



OMG- There is a Kid in my Rig!!

Interesting Cases in Pediatric Emergency Medicine



Children's Hospital Colorado

Affiliated with



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Financial Disclosures

- No relevant financial relationships with any commercial interests.

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Objectives

- How to approach stabilize and treat burn patient prior to arrival to emergency department
- Discuss work-up/management of seizing patient
- Discuss the causes and treatment of common pediatric respiratory issues in pre-hospital setting.



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3 yo Burn

- 19:15 called to EMS: "Please hurry, my 3 year old pulled pot of boiling noodles down on herself and she is burned really bad"
- 15 minute transit time to scene
 - What are you thinking in route to patient?
 - What might you want to get ready?

3 yo Burn

- 19:28 arrive at scene:
- Family was making dinner and had electric hot plate on kitchen table cooking Ramen on it. Pt pulled on cord of electric hot plate and pot of boiling Ramen spilled down on to child.
- Parent put butter on burn area to help with pain.
- Pt being held by MOC and crying/screaming.



Burn thickness categories

- Superficial (first-degree) burns.
 - Affect only the epidermis, or outer layer of skin.
 - What you see: red, painful, dry, and with **no blisters**.
- Partial thickness (second-degree) burns.
 - Involve the epidermis and part of the dermis layer of skin.
 - What you see: red, blistered, and may be swollen and painful.
- Full thickness (third-degree) burns.
 - Burn destroy the epidermis and dermis and may go into the subcutaneous tissue.
 - What you see: may appear white or charred. Less painful than partial thickness if nerves are destroyed
- Fourth degree burns.
 - Damage to the underlying bones, muscles, and tendons. There is no sensation in the area since the nerve endings are destroyed.



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3 yo Burn

- What else do you want to know?
- What do you want to do for the patient?



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Intranasal Fentanyl

- Rapid, virtually painless, non invasive administration
- Highly fat soluble drug and intranasal route bypasses first pass metabolism
- Therapeutic levels in 5-10 min
- Duration of action 30 to 60 min
- Less likely to cause hemodynamic instability or respiratory compromise
- Side Effects
 - Mild N/V; sedation
 - Mild respiratory depression
 - Itchy nose



Fast and effective

intranasal medication delivery a viable option to
IM/IV/rectal dosing in select cases

Reduces pain and bleeding

associated with nasal and oral instrumentation
and nasogastric tube placement

Controlled delivery

for topical anesthetics and vasoconstrictors

Intranasal Fentanyl - Dosing

- Based on age and weight
 - Solution 100mcg/2ml
 - average dose~ **1.5 mcg/kg**
 - Dose may be repeated at 10min if no effect

Intranasal Fentanyl

- **Contraindications**

- Rapid IV access needed for stabilization
- Allergy to Fentanyl / Opioids
- Altered conscious state/Head Injury
- Current URI or nasal infection/obstruction

- **Advantages**

- Effective and well tolerated route of administration
- Good safety profile/suitable for pre-hospital use
- Can titrate dose to effect
- No need for painful IV placement

3 yo Burns

- Broselow Tape used for weight estimation
- Pt given IN Fentanyl
- IV placement? Where? Why?
- Dressings to burns?
 - Wet or dry?

Burn Dressing

- Small burns (e.g., a burn to the hand) can be covered initially with gauze and saline.
 - Wet, cool dressings feel better, and there is very little likelihood of developing hypothermia from a burn to an isolated area.
- Serious or "bad burns" should be covered loosely with dry dressings.
 - This can be accomplished by simply putting clean, dry sheets (sterile if available, but not mandatory) under and over the patient, with a blanket on top to prevent heat loss (even in summer).
 - The rationale for "dry dressings" is that they cover the burn but do not add to potentially life-threatening hypothermia.

Burn Surface Area Estimation

- Only count partial thickness or deeper wounds
 - Superficial burn area not to be included in estimation
- Rules of 9s
 - Complicated and impossible to remember
 - In the rule of nines we divide major body regions into percentages.
 - The head is 9%.
 - The chest and back are both 18% respectively.
 - Each leg is also 18%.
 - Each arm is given 9%
 - Genitalia add the remaining 1
- The palm of patient's hand is equal to 1%

Burn treatment IVF by EMS

- For children, a 20cc/kg fluid bolus should be administered, as with any pediatric trauma patient. In many cases, by the time the bolus is infused, the patient will be at the ED
- The Prehospital Advanced Burn Life Support (ABLS) course simply recommends:
 - 150cc/hr for patients under five years of age
 - 250cc/hr for patients from five to 15 years of age
 - 500cc per hour for those over 15 years of age.

18 month old seizure

- 22:15 Call to EMS: "Please get here right away, my baby is having a seizure. He won't stop shaking."
- 22:27 Arrive at scene
 - Pt not actively seizing, asleep in arms of parent
 - Parents markedly upset
- Hx: No hx of seizures. 1 days of vomiting and low grade fever. Has felt warm but no temp taken.

18 month old seizure

T: 100.2 HR:172 Pox: 94% on RA

Gen: Sleepy but arouses slightly with exam attempt

HEENT: Small 0.75 cm area of redness/scratch to forehead; clear nasal discharge

Eyes No eye deviation; pupils sluggish but reactive.

Neck: Supple

Heart: S1 S2 Tachy

Lungs: clear

18 month old seizure

- What do you want to know?
- What do you want to do?
 - Labs?
 - Medications?
 - IV?
- What do you think is going on?

18 month old seizure

Differential Diagnosis of First Time Seizure:

- Febrile seizure
- Head trauma/NAT
- Hypoglycemia
- Brain mass/bleed
- Meningitis/CNS infection
- Seizure disorder
- Electrolyte abnormalities

Febrile Seizure

- Criteria for Simple Febrile Seizure
 - Age: 6mo-5 years
 - Generalized tonic-clonic seizure
 - Last less than 15 minutes
 - Must be febrile: Temp > 38.0 (100.4) or reported fever
 - Return to baseline within timely manner
- 2-5% of children are affected
- Peak incidence is 18 months
- Initial febrile sz: 5% before age 6mo; 5% after age 5 yrs
- Risk of future febrile sz: 30-50% will have 2nd; 10% will have more than 2 febrile sz.

Febrile Seizure

- Workup
 - Most simple febrile seizures require no workup.
 - If ill appearing or signs of SBI, then workup may include LP
 - Most do not require head imaging, bloodwork, and/or EEG
- Treatment- Most need no treatment
 - Treat seizures if longer than 15 minutes
 - IN midazolam (0.2mg/kg with max of 10mg)
 - Rectal diazepam
 - IV lorazepam 0.1mg/kg (max 4mg)
 - IV diazepam 0.2mg/kg (max 10 mg)
- Prevention
 - Treat fevers, but this does not necessary prevent febrile seizure

18 month old seizure

Differential Diagnosis of First Time Seizure:

- Febrile seizure
- Head trauma/NAT
- Hypoglycemia
- Brain mass/bleed
- Meningitis
- Seizure disorder
- Electrolyte abnormalities

Hypoglycemic Seizures

- Usually blood glucose less than 40
- Differential diagnosis of Hypoglycemic Sz
 - Dehydration/poor PO intake
 - Medications
 - Metabolic disorder
- Treatment: Give dextrose

Dextrose for “Little Adults”

| | Rule of 50 (how to give 0.5g/kg of dextrose) |
|-----|---|
| D50 | ___ml/kg |
| D25 | ___ml/kg |
| D10 | ___ml/kg |

Dextrose for “Little Adults”

| | Rule of 50 (how to give 0.5g/kg of dextrose) |
|-----|---|
| D50 | 1 ml/kg |
| D25 | ___ml/kg |
| D10 | ___ml/kg |

Dextrose for “Little Adults”

| | Rule of 50 (how to give 0.5g/kg of dextrose) |
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| D25 | 2 ml/kg |
| D10 | ___ml/kg |

Dextrose for “Little Adults”

| | Rule of 50 (how to give 0.5g/kg of dextrose) |
|-----|---|
| D50 | 1 ml/kg |
| D25 | 2 ml/kg |
| D10 | 5 ml/kg |

Why move away from D50

- D50
 - Hypertonic solution w/ osmolarity of approximately 2,525 mOsm/L and a pH between 3.5 and 6.5.
- Most IV infusion resources recommend infusing medications with an osmolarity > 900 via a central line.
 - These recommendations are based on clinical and physiological evidence of increased rates of phlebitis and thrombophlebitis of drugs with osmolarities > 900 mOsm/L.
 - Thus, local venous irritation and/or thrombophlebitis can occur with dextrose administration.
 - Extravasation of dextrose can result in significant tissue necrosis, and cases of amputation after D50 extravasation
- D10
 - osmolarity of 506 mOsm/L and is within the range of safer peripheral administration.



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How to make D10 from D50

"The D that you want is the D that you keep"



18 month old seizure

- Blood glucose: 68
- Does an IV help?
- Any other things you want to do?
 - EKG?
 - Draw labs?
 - Lactate?



“My baby is having trouble breathing”

- What are you thinking of in route to scene?
- What are primary causes of respiratory distress in pediatric patients?
- What equipment/medications are you getting ready?

“My baby is having trouble breathing”

- 4 yo with 1 day history of cough, congestion, and fever of 101.
- Woke up from sleep with difficulty breathing.
- FOC and 15 yo brother Covid + 2 days ago



ABC of Pediatric Breathing Issues

- Majority of respiratory issues caused by the BIG THREE of pediatric respiratory diseases

Asthma

Bronchiolitis

Croup

4 yo Respiratory Distress

- 00:22 Arrive at scene
- Pt in arms of mother; loud breathing; fussy/crying
- HR: 185 RR: 60 Pox: 87% Temp: 102.8
- What else do you want to ask?
- What physical exam findings are you looking for?
- What do you want to do?

4 yo Respiratory Distress

Physical Exam:

- General: Anxious/scared
- Mucous membranes dry, no lesions; + nasal discharge.
- Chest: intercostal and suprasternal retractions; loud
- Circulation = skin pale, mottled extremities, tachycardic
- Vitals: HR: 185 RR: 40 Pox: 92% Temp: 102.8

Now what?

Croup vs Asthma vs Bronchiolitis

Croup

- Upper
- Viral etiology
- Can't getting air in
- Barky cough
- Stridor
- Middle of the night

Asthma

- Lower
- Viral/allergy/irritant /???
- Can't getting air out
- Tight cough
- Wheezing
- All day/night





Bronchiolitis

- Upper and lower
- Viral etiology
- Hypoxia/WOB/Apnea
- Wet cough
- Crackles
- Seasonal
- Snot

Croup

- Typical story:
 - 3 y.o. (6 months -6 years) wakes up in middle of the night and “can’t breath”.
 - Parents report pt was “coughing and wheezing”.
 - Has slight runny nose last evening before bed.
 - Has never had anything like this before.
 - Got better on ride in to ED.
 - When you go to examine pt gets upset and give horse cry

Airway Resistance

| | Normal | Edema | Δ diameter | Δ resistance |
|--------|--|---|--------------------|----------------------|
| Infant |  <p>4 mm</p> |  <p>2 mm</p> | $\downarrow 50 \%$ | $\uparrow 16 \times$ |
| Adult |  <p>8 mm</p> |  <p>6 mm</p> | $\downarrow 25 \%$ | $\uparrow 3 \times$ |



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Differential of Stridor

- Infection
 - Croup
 - Bacterial tracheitis
 - Retropharyngeal abscess
- Foreign Body-(especially starting in middle of the day)
- Laryngomalacia/Tracheomalacia
- Less common causes:
 - vocal cord paresis,
 - subglottic hemangioma,
 - causes rapidly progressing stridor, sometimes associated with a facial hemangioma
 - vascular ring, vascular sling, fixed mediastinal mass

Croup

- Accounts for over 90% of stridor with fever
- Subglottic stenosis secondary to edematous, inflamed mucosa
 - NOT SMOOTH MUSCLE ISSUE
- Most commonly caused by parainfluenza > > > RSV, adenovirus, and influenza
- Seeing large number of Covid+ croup with current variant

Croup

- Treatment:
 - Mild-Barky cough, no stridor at rest
 - Decadron: standard dose 0.6mg/kg (max 8mg)
 - Studies have shown as doses as low as 0.2 mg/kg are just as effective
 - No studies have shown benefit from 2nd dose
 - Cool mist-no study to show this is beneficial
 - Severe-Stridor at rest and/or severe distress
 - Racemic epinephrine(0.5 ml of 0.25% solution dissolved in 2.5ml of NS)
 - Watch for 2-3 hours after treatment
 - Heliox-Use limited by hypoxia
- Albuterol does not help bc not a smooth muscle issue

Asthma

- Lower respiratory tract issue
 - Combination:
 1. Airway constriction—smooth muscle
 2. Airway inflammation
- Physical Exam
 - Prolonged expiratory phase
 - Wheezing or minimal aeration
 - Retractions
- Treatment
 - Albuterol-relaxes smooth muscles, thus opens airways
 - Atrovent-(only beneficial in start of treatment)
 - Steroids-decreases airway inflammation
 - 2mg/kg load then 1mg/kg BID for 4-5 days
 - Magnesium-smooth muscle relaxation

Bronchiolitis

- Acute viral infection- most commonly RSV
- Age \leq 2 years of age
- Infant's sx are worsen for the first 3-5 days
- Infectious process → **destruction in lining of bronchioles**
 - Bronchoconstriction
 - Mucous plugging
- Most common in winter and early spring
- Apnea= most concerning complication in infants

Bronchiolitis

- **Signs/Symptoms**
- runny nose, coughing, sneezing, tachypnea, retractions, wheezing/crackles, volume depletion due to decreased oral intake, apnea, fever



Bronchiolitis-Interventions

- Contact isolation-mask up
- Supportive care!!
 - SUCTION, SUCTION, SUCTION
 - Oxygen-heated high flow
 - Treat fever
 - ORT with Pedialyte
 - Positive pressure
 - SUCTION again

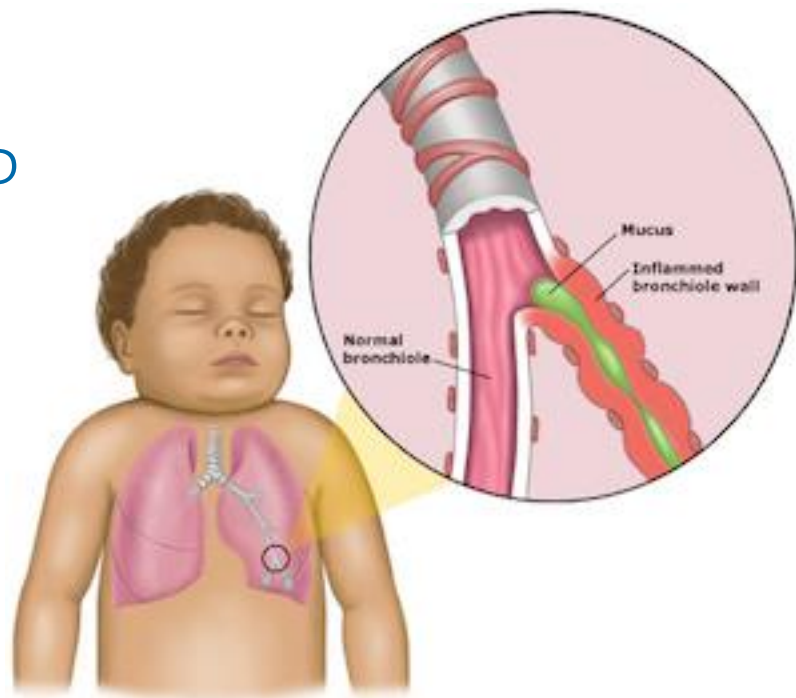


Bronchiolitis

- Viral infection
 - RSV; human metapneumonia virus, parainfluenza,
- Clinical picture varies with age
 - Neonates/newborns
 - Apnea BEFORE onset of symptoms
 - Toddlers:
 - Nasal secretions/congestion
 - Wet cough
 - Poor PO intake
 - Coarse breath sounds/wheezing/crackles—washing machine
 - Tachypnea
 - +/- Fever
 - School aged
 - Cough-post nasal drip
 - Viral pneumonitis

Bronchiolitis

- What is the problem?
 - Viral infection makes the bronchioles swell and become inflamed. Mucus collects in these airways, which can make it difficult for air to flow freely into and out from the lungs.
- How do we make diagnosis?
 - Clinical diagnosis—NO TEST NEEDED
 - CXR-
 - Unlikely to be helpful
 - Charge: \$442
 - Viral DFA
 - Who cares which virus?
 - Charge: \$794



Bronchiolitis

- What do we do?
 - Suctioning—helps clear secretions in upper airway but not lower airway, but has proven beneficial
 - Supplemental O2 when hypoxic
 - Things thought to possibly help, but evidence lacking:
 - Steroids—Decrease airway swelling??—no proven benefit
 - Hypertonic saline nebs: thin secretions/mucus plugging—Studies yet to show significant benefit
 - Albuterol—rarely helps more likely hurts

Albuterol in bronchiolitis??

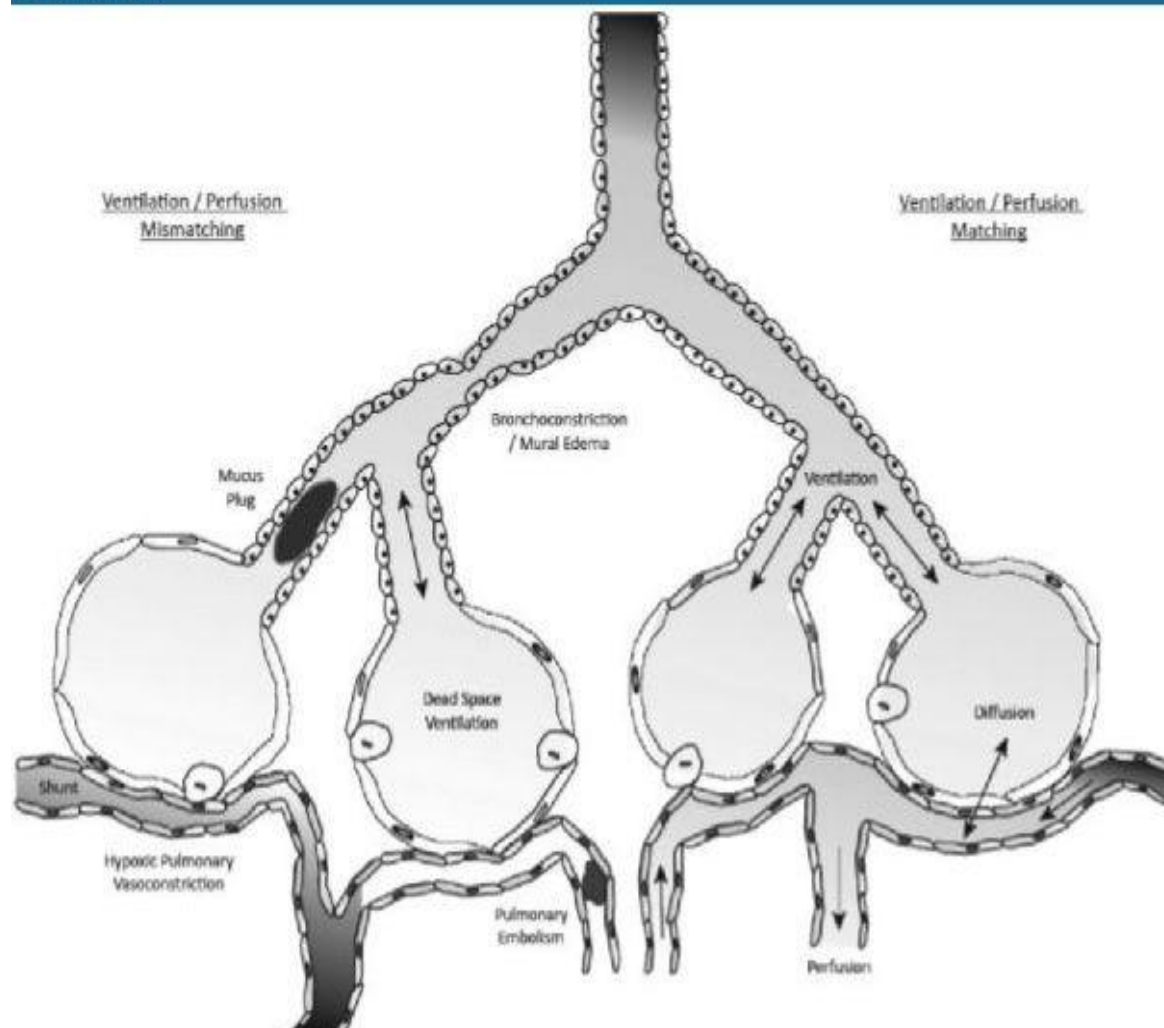
- How does albuterol work?
- Where does it have its effect?
- Why might this make bronchiolitis worse?



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V/Q Mismatch

Medscape



Remember the Basics!!

Albuterol \neq "All-better-ol"



Unresponsive 3 mo

- Call “My grandchild won’t wake up”
- What are we thinking could when on your way to scene?
- What are you getting ready to take with you?

Unresponsive 3 mo

- Pt didn't wake up from nap, so GMOC went into room and tried to wake child.
- She reports she blew in his face and put wet rag on his face and he would open eyes but fell back to sleep.
- MOC reports pt has had cold over past 2 days.
- What else do you want to know?

Unresponsive 3 mo

- Pt didn't wake up from nap, so GMOC went into room and tried to wake child.
- She reports she blew in his face and put wet rag on his face and he would open eyes but fell back to sleep.
- MOC reports pt has had cold over past 2 days.
- What else do you want to know?

Unresponsive 3 mo

- HR: 180 RR: 20 Pulse Ox: 92% BP: 67/37
- Sleepy/lethargic floppy
- HEENT: Pupils equal round 3mm sluggish bilat
- Lungs: clear bilat
- Heart: S1S2 tachy; Cap refil 3-4 sec.
- Abd: Full, patient briefly stirs/fights exam.
- What do you think of physical exam?
- What do you want to do?
- What do you think is going on?

Unresponsive 3 month old

- What else do you want to know?
- What do you think is going on?
- What would you like to do/order?

Unresponsive 3 month old

- Trauma 1 called
- IVF bolus started
- Trauma labs including LFT and CBC sent
- CT abd/pelvis obtained

Unresponsive 3 month old

- IVF bolus x 2
- Improved BP and HR decreased to normal range
- Pt admitted to PICU



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Summary of red flags and risk indicators for abuse fractures: Exam and Fracture Types

| Risk Indicators for Abuse | Red Flag | Explanation |
|----------------------------|---|--|
| Skin findings | Atypical/unexplained | Statistically significant differences exist in bruises caused by abusive vs. accidental trauma. Note that the absence of bruising is common in abuse and does <i>not</i> mean that abuse did not occur. |
| Multiple fractures | Correlates with major trauma | (Self-explanatory) |
| Healing fractures | Reflects prior injury | (Self-explanatory) |
| High-specificity fractures | Classic metaphyseal lesion, posterior rib, sternum, scapula | Fracture types are more highly specific to abuse mechanisms than accidental mechanisms, unless reliable, corroborated, plausible history exists, e.g. EMS transport for motor vehicle crash with resultant sternal fracture. |

•From: Pierce et. al. A Practical Guide to Differentiating Abusive From Accidental Fractures: An Injury Plausibility Approach. *Clinical Pediatric Emergency Medicine* - Volume 13, Issue 3 (September 2012)



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Clues to NAT Bruising

Trunk

Ears

Neck

4 years or
younger

Frenulum

Auricular area

Cheek

Eyes

Sclera

Patterned bruising



4 Any bruising on a
child less than 4
months



*"Kids that don't
cruise rarely
bruise."*

THE END

Questions?

Patrick Mahar, MD

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3 y.o. AMS

- CC: "Not acting right"
- HPI:
 - Pt said to look pale and tired at about 11:30 PM while at home.
 - Mom says fed pt and 7 yo brother dinner around 8:00PM. Pt and brother playing afterwards and MOC reports she fell asleep on couch.

3 y.o. AMS

- 10:00 PM
 - MOC bathed patient;
 - Seemed very tired with slurred speech;
 - MOC put her in bed.
- 11:00 PM
 - MOC puts older brother to bed and notices pt is pale
 - Mom thought it was some sort of "heat reaction" to the tobasco sauce, so she called poison control;
 - MOC told to take child to the ED.

3 y.o. AMS

- PMHx:
 - Eczema
 - Chronic ear infections
 - Broke left arm after fall down stairs 6 months ago
- Social Hx:
 - Lives with MOC, FOC, 7 yo step-brother, uncle and maternal grandmother
 - +smokers
- Fam Hx:
 - MOC with fibromyalgia;
 - step-brother w/asthma;
 - MGM w/ DM and HTN

3 y.o. AMS

- PE:
 - Afebrile; HR:144 RR:22 Pox: 92%
 - Lethargic, pale, and overly sleepy.
 - Unresponsive to verbal stimuli and would briefly open eyes to painful stimuli.
 - Mucous membranes-dry
 - PERRL (4mm→2mm)
 - Heart: S1S2 Tachy
 - Neuro: Marked ataxia and somulance



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What do you think is going on?

1. Head injury-likely NAT
2. Ingestion
3. Infection
4. Brain tumor
5. Intussusception

Altered Mental Status

AEIOU TIPS

- Alcohol, abuse
- Electrolytes (hypoglycemia, diabetic ketoacidosis, electrolyte abnormality), encephalopathy
- Infection (meningitis, encephalitis, abscess)
- Overdose, ingestion
- Uremia
- Trauma (head injury, intracranial hemorrhage, non-accidental trauma)
- Insulin, intussusception, inborn errors of metabolism
- Psychogenic (behavioral)
- Shock, stroke, seizure (postictal state), shunt



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What did we ingest?

1. MGM glyburide
2. MGM Metoprolol
3. MOC's Dilaudid
4. MOC's Amitriptyline
5. Rat poison near refrigerator
6. None of the above



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Figuring it out

1. MGM glyburide
2. MGM Metoprolol
3. MOC's Dilaudid
4. MOC's tricyclic antidepressant
5. Rat poison near refrigerator
6. None of the above



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- Glyburide

- antidiabetic drug in a class of medications known as sulfonylureas
- Symptoms of ingestion:
 - Altered mental status
 - Hypoglycemia
 - Seizures

- Metoprolol

- β -blocker used in treatment of several diseases of the cardiovascular system, especially hypertension
- Symptoms of ingestion:
 - Drowsiness
 - Altered MS
 - Bradycardia
 - Hypoglycemia
 - Hypotension



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- Dilaudid
(Hydromorphone):
 - very potent centrally-acting analgesic in opioid class
 - Symptoms of ingestion:
 - Altered mental status
 - Respiratory depression
 - Pin point pupils
- Amitriptyline
 - Tricyclic antidepressant
 - Symptoms of ingestion:
 - Altered mental status (agitation/lethargy)
 - Tachycardia
 - Dry mouth
 - Mydriasis (pupil dilation)
 - Fever
 - Arrhythmias
 - ECG changes
 - prolonged QRS, QT and PR intervals
 - V-tach/V-fib



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- Rat Poison(Brodifacoum)
 - Similar to warfin/Coumadin
 - Interferes with blood clotting
 - Symptoms of ingestion
 - Acute ingestion-no symptoms
 - Late symptoms:
 - Increased bleeding
 - AMS if bleed in head



What did we ingest?

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6. None of the above



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What did we ingest?

1. MGM glyburide → Blood glucose = 97
2. MGM Metoprolol
3. MOC's Dilaudid
4. MOC's Amitriptyline
5. Rat poison near refrigerator
6. None of the above



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What did we ingest?

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3. MOC's Dilaudid
4. MOC's Amitriptyline
5. Rat poison near refrigerator
6. None of the above



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What did we ingest?

1. MGM glyburide → Blood glucose = 97
2. MGM Metoprolol → HR = 144
3. MOC's Dilaudid
4. MOC's Amitriptyline
5. Rat poison near refrigerator
6. None of the above



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What did we ingest?

1. MGM glyburide → Blood glucose = 97
2. MGM Metoprolol → HR = 144
3. MOC's Dilaudid
4. MOC's Amitriptyline
5. Rat poison near refrigerator
6. None of the above



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What did we ingest?

1. MGM glyburide → Blood glucose = 97
2. MGM Metoprolol → HR = 144
3. MOC's Dilaudid → Pupils 4 mm bilat reactive
4. MOC's Amitriptyline
5. Rat poison near refrigerator
6. None of the above



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What did we ingest?

1. MGM glyburide → Blood glucose = 97
2. MGM Metoprolol → HR = 144
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What did we ingest?

1. MGM glyburide → Blood glucose = 97
2. MGM Metoprolol → HR = 144
3. MOC's Dilaudid → Pupils 4 mm bilat reactive
4. MOC's Amitriptyline → Normal EKG
5. Rat poison near refrigerator
6. None of the above



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5. Rat poison near refrigerator → symptomatic
6. None of the above



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What did we ingest?

- Call from lab:
 - Urine Tox positive for THC
- Where did that come from?



3 y.o. AMS

- MOC admits to having medical marijuana brownies in house for her chronic pain



Clinical Presentation of Marijuana Ingestion

- Decrease in motor coordination and strength.
- Slurred speech
- Ataxia
- Nystagmus
- Sedation and lethargy
- Severe anxiety





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5 yo vomiting and difficulty breathing

- 13:10 911 call– Something is wrong with my son, he is vomiting and having trouble breathing.
- What are you thinking as you are driving to home?



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5 yo vomiting and difficulty breathing

- 13:18 Arrive at home
 - MOC w/ patient meet you at the door.
 - Pt coughing and then has his 4th episode of emesis
 - HR: 140 RR: 36 Pox: 92% on RA
 - Pale appearing and coughing
 - Heart: S1 S2 tachycardic
 - Lungs: coughing with every deep breath; poor aeration
 - Derm: diffuse erythematous rash on trunk and lower extremities
- What else do you want to know?
- What is going on?



Anaphylaxis

- Severe life-threatening allergic rx
- Symptoms can develop rapidly-seconds/minutes
- Can lead to anaphylactic shock (distributive shock)-massive vasodilation



Anaphylaxis-Symptoms

- Flushed/red skin
- Hives
- Intense itching
- Angioedema
- Noisy breathing (stridor, wheezing)
- Tachycardia
- Hypotension
- Anxiety
- N/V



Anaphylaxis- Interventions

- Maintain open airway
- Keep calm
- Oxygen
- IV fluid bolus if suspect severe rxn/BP ↓
- Bronchospasm- albuterol
- Antihistamines
- Corticosteroids
- Auto-injector epi
- Epinephrine (1:1000)
 - 0.01 mg/kg (0.01 mL/kg)
IM- lateral thigh





Children's Hospital
Colorado

8 yo vomiting and difficulty breathing

- 16:10 911 call– Something is wrong with my son, he is vomiting and having trouble breathing.
- What are you thinking as you are driving to home?

8 yo vomiting and difficulty breathing

- 16:38 Arrive at house
 - MOC says "He is on the couch and has been throwing up for a couple hours. He is really sleepy and now having hard time breathing"
 - What else do you want to know from parent?
 - When enter house what are you first looking for with patient?

8 yo vomiting and difficulty breathing

- 16:42: HR: 138 BP: 92/42 RR:10 Pox: 92%
 - GEN: Sleepy but moans when you stimulate him.
Opens eyes when you ask him to and tells you his name
 - HEENT: Mucous membranes-very dry
 - Lungs: No wheezing/stridor. Breathing hard
 - Heart: Tachy.
 - Abd: diffusely tender
- What else do you want to know?