

Just the Basics: Pharmacology for the EMT

Make sure and document:

Name of the Medications
Signs and Symptoms of pt and why you gave it.
Pertinant history to justify medication
How you “assisted” the patient
Improvement in patient condition

Basic Medications approved by the National Registry

Oxygen
Albuterol
Nitroglycerin
Aspirin
Epinephrine Pen
Charcoal
Glucose

Oxygen

(O₂ or charted O₂)

Can be administered by Nasal Cannula, Non-Rebreather, Blow-By, Breathing Treatments, or Ambu-Bag.

“To be classified as emergency oxygen, it must be delivered at a dose of at least 6 liters per minute or run for a duration of more than 15 minutes. In this case, it is considered first aid use and does not require a prescription” FDA Regulation

Nasal Cannula – 1-6 liters per minute = 24-40% oxygen
Non-Rebreather at 15 liters per minute = >90% oxygen

ACLS, PALS and ITLS are now beginning to teach to keep oxygen administration to a minimum if the patient has an oxygen saturation > 95%. This is due to oxygenation and free radical formation when excess oxygen is given.

Giving oxygen to a patient who has COPD can decrease their respiratory drive due to the change in brain chemistry that occurs as they develop this disease. Use caution when administering oxygen.

Preemie babies can develop Retinopathy of Prematurity (ROP) which causes blindness. This can occur when preemie babies are given high pressure oxygen in high concentrations over the course of DAYS. This isn't a problem for those of us in EMS. If you have to deal with a preemie, support your ABCs'.

Nitroglycerin

(NTG, Nitro-Stat, Nitro SL, Tridil)

Administered SubLingually (SL) by spray or tablet. Each dose equals to 400mcg. Administer SL NTG, one spray or tablet under the tongue every five minutes times three. If you continue to administer NTG at one dose under the tongue every five minutes, you are giving the equivalent of 40 mcg/min. That is pretty good considering most ER Dr's and Paramedics start NTG drips at 10-20 mcg/min.

Pt should have a systolic blood pressure > 100, and needs to be sitting or lying down prior to or immediately after administration. Warn patients that it may cause a headache.

Half life is 1-4 minutes. There is no anti-dote. But lay the patient flat if they can tolerate it and put their feet up. They will feel better in a few minutes.

Many pt's take Nitro-BID or Nitro-Dur for continuous dosing. Check patient's chest or abdomen for nitro patches or nitro paste. You don't necessarily need to remove the patches/paste. Just be aware that you are giving NTG in addition to what they are receiving through the patches/paste.

Contact Medical Control prior to administration if patient has taken Viagra, Cialis or Levitra within the last 24 hours.

Aspirin

Salicylic Acid, Salicylate. Can be charted as "ASA"
324 mg chewable is given for chest pain.

Given for chest pain. Aspirin doesn't really take away the chest pain but it will help relieve the cause of the chest pain. It makes the blood "slick" rather than thin it.

Beware of giving aspirin to someone with Asthma. It can lead to NSAID precipitated bronchospams.

If you have regular strength or Enteric Coated, at least break the tablet in half to speed up digestion. If the patient can tolerate it, have them chew them up. The only reason why Baby Aspirin is prescribed is because it tastes better than plain aspirin.

<http://reyessyndrome.org/pdfs/medicationscontainingaspirin.pdf> for a complete list of products containing aspirin.

Epinephrine

(Epi-pen, Epi, Adrenaline, twinject.)

Dose is 0.3 mg IM for adults and 0.15 mg IM for pediatrics

Indicated for Anaphylaxis.

Use caution in patients over 50 years of age and/or history of cardiac disease.

Warn patients that it will cause them to feel heart pounding, chest tightness and pale extremities but the feeling will go away in a few minutes.

Albuterol

(Ventolin, Proventil)

Dose: 2 puffs from an inhaler as needed OR 2.5 mg in 3 cc of saline nebulized over 5-7 minutes.

Can cause rapid heart rate and tremors but this wears off after a few minutes.

Rules to Give By: S/S of Respiratory Emergency, Has a physician prescribed inhaler, Specific authorization by medical direction (either written protocols or direct contact)

Charcoal

(Acti-dose, Liqui-char, Charco-Aid.)

Available with or without sorbitol.

25-50 grams. Pediatric patients get 1-2 grams per kg.

Used for Overdose in EMS world. At home uses include upset stomach, bloating and diarrhea.

You cannot overdose on charcoal. It is a naturally occurring substance and humans are composed of the stuff. The biggest side effect would be constipation.

Warn patients and parents of children receiving charcoal that it will make their poop BLACK.

Don't give children charcoal WITH sorbitol. This can cause diarrhea and dangerous fluid and electrolyte shifts. Kids get Charcoal WITHOUT sorbitol only.

Not effective with petroleum products, alcohols, lithium, strong acids and bases, iodine or fluoride.

Glucose

(dextrose, sugar, Glucose, Toot-Sweet).

Dosage: One glob under the tongue or between the cheek and gum.

Have suction available in case the gel liquefies with saliva.

Cake Decorating Gel can be used in a pinch and it tastes better.

Make sure you have the three things of Whipples Triad when you get ready to chart:

Documented Low Blood Glucose Level

Symptoms of Hypoglycemia

Symptom Relief with Glucose