



Case Studies in Pediatric Toxicology

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CASE EXAMPLE: 1

- A previously healthy 3 year old child presents in the Emergency Department with delayed capillary refill (3-4 seconds) and a pulse of 45, blood pressure of 70/40. There is no respiratory distress (RR 30) and the child responds to pain and loud verbal command. There has been no fever or cardiac history. The child has been at the grandparent's house all evening and the grandfather is missing all of his "blood pressure pills". A tox screen is negative.

B-Blocker

CASE EXAMPLE: 2

- A previously healthy 3 year old present to the Emergency Department with delayed capillary refill (3-4seconds) and a pulse of 160, blood pressure of 70/40. There is no respiratory distress (RR 10) and the is obtunded and responds only to deep pain but not verbal command. The gag is weak and the tine “floppy”. The pupils are noted to be small, midposition and non-reactive. The child had been at the grandparent’s house all evening and the grandfather is missing all of his “seizure pills.”

0 Barb

CASE EXAMPLE: 3

- A previously healthy inner city 8 year old presents to the Emergency Department with visual hallucinations, tachycardia (HR 180 ST), widely dilated pupils (7mm bilaterally), and intermittent tonic/clonic seizures. His BP is 150/96 and there is no respiratory distress. Brief neuro exam is non-focal but agitation is prominent. The patient is warm, flushed, the mucosa is dry and bowel sounds are absent. He was noted to be healthy that morning, and had been playing with his friends in the vacant next door lot. A tox screen is negative.

Anti-cholinergic (Jimson Weed)

CASE EXAMPLE: 4

- A 2 year old (15kg) healthy child is found smiling and playful next to an empty bottle which previously had at least 30 x 500mg extra strength acetaminophen tablets in it. The child has started to vomit (no pill fragments) and was thought to be taking a nap (unwitnessed) for about 3 hours. Her VS are normal for age except for the vomiting, she appears comfortable and well perfused.

Acetaminophen

CASE EXAMPLE: 5

- A 10 month old infant presents to the Emergency Department with lethargy and diaphoresis. He is sleepy and not easily aroused, but in no respiratory distress. His VS are a HR of 170 (ST), RR 24 and unlabored, BP 80/60, and capillary refill of 1-2 seconds. His skin is cool and “clammy”. History is negative for fever, change in behavior, or unknown ingestion. He was crawling around the bathroom at his grandmother’s (baby-sitter) house. His tox screen is negative. On labs his glucose is <20mg/dL.

Oral hypoglycemic

CASE EXAMPLE: 6

- A 2 year old inner city toddler presents to the Emergency Department with lethargy and large bruises. He has vomited blood twice and is not responsive to verbal command. He has no respiratory distress but his capillary refill is 3 seconds and his HR is 180 (ST) and BP 70/40. His Hgb is 6 and platelets are 400K. As you attempt IV's he continues to ooze blood from iV sites. A PT/PTT is 21/40. He has no prior medical history. By the parent's report, 2 other playmates of his have been taken to their doctors with "easy bruising" today.

Rat Poison (Warfarin)

CASE EXAMPLE: 7

- A 12 year old is found encephalopathic near the garage, where her parent was working on the car all day. The child is combative and acidotic on repeat exams. The HR is 170 (ST) , BP 150/84, but capillary refill is 5 seconds and ABG shows a metabolic acidosis. 7.10/25/90 on room air. Blood sugar is 50, and WBC 25K, Na 140, K 5.5, CL 105, HCO₃ 5, BUN 35, Cr 1.5 and Ca 7.0. She progressively becomes more somnolent, obtunded and then comatose. Her UA shows SG 1.010, 2+ protein, 2+ heme, 0 RBC, and numerous oxalate crystals. There are no external signs of trauma.

Ethylene glycol

CASE EXAMPLE: 8

- A 13 year old comes in with chest pain and a pulse of 150. She is drowsy but responsive. Her perfusion is decreased; capillary refill 5 seconds but she is in no respiratory distress. Her BP is 76/30 and her skin is cool and pale. She claims she found out she was pregnant today. There is no history of bleeding. On the monitor, her rhythm strip shows wide complex tachycardia.

TCA

CASE EXAMPLE: 9

- A 6 month old child presents with tachypnea, high fever, decreased feeding tolerance and smells like “wintergreen”. There are no classic signs of meningitis. The family says that child has had a cold and they have been rubbing the great-grandmother’s salve from the “old country” on the child’s chest and back.

ASA

CASE EXAMPLE: 10

- A 3 year old presents with nystagmus, lethargy, ataxia and increased sleepiness. His cousin has a history of seizures and he was at his cousin's house today. An EKG shows a prolonged QT c and he begins to have tonis/clonic seizures. A toxicology screen is negative.

Tegretol (Carbamazepine)

CASE EXAMPLE: 11

- A previously healthy 3 year old presents to the Emergency Department with visual hallucinations, tachycardia (HR 180, ST), widely dilated pupils (7mm bilaterally), and intermittent tonic/clonic seizures. His BP is 150/96 and there is no respiratory distress. Brief neuro exam is non-focal but agitation is prominent. The patient is warm, flushed, the mucosa is dry and bowel sounds are absent. He was in his usual state of health except for a URI, for which his parents had treated him with 2 tablespoons of Pediacare infant drops 4 times a day for 2 days. A tox screen is called back as positive for amphetamines and LSD screens.

Antihistamine

CASE EXAMPLE: 12

- A 4 month old infant is brought to the Emergency Department for intermittent apnea, opisthotonic and writhing movements with increased tone, and a guttural “clucking” sound coming from the throat. The child has a heart rate of 110(ST), BP 110/80, RR 26 (somewhat irregular), and capillary refill of 2 seconds. The eyes are glazed and not focused, but there is no true focality to the exam. There are no external signs of trauma. The child’s clothes smell like “cigarette smoke”.

PCP

CASE EXAMPLE: 13

- A 3 year old child is brought to the Emergency Department for drowsiness, hypoventilation/apnea and cyanosis. He has a family history of sickle cell anemia, and 3 siblings are treated for SS crisis frequently. On exam, he is lethargic, with pinpoint pupils, and decreased gag response. His HR is 90 (ST), BO 80/50, RR 6 and irregular.

Narcotic

CASE EXAMPLE: 14

- A 2 year old toddler presents to the Emergency Department with lethargy and large bruises. He has vomited blood twice and is not responsive to verbal command. He has no respiratory distress but his capillary refill is 3 seconds and his HR is 180 (ST) and BP 70/40. His hgb is 6 and platelets are 400K. As you attempt IV's he continues to ooze blood from IV sites. A PT/PTT is 21/70. He has no prior medical history. By the parent's report, he was at his pregnant aunt's house and was seen to have something that looked a peanut "M" and "M" in his mouth.

Iron Ingestion

CASE EXAMPLE: 15

- A toddler is brought to the Emergency Department with a HR of 60, RR 24 and BP 74/46. He otherwise looks a little dazed, but responds to command, and is, in no acute distress. Capillary refill is 2 seconds. The parents relate that his relatives are trying to quit smoking, and had just changed their prescription transdermal patches. The toddler picked the patch out of the trash and was seen with it in his mouth.

Clonidine

CASE EXAMPLE: 16

- A previously healthy 3 year old child presents to the Emergency Department with delayed capillary refill (3-4 seconds) and a pulse of 45, blood pressure of 70/40. There is no respiratory distress (RR 30) and the child responds to pain and loud verbal command. There has been no fever or cardiac history. The child had been at the grandparent's house all evening, and the grandfather is missing all of his "blood pressure pills". A tox screen is negative.

Digoxin

CASE EXAMPLE: 17

- **A previously healthy 3 year old child presents to the Emergency Department with delayed capillary refill (3-4 seconds) and a pulse of 180, blood pressure of 70/40. There is no respiratory distress (RR 30) and the child responds to pain and loud verbal command. There has been no fever or cardiac history. The child had been at the grandparent's house all evening, and the grandfather is missing all of his "blood pressure pills". A tox screen is negative.**

Ca Channel Blocker

CASE EXAMPLE: 18

- A 5 year old is found in a barn on a tobacco farm downstate seizing. On arrival in the Emergency Department , the patient has copious oral secretions and vomiting, generalized seizures, pinpoint pupils, profuse sweating and diarrhea, and bradycardia (HR 60 SR). The patient is weak and floppy. His breath smells like garlic.

Organophosphates

CASE EXAMPLE: 19

- A 2 year old is found in her country backyard, lethargic with copious diarrhea. On arrival in the Emergency Department, the patient has copious oral secretions and vomiting, pinpoint pupils, profuse sweating and diarrhea and bradycardia (HR 60 SR). She seems to be hallucinating.

Mushrooms

CASE EXAMPLE: 20

- **A 2 month old breast fed infant presents with lethargy, weakness, shallow and tachypenic breathing without distress, decreased DTR's, constipation, and CN VI palsy. Pupils are sluggishly reactive and gag is weak, but the baby is easily arousable, cries with stimulation, and otherwise seems alert**

Botulism

CASE EXAMPLE: 21

- Infant HTN, bradycardia, irregular respiration small, non reactive pupils and impaired gag.

NA Trauma

CASE PROGRESSION

- **The child was recently at the grandparents house**
- **A urine tox screen is negative**
- **The ECG shows sinus bradycardia with normal intervals, and the rate does not accelerate with stimulation**
- **IV fluid does not improve perfusion**

SUMMARY

- **Beta-Blocker overdose is suspected**
- **IV Glucagon is considered**
- **Cardiac pacing is considered**
- **Direct cardiac stimulants (Beta-agonists) are reasonable for the symptomatic patient**
- **Atropine is unlikely to improve the bradycardia in this case**