectives

1. To be able to identify signs and symptoms of common toxins
2. To know when and how to treat “poisoned” patients
3. To be able to identify prescription medications that can be deadly to children

Case 1

- 2 yo F drinking unknown substance from a plastic bottle. Within a day, she was lethargic, and became unresponsive. Parents took child in via private vehicle
- PE: cardiac arrest, pupils fixed and dilated
- Labs:
 - Glu 35
 - ABG – pH 6.5, lactate 17, AG 28
 - CT – anoxic brain injury
 - UDS - pending

Case 1 cont

- UDS was positive for methadone
- Head CT done and positive for anoxic brain injury.
- In the ED: intubated, CPR, epinephrine, dextrose, calcium and sodium bicarbonate with ROSC.
- Parents later disclosed that the plastic container was full of methadone
- Pt found to be brain dead, and life support taken

Case 2

- 3 yo M with Upper respiratory infection, with alternating doses of ibuprofen and acetaminophen q 4 hours x 5 days, presented to the ED with nausea, vomiting and diarrhea.
- PMH: Meds: Cough medicine (chlorpheniramine, dextromethorphan, phenylephrine, and acetaminophen), ibuprofen
- PE: VS: BP 106/66, HR 123, RR 54, T 36.8 C
 - Tachypneic, respiratory distress, abdominal tenderness
 - Became lethargic and unresponsive

Case 2 cont

- Labs:
 - ABG – pH 7.35/pCO₂ 41, pO₂ 67
 - Na 137/ K 4.2 / Cl 103 / CO₂ 10/ BUN 7/ Cr 0.8/ Glu 168
 - AG 14
 - AST 4869 / ALT 3887, Bilirubin 4.2, ammonia 62
 - INR 6/7
 - Serum acetaminophen 29.8
 - CXR – multilobar right pneumonia
 - Abdominal CT - hepatomegaly

Case 2 cont

- Admitted and treated with antibiotics
- Later tests – liver failure and elevated APAO level
- Eventually died secondary to liver failure and pneumonia

Case 3

- 12 yo F presents unresponsive after chewing fentanyl patches on a dare. Police initiated CPR prior to ED transport
- PE: BP 130/80, HR 160s, GCS 3,
 - Pupils fixed and dilated
 - Bradycardic, then lost pulses
 - Intubated, CPR, Epinephrine and naloxone
- Labs:
 - VBG: pH 7.14, AG 17, lactate 6.6

Case 3 cont

- In the ED, she was bradycardic, lost pulses
- She was intubated, received CPR, epinephrine and naloxone with ROSC
- BP 130/80, HR 15-170, GCS 3, pupils fixed and dilated

Day 2 – remained unresponsive, developed a fever, day 4 brain dead and life saving measures removed.

Case 4

- 8 mo/o M found cyanotic by his babysitter while in a bouncy seat. EMS was called and found him to have muscular rigidity consistent with rigor. Pt was brought to the ED altered and rigid. Resuscitation maneuvers were continued from EMS, but were unsuccessful. There was no ROSC.

Case 4 cont

- Eventually the babysitter admitted to giving the child 50 mg of diphenhydramine for his “fussiness”.
- Autopsy: Vitreous fluid: Na 136/ K 27 / Cl 130 / BUN 14 / Cr 0.8 / Glu 102, Mg 1.2, lactate 36.

Case 5

- 14 yo M presents via ambulance and police after parents found him unresponsive in his bedroom. Police state they found brownish substance in his room. Pt has a GCS of 8, is sleepy, but has bouts of hallucinations, nervousness, and aggression. Parents have never seen the patient in this manner before.

Case 5 cont

- Police disclosed to the ED physician, that the substance found may have been "Kratom"
- Pt was mostly obtunded during the ED stay, with occasional bouts of aggressive behavior. Pt admitted to the PICU and given Ativan and Haldol with minimal change.
- Pt had improvement of his symptoms 48 hours after admission

Pediatric patients

- Unintentional
 - General
 - Therapeutic error
 - Misuse
 - Environmental
 - Bite/sting
 - Occupational
 - Food poisoning
 - unknown
- Intentional
 - Suspected suicide
 - Misuse
 - Abuse
 - unknown

Epidemiology

- Past several decades
 - Fatalities associated with pediatric poisoning have fallen steadily
 - 450 – 1960
 - 42 – 2011
 - Interventions:
 - Child-resistant packages
 - Poison-education programs
 - Improved interventions

Epidemiology

- 2/3 of all poisonings – pediatric exposures
- 80% of all pediatric exposures – pts < 5 yo
 - Most unintentional with minimal toxicity
- Most adolescent exposures
 - Purposeful
 - Larger doses therefore greater morbidity and mortality

Pediatric fatality case review

- Cases reviewed for patients < 20 yo
 - Bimodal age distribution
 - Death ≤ 5 years → “unintentional – general”
 - Death > 13 years → “intentional”

Table 7. Distribution of reason for exposure by age.

Reason	<=5 year		6-12 year		13-19 year		>=20 year		Unknown child		Unknown adult		Unknown age		Total	
	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	%
Unintentional	926,705	62.00	112,234	6.36	56,086	3.49	434,470	27.03	3,869	0.24	68,210	4.24	8071	0.50	1,679,645	77.80
Intentional	30	0.02	13,285	3.45	102,060	26.79	52,376	68.87	206	0.05	9655	2.53	3188	0.84	390,860	18.10
Adverse reaction	3422	7.18	2576	5.40	3873	8.12	36,852	77.29	123	0.26	5945	12.47	957	2.01	53,748	2.49
Unknown	883	5.32	970	5.84	1999	12.04	11,883	71.58	65	0.39	1210	7.29	867	5.22	17,877	0.83
Other	1244	8.51	1539	10.53	1835	12.56	9271	63.45	129	0.88	2162	14.80	722	4.94	16,902	0.78
Total	1,002,344	48.48	130,604	6.32	165,853	8.02	754,852	36.51	4392	0.21	87,182	4.22	13,805	0.67	2,159,032	100.00

Route of exposure

Table 9. Route of exposure for human exposure cases.

Route	Human exposures			Fatal exposures ^a		
	N	% of all routes	% of all cases	N	% of all routes	% of all cases
Ingestion	1,810,030	79.63	83.84	1138	73.42	80.42
Dermal	152,020	6.69	7.04	15	0.97	1.06
Inhalation/nasal	133,761	5.88	6.20	136	8.77	9.61
Ocular	91,207	4.01	4.22	1	0.06	0.07
Bite/sting	43,735	1.92	2.03	5	0.32	0.35
Parenteral	20,687	0.91	0.96	92	5.94	6.50
Unknown	14,274	0.63	0.66	128	8.26	9.05
Other	2517	0.11	0.12	3	0.19	0.21
Otic	1764	0.08	0.08	0	0.0	0
Aspiration (with ingestion)	1212	0.05	0.06	32	2.06	2.26
Vaginal	987	0.04	0.05	0	0.0	0
Rectal	782	0.03	0.04	0	0.0	0
Total number of routes	2,272,976	100.00	105.28	1550	100.00	109.54 ^b

^aIncludes cases with RCF of 1 – undoubtedly responsible, 2 – probably responsible, or 3 – contributory. This excludes reports with outcome of Death INDIRECT.

^bEach exposure case may have more than one route.

Substance categories

Table 17(A). Substance categories most frequently involved in human exposures (top 25).

Substance (major generic category)	All substances	% ^a	Single substance exposures	% ^b
Analgesics	290,561	11.19	184,255	9.67
Cleaning substances (household)	195,715	7.54	176,828	9.28
Cosmetics/personal care products	186,970	7.20	180,065	9.45
Sedative/hypnotics/antipsychotics	151,620	5.84	55,314	2.90
Antidepressants	122,975	4.74	51,509	2.70
Antihistamines	108,777	4.19	75,833	3.98
Cardiovascular drugs	107,493	4.14	46,890	2.46
Foreign bodies/toys/miscellaneous	93,911	3.62	90,667	4.76
Pesticides	83,559	3.22	77,573	4.07
Topical preparations	72,134	2.78	70,352	3.69
Alcohols	72,088	2.78	22,289	1.17
Stimulants and street drugs	66,132	2.55	36,486	1.91
Vitamins	63,931	2.46	54,276	2.85
Anticonvulsants	63,488	2.45	25,844	1.36
Hormones and hormone antagonists	57,316	2.21	38,090	2.00
Cold and cough preparations	56,720	2.19	39,435	2.07
Antimicrobials	55,654	2.14	45,180	2.37
Dietary supplements/herbals/homeopathic	51,272	1.98	42,523	2.23
Gastrointestinal preparations	49,443	1.90	36,158	1.90
Bites and envenomations	48,423	1.87	46,989	2.47
Plants	47,793	1.84	45,150	2.37
Chemicals	39,807	1.53	33,910	1.78
Fumes/gases/vapors	34,345	1.32	31,337	1.64
Other/unknown non-drug substances	29,968	1.15	27,350	1.44
Hydrocarbons	29,796	1.15	27,807	1.46

^aPercentages are based on the total number of substances reported in all exposures (N = 2,595,526).

^bPercentages are based on the total number of single substance exposures (N = 1,905,848).

Substance categories ≤ 5 years

Table 17(C). Substance categories most frequently involved in pediatric (≤ 5 years) exposures (top 25)^a.

Substance (major generic category)	All substances	% ^b	Single substance exposures	% ^c
Cosmetics/personal care products	138,904	13.29	136,004	13.98
Cleaning substances (household)	115,701	11.07	111,445	11.45
Analgesics	96,312	9.21	87,710	9.02
Foreign bodies/toys/miscellaneous	67,771	6.48	65,864	6.77
Topical preparations	52,984	5.07	52,030	5.35
Antihistamines	47,476	4.54	43,143	4.43
Vitamins	46,306	4.43	41,912	4.31
Pesticides	34,608	3.31	33,458	3.44
Dietary supplements/herbals/homeopathic	34,443	3.29	32,059	3.30
Plants	28,636	2.74	27,565	2.83
Gastrointestinal preparations	27,617	2.64	24,933	2.56
Antimicrobials	24,710	2.36	23,274	2.39
Cardiovascular drugs	21,940	2.10	13,824	1.42
Cold and cough preparations	21,098	2.02	19,267	1.98
Arts/crafts/office supplies	20,723	1.98	20,096	2.07
Electrolytes and minerals	18,420	1.76	16,700	1.72
Hormones and hormone antagonists	18,416	1.76	14,346	1.47
Deodorizers	17,611	1.68	17,398	1.79
Essential oils	13,981	1.34	13,264	1.36
Other/unknown nondrug substances	12,907	1.23	12,118	1.25
Tobacco/nicotine/eCigarette products	11,462	1.10	11,358	1.17
Antidepressants	11,390	1.09	8244	0.85
Sedative/hypnotics/antipsychotics	10,498	1.00	8119	0.83
Chemicals	10,111	0.97	9328	0.96
Alcohols	9838	0.94	9562	0.98

^aIncludes all children with actual or estimated ages ≤ 5 years old. Results do not include "unknown child" or "unknown age".

^bPercentages are based on the total number of substances reported in pediatric exposures (N = 1,045,339).

^cPercentages are based on the total number of single substance pediatric exposures (N = 972,914).



Substances most frequently involved in pediatric deaths ≤ 5 years

Table 17(E). Substance categories most frequently involved in pediatric (≤ 5 years) deaths^a.

Substance (major generic category)	All substances	% ^b	Single substance exposures	% ^c
Fumes/gases/vapors	12	18.18	8	21.62
Analgesics	11	16.67	9	24.32
Cardiovascular drugs	7	10.61	1	2.70
Antidepressants	6	9.09	1	2.70
Antihistamines	5	7.58	3	8.11
Batteries	4	6.06	4	10.81
Unknown drug	4	6.06	4	10.81
Stimulants and street drugs	3	4.55	1	2.70
Chemicals	2	3.03	0	0.00
Pesticides	2	3.03	1	2.70
Plants	2	3.03	2	5.41
Sedative/hypnotics/antipsychotics	2	3.03	0	0.00
Alcohols	1	1.52	1	2.70
Antimicrobials	1	1.52	0	0.00
Cosmetics/personal care products	1	1.52	1	2.70
Dietary supplements/herbals/homeopathic	1	1.52	1	2.70
Diuretics	1	1.52	0	0.00
Hormones and hormone antagonists	1	1.52	0	0.00
Total	66	100.00	37	100.00

^aIncludes all children with actual or estimated ages ≤ 5 years old. Results do not include "unknown child" or "unknown age". Includes death and death, indirect regardless of RCF.

^bPercentages are based on the total number of substances reported in pediatric fatalities (N = 66).

^cPercentages are based on the total number of single substance pediatric fatalities (N = 37).



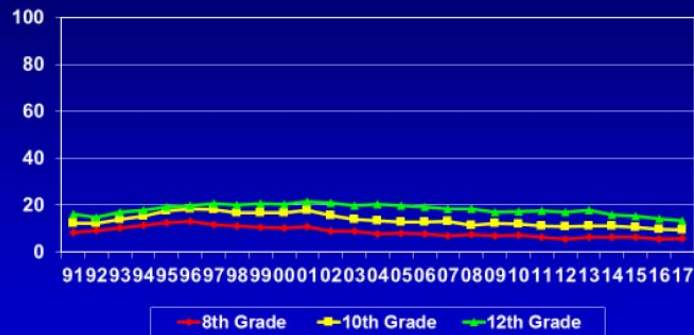
Commonly abused drugs

- Alcohol
- Ayahuasca
- CNS Depressants
- Cocaine
- DMT
- GHB
- Hallucinogens
- Heroin
- Inhalants
- Ketamine
- Khat
- Kratom
- LSD
- Marijuana
- MDMA (Ecstasy/Molly)
- Mescaline (peyote)
- Methamphetamine
- OTC – Dextromethorphan
- OTC – Loperamide
- PCP
- Rx Opioids

Commonly abused drugs

- Rx Stimulants
- Psilocybin
- Rohypnol (Flunitrazepam)
- Salvia
- Steroids (anabolic)
- Synthetic Cannabinoids
- Synthetic Cathinones (Bath salts)
- Tobacco

Percent of Students Reporting Any Illicit Drug Use Other than Marijuana in Past Year, by Grade



SOURCE: University of Michigan, 2017 Monitoring the Future Study

History

- Difficult
 - Age
 - Altered
- If able, obtain:
 - Identification of substance
 - Time of ingestion
 - Amount of ingestion
 - Other medications in the home

“one pill can kill”... important History to obtain for infants / toddlers

- Oral hypoglycemics
- β -blockers
- Calcium channel blockers
- α -2-adrenergic agonists
- Cyclic antidepressants
- Opioids
- Buprenorphine
- Loperamide & diphenoxylate
- Salicylates
- Quinine & quinidine
- Camphor
- Podophyllin & colchicine
- Acetylcholinesterase inhibitors

“one pill can kill” ...

- α -2 adrenergic agonist
 - Bradycardia and hypotension, decreased level of consciousness, miosis and respiratory depression
 - Common agents:
 - Clonidine, brimonidine tetrahydrozoline (Visine) and oxymetazoline (Afrin)
- Oral hypoglycemics
 - Meds for T2DM
 - Hypoglycemia may occur 18-24 post ingestion
 - Requires admission with q1-2 hr glucose checks

“one pill can kill” ...

○ CCBs (calcium channel blockers)

- Decreased cardiac inotropy
- Increase vasodilation
- Blocks insulin secretion
- Effects may appear 18-24 hours post ingestion (long-acting CCB's)
- Common CCBs
 - Amlodipine, nicaripine
 - Verapamil, diltiazem

“one pill can kill” ...

○ β -blocker

- Decrease heart rate, hypoglycemia (blocks glycogenolysis), mental status depression
- Propranolol >> atenolol

○ Cyclic antidepressants

- Block fast sodium channels → intraventricular conduction delay
 - Wide QRS → prolonged QTc
- Common meds: imipramine, desipramine, amitriptyline

“one pill can kill” ...

- ◉ **Buprenorphine** – opioid agonist / antagonist
 - Eg. Subutex / Suboxone (to treat opioid addiction)
 - Significant respiratory depression in children after only 1 lick
- ◉ **Loperamide & Diphenoxylate**
 - Active ingredients in antidiarrheals (Iomotil, Imodium).
 - Depressed mental status and severe respiratory depression

“one pill can kill”

- ◉ **Quinine & quinidine**
 - Na-channel block
 - QRS widening and arrhythmias, hypokalemia-related QTc prolongation and torsades de pointes
 - Cause cinchonism (blurred vision, hearing impairment, and flushing – minor; deafness, blindness and cardiac arrhythmias – severe)
- ◉ **Oral Acetylcholinesterase inhibitors**
 - Cholinergic poisoning

Physical examination

- Key factors in helping identifying toxidrome / toxicity:
 - Vital signs
 - Level of consciousness
 - Pupil size
 - Coma / seizures
 - Skin exam
 - Odor

Common Toxidrome - CHOLINERGIC

- E.g. **organophosphates, carbamates, psilocarpine**
- **DUMBELLS**
 - Diarrhea, diaphoresis
 - Urination
 - Miosis
 - Bradycardia, bronchosecretions
 - Emesis
 - Lacrimation
 - Lethargic
 - Salivation

Common Toxidrome – Nicotinic

- **MTWTFSS**
 - Mydriasis
 - Tachycardia
 - Weakness
 - Tremors
 - Fasciculations
 - Seizures
 - Somnolent

Common Toxidrome - Opioid

- Eg. Heroin, morphine, codeine, methadone, fentanyl, oxycodone, hydrocodone
- Everything slows down
 - Miosis
 - Bradycardia
 - Hypotension
 - Hypoventilation
 - Coma

Common Toxidrome – Anticholinergic

- Eg. Antihistamines, cyclic antidepressants, atropine, benztropine, phenothiazine, scopolamine
 - Hyperthermia (HOT as a hare)
 - Flushed (RED as a beet)
 - Dry skin (DRY as a bone)
 - Dilated pupils (BLIND as a bat)
 - Delirium, hallucinations (MAD as a hatter)
 - Tachycardia
 - Urinary urgency and retention

Common Toxidrome - withdrawal

- Diarrhea
- Mydriasis
- Goose flesh
- Tachycardia
- Lacrimation
- Hypertension
- Yawning
- Cramps
- Hallucinations
- Seizures (with ETOH and benzodiazepine withdrawal)

Common Toxidrome - sympathomimetic

- Eg: cocaine, amphetamines, ephedrine, phencyclidine, pseudoephedrine
 - Mydriasis
 - Tachycardia
 - Hypertension
 - Hyperthermia
 - Seizures

Odors suggestive of Diagnosis

Odor	Possible source
Bitter almonds	Cyanide
Carrots	Cicutoxin (water hemlock)
Fruity	DKA, isopropanol
Garlic	Organophosphates, arsenic, DMSO, selenium
Gasoline	Petroleum distillates
Mothballs	Napthalene, camphor
Pears	Chloral hydrate
Pungent aromatic	Ethchlorvynol
Oil of wintergreen	Methyl salicylate
Rotten eggs	Sulfur dioxide, Hydrogen sulfide
Freshly mowed hay	Phosgene

Laboratory workup

- ◉ Guided by specific drug / poison
 - Acetaminophen – CMP (assess hepatic damage)
 - Ethylene glycol – BMP (Cr / BUN – renal damage)
- ◉ If unknown:
 - CMP, blood gas
- ◉ Calculate anion gap with metabolic acidosis
 - $[Na] - ([HCO_3] + [Cl])$

Elevated anion Gap acidosis

* AG > 12 mEq/L

- | | |
|--|--|
| <ul style="list-style-type: none"> ◉ METAL <ul style="list-style-type: none"> • Methanol, metformin, massive overdoses • Ethylene glycol • Toluene • Alcoholic ketoacidosis • Lactic acidosis ◉ ACID <ul style="list-style-type: none"> • Acetaminophen (large ingestion) • Cyanide, CO, colchicine • Isoniazid, iron, ibuprofen (lg ingestion) • DKA | <ul style="list-style-type: none"> ◉ GAP <ul style="list-style-type: none"> • Generalized seizure-producing toxins • Acetylsalicylic acid or other salicylates • Paraldehyde, phenformin |
|--|--|

Laboratory workup

- Concern of possible toxic alcohol ingestion – Methanol, ethylene glycol, mannitol, acetone or isopropanol → Calculate Osmol gap
 - Normal < 10
 - Serum osmolality – calculated Osmolarity
 - Calculated Osmolarity:
 - $2 * [Na] + [glucose] / 18 + [BUN] / 2.8$

Laboratory / Radiology workup

- Toxicology “screen” of blood / urine → rarely contribute to ED management
 - False negatives and false positives are frequent
- Abdominal X-ray
 - Important for Iron poisoning

Management



Management

- ◉ ABC's
 - Prior to antidote or gastric decontamination → resuscitate first and foremost.
- ◉ After resuscitation
 - AMS → glucose check
 - Hypoglycemia → IV **dextrose**: 2 mL/kg D25W
 - If no IV → 1 mg **glucagon** IM
 - Lethargy / coma with bradypnea & miosis
 - Consider **Naloxone** 0.1 mg/kg IV or **2 mg** in pts > 20kg

Management

- Pt with hallucinogen-induced behavioral changes
 - Place in a calm and relaxed environment
 - +/- physical restraints
 - +/- chemical restraints
 - Liberal doses of **benzodiazepines**
 - * **Haloperidol** – if benzos alone not working
 - Needs cardiac monitoring → QT prolongation / torsade de pointes
 - Lowers seizure threshold
 - Temperature dysregulation

* Caution with Haloperidol

Management

- Hyperthermia with agitated delirium → OMINOUS and life-threatening
 - AGGRESSIVE TREATMENT**
 - **Rapid cooling measures**
 - Possible paralysis required
 - Hydration
 - Observe for rhabdomyolysis

Management

- ◉ GI decontamination
 - *Ipecac-induced emesis, gastric lavage and cathartics* → **NO longer considered**
- ◉ **Activated Charcoal**
 - Odorless / tasteless black powder
 - Adsorbs various toxins
 - Given if toxic amount of adsorbable poison was taken **1 hour prior**
 - **25 g** < 6 yo
 - **50 g** – adolescents / adults

Management – Activated charcoal

- ◉ **Substances activated charcoal will not adsorb:**
 - **PESTICIDES**
 - **ACIDS**
 - **ALKALIS**
 - **ALCOHOLS**
 - **METALS (FE, PB, LI, BORATES)**
 - **SOLVENTS**

Management



- Whole Bowel Irrigation
 - “flushes” the toxin through the GI tract
 - PEG (Polyethylene glycol electrolyte) solution
 - Does not create fluid or electrolyte disturbances
 - 500 mL/h (sm children)
 - 1-2 L / h for adolescents
 - Continue irrigation until rectal effluent is clear → 4-6 hours

Management – Whole Bowel Irrigation

- No conclusive evidence that WBI improves clinical outcome of poisoned patients
- Utilized in patients who are hemodynamically stable with normal bowel function and anatomy
- Ideal for sustained release or enteric-coated drugs, iron, and packets of illicit drugs

Management – Enhancing elimination

- Removes toxin after absorption has occurred
- Multiple-dose-activated Charcoal
 - Repeated doses of A.C.
 - 10-25g q 2-4 hours
 - Poisoning with: carbamazepine, dapsone, phenobarbital, quinine, or theophylline
- Urinary Alkalinization
 - Na bicarbonate IV; enhances excretion of weak acids
 - Salicylate or phenobarbital

Management - Enhancing elimination

- **Extracorporeal elimination**
 - Hemodialysis, hemoperfusion, continuous veno-venous hemofiltration (CVVH), and continuous veno-venous hemodialysis (CVVHD)
- Indicated in **salicylate, phenobarbital, methanol, ethylene glycol and lithium poisonings**
- Require nephrology and critical care

Antidotes

Poison	Antidote
Acetaminophen	N-Acetylcysteine
Anticholinergics	Physostigmine
β -blockers	Glucagon; Insulin / glucose
Ca-channel antagonists	Insulin / glucose
Carbamate insecticides	Atropine
Cyanide	Hydroxycobalamin
Digoxin; digitoxin	Fab antibody fragments
Ethylene glycol	Fomepizole
Heavy metals	Chelators
Isoniazid	Prydoxine
Iron	Deferoxamine

Antidotes

Poison	Antidote
Methanol	Fomepizole
Methemoglobinemia	Methylene blue
Opioids	Naloxone
Organophosphates	Atropine and pralidoxime
Sulfonylureas	Octreotide
Tricyclic antidepressants	Sodium bicarbonate
Valproic acid	Carnitine
Warfarin	Vitamin K



Disposition



- Critical care setting : unstable patients
- ED 6-8 hours : Stable and low concern for serious intoxication
- 24 hour observation : **Intoxication of**
 - **Modified release pharmaceuticals**
 - **Sulfonylureas**
 - **Clonidine**
 - **Calcium channel antagonists**
 - **Lithium**
 - **Methadone**
 - **Monoamine oxidase inhibitors**
- Others:
 - Variable
 - Clinical **and social factors** need to be assessed



What else to know about...

New drugs on the street...

- **Flakka** – aka “gravel”



- **Kratom**

- DEA – “drug of concern”



- **Spice**

- Marijuana alternative
- Paranoia and panic attacks



New drugs on the street...

- **“Vitamin K” or “Special K”**

- Ketamine



- **Smiles**

- 251-NBOMe
- Psychedelic drug



- **Molly**

- DEA – “dangerous Schedule I controlled substance”



New drugs on the street...

- **Acetyl Fentanyl**

- 5x more potent than heroin
- CDC advisory recommends
 - Naloxone – antidote



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