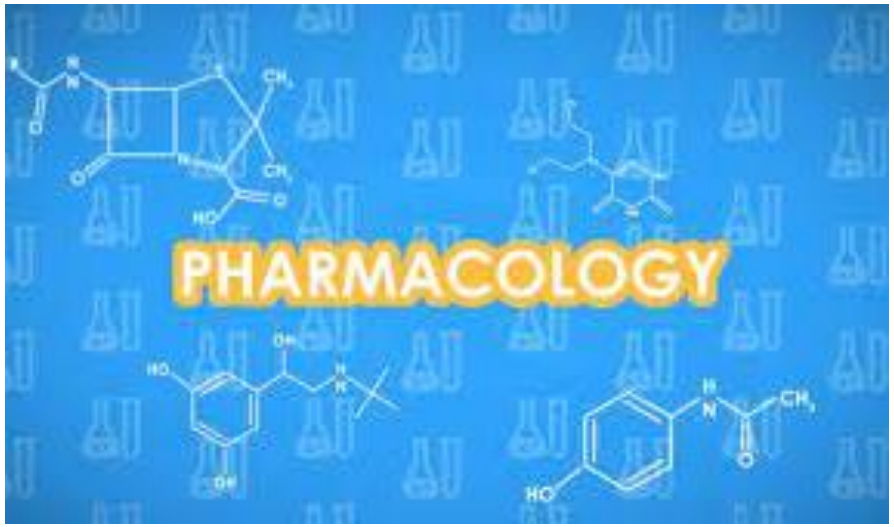


BLS PHARMACOLOGY

December 2021 McHenry Western Lake County EMS

Brad Wasiele

FF/PM

PHARMACOLOGY VS PHARMACY

- **Pharmacy** is the clinical health science that links medical science with chemistry, and it is charged with the discovery, production, disposal, safe and effective use, and control of medications and drugs. The practice of pharmacy requires excellent knowledge of drugs, their mechanism of action, side effects, interactions, mobility and toxicity.
- **Pharmacology** is a branch of medicine, biology and pharmaceutical sciences concerned with drug or medication action. More specifically, it is the study of the interactions that occur between a living organism and chemicals that affect normal or abnormal biochemical function.

SO LETS TALK ABOUT MEDICATIONS

Patient: Confirm absence of allergy

Drug: package/drug container for name, concentration, integrity, expiration date. Verify sterility of parenteral medication. Prepare dose; controlled substances,

Dose: IV inopressors, controlled substances and high risk meds (peds dosing/others per protocol) require independent cross-check with qualified practitioner before giving

Timing of administration: See drug profile or individual SOP

Route & site: Know your scope of practice- IM, IN, IO, PO, IV, SL

Reason: Must be indicated and not contraindicated for patient

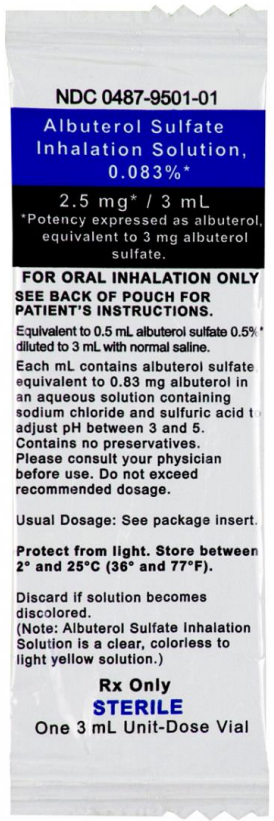
Documentation: Must note drug, dose, route; time of administration, and patient response for each individual dose

7 RIGHTS OF MEDICATION ADMINISTRATION

- **Why?**
- Minor to mod pain: HA, muscle aches, arthritis, backache, toothaches, colds, and fever
- **Why not?**
- Severe liver disease
- **Dose/Route**
- ≥13 and ≥50 kg: 650 mg
- PO; max 1000 mg
- ≥13 and <50 kg: 12.5
- mg/kg, max 5 mg/kg

ACETAMINOPHEN TABLET

325 MG



- **Why?**
- Bronchospasm associated w/asthma, COPD, allergic reactions; croup, or cystic fibrosis – Hyperkalemia
- **Why not?**
- Cardiac stimulant. Use w/ caution in pts w/ ACS, dysrhythmias, symptomatic tachycardia, diabetes, HTN, seizures; or active labor
- **Dose/Route**

Bronchospasm: 2.5 mg / HHN, mask or neb / CPAP or BVM; O2 at 6-8 L depending on unit until mist stops (5-15 min). Give 1st dose w/ ipratropium unless contraind. May repeat X 1.

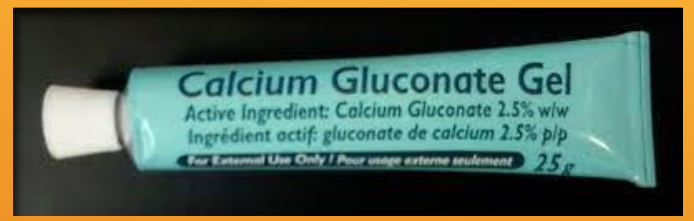
Hyperkalemia: 5-mg /neb up to 20 mg over 15 min. DO NOT wait for response. Begin Rx & transport ASAP

ALBUTEROL

2.5MG IN 3ML

CALCIUM GLUCONATE GEL

- **Why??**
- For hydrofluoric acid burns to skin. With potential for deep tissue burns and bone damage.
- **Where??**
- Flush area w/ water. Apply gel and massage into burned area. Apply every 15 min until pain is relieved.
- **Why Not??**
- Hypercalcemia, sarcoidosis, severe hypokalemia



*** THIS MEDICATION IS NOT STOCKED BUT MAY BE ONSITE WHERE HYDROFLUORIC ACID IS UTILIZED.**

- **Why??**
- Allergic reactions/anaphylaxis
- **Where??**
- 1mg/kg (Max 50mg) **PO** {BLS}
- **Why Not??**
- Acute asthma attack.
- Hx asthma w/ current allergic reaction-OK to use

DIPHENHYDRAMINE (BENADRYL)

IPRATROPIUM BROMIDE NEBULIZED

- **Why??**
- Bronchospasm assoc. w/ moderate/ severe allergic rxn, COPD/asthma
- **Why Not??**
- Allergy to MDI formulation (Peanut allergy) may safely use neb solution: Contact OLMC.
- **Where??**
- **Adult:** 0.5 mg (1 unit dose vial) added to albuterol dose/HHN/in-line neb
- **PEDS:** 0.25-0.5 mg added to albuterol dose/HHN/in-line neb

- **Why??**
- Moderate allergic reaction (IM) Anaphylaxis: No IV/IO: IM
- Moderate to severe asthma

- **Where??**
- **Adult** emergent allergic reaction/critical asthma: 0.3 mg IM may repeat x1 in 5-10min
- **Adult Anaphylaxis** no IV/IO: 0.5 mg IM repeat x1
- **Peds:** See page 99 SOP's (Weight based)

- **Why not??**
- VT due to cocaine use (Need cardiac monitor too see…ALS)
- Use IM with caution if: HR>100, Hx. CVD/HTN, Current HTN, HF

EPINEPHRINE/ ADRENALINE

1MG/ML AMPULE OR VIAL

- **Why??**
- Hypoglycemia w/o IV/IO
- **Where??**
- 1mg IM, IN
- **When??**
- Anaphylaxis if a Hx of CVD, HTN, Pregnant or on beta blockers
- **Note:** Roll vial to mix **(DO NOT SHAKE)**

GLUCAGON

IM OR IN
ADULT= 1MG
PEDS+ SEE PAGE 100 SOP

MARK 1 OR DUODOTE AUTOINJECTOR

- **Atropine** competitively blocks the effects of acetylcholine, including excess acetylcholine due to organophosphorous poisoning, at muscarinic cholinergic receptors on smooth muscle, cardiac muscle, and secretory gland cells and in peripheral autonomic ganglia and the central nervous system.
- **Pralidoxime** reactivates acetylcholinesterase which has been inactivated by phosphorylation due to an organophosphorous nerve agent or insecticide.
- The DuoDote Auto-Injector should be administered by emergency medical services personnel who have had adequate training in the recognition and treatment of nerve agent or insecticide intoxication
- The DuoDote Auto-Injector should be administered as soon as symptoms of organophosphorous poisoning appear (e.g., usually tearing, excessive oral secretions, sneezing, muscle fasciculations)
- **Think: DUMBBELS or SLUDGEM**

- **D**iarrhea/ Defecation
- **U**rination
- **M**iosis/muscle weakness
- **B**ronchorrhea
- **B**radycardia
- **E**mesis
- **L**acrimation
- **S**alivation/sweating

DUMBBELS

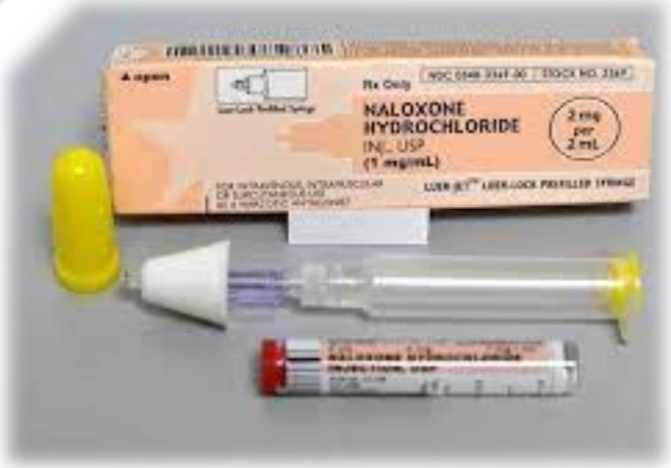
S	Salivation
L	Lacrimation (secretion of tears)
U	Urination
D	Defecation
G	Gastroenteritis (GI irritation)
E	Emesis
M	Miosis (pupil constriction)

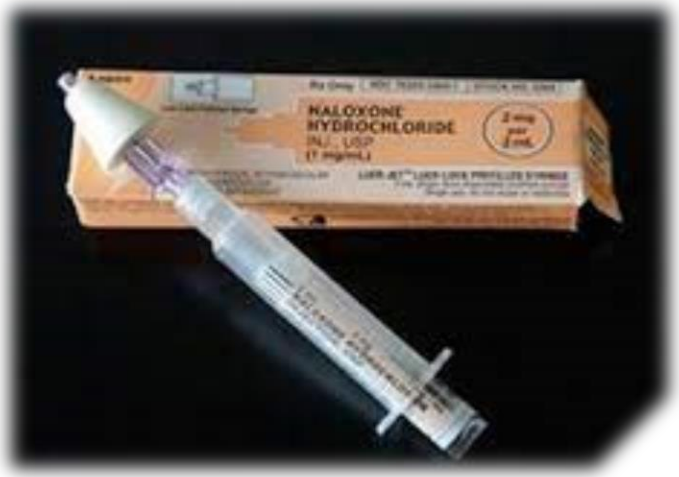
SLUDGEM

DUODOTE AUTO INJECTOR

When activated, each DuoDote Auto-Injector delivers the following:

- 2.1 mg of atropine in 0.7 mL of sterile, pyrogen-free solution containing 12.47 mg glycerin and not more than 2.8 mg phenol, citrate buffer, and Water for Injection. The pH range is 4.0 – 5.0.
- 600 mg of pralidoxime chloride in 2 mL of sterile, pyrogen-free solution containing 40 mg benzyl alcohol, 22.5 mg glycine, and Water for Injection. The pH is adjusted with hydrochloric acid. The pH range is 2.0 to 3.0.





- **Why??**
- Opiate antagonist, reverses effects of opiate drugs, narcotics/synthetic narcotics
- **Where??**
- IN & IM
- 2mg/2ml
- Not more than 1ml per nare
- **When??**
- Narcotic/synthetic narcotic OD with AMS & respiratory depression
- Coma of unknown etiology w/ respiratory depression
- May or may not have constricted pupils based on drug combinations
- **Note: *ABC's! Breathe for your patient while preparing Naloxone***

NALOXONE/ NARCAN
IN OR IM

ONDANSETRON (ZOFRAN)

- **Why??**
- Nausea/vomiting
- **Where??**
- Oral dissolve tablet 4mg dissolve tablet
- **When??**
- Mat repeat in 10 minutes to a total dose of 8mg PO.
- **PEDS:** 0.15mg/kg up to 4mg
- **Note:** Do NOT push ODT through blister foil package, tablets are fragile

RECOURSES/REFERENCES

- Region IX Standard Operating Procedures/ Standing medical orders 2020
- https://www.meridianmeds.com/sites/default/files/DuoDote_PI.pdf
- www.google.com/search/pictures