Class: Proton Pump Inhibitors
Drug / Trade Names: Esomeprazole (Nexium®) Lansoprazole (Prevacid®) Omeprazole (Prilosec®) Pantoprazole (Protonix®)

REVISED: November 1, 2018

Class: Proton pump inhibitor

Mechanism of Action:
- Diminishes daily production of acid.
- Causes an intracellular potassium shift

Indications:
- Acid Reflux
- GERD
- GI ulcers and bleeding
- Prevention of stress related mucosal injury

Contraindications:
- Hypersensitivity

Precautions:
- Pregnancy Class B (presumed safe based on animal studies)
- Liver disease

Dosage:
Doses are highly variable and based on institutional guidelines and patient laboratory values. Double check orders with transferring physician.

- Omeprazole (Prilosec®)
  - IV/IO: 80 mg Bolus prior to infusion, administered slowly (over 2 minutes).
  - IV/IO Infusion: 8 mg/hour
- Pantoprazole (Protonix®)
  - IV/IO: 80 mg Bolus prior to infusion, administered slowly (over 2 minutes).
  - IV/IO Infusion: 8 mg/hour
- Esomeprazole (Nexium®)
  - IV/IO Infusion: 20-40 mg over 30 minutes
- Lansoprazole (Prevacid®)
  - IV/IO: 60 mg Bolus prior to infusion, administered slowly (over 2 minutes).
  - IV/IO Infusion: 6 mg/hour

Onset:
- IV/IO: Immediate

Duration:
- Based on infusion duration
Side Effects:
- Rash
- Jaundice
- GI upset
- CNS Symptoms in elderly

Interactions:
- Reduced clearance of Benzodiazepines
- Reduced bio availability of drugs dependent on gastric PH for absorption
- Interacts with warfarin and cyclosporine
- Incompatible with many IV medications in the IV line.

PEARLS:

**PPI Infusions have many incompatibilities in the same IV line with other medications. When in doubt, confirm with transferring hospital or use another line.**

- PPIs may be administered orally, as an IV/IO bolus or as an infusion. In EMS, PPIs are often given for prevention of the physiologic stress-related gastric mucosal injury often seen in the critically ill.

- IV PPIs should be administered through a dedicated IV line, and flushed with compatible solutions pre- and post-administration.
  - Lansoprazole (Prevacid®) requires a filter set for administration.

- Incompatible with many IV medications in the IV line. Flush well or use different line.
  - Compatible with:
    - Aminophylline
    - Ampicillin
    - Cefazolin
    - Dopamine
    - Furosimide
    - Ketoralac
    - Penicillin
    - Potassium
    - Procainamide
    - Vasopressin
  - Specifically not compatible with:
    - Amiodarone
    - Atropine
    - Dexamethasone
    - Diazepam
    - Digoxin
    - Esmolol
    - Lidocaine
    - Mannitol
    - Naloxone
    - Nor-epinephrine
    - Propofol
    - Vecuronium
    - Verapamil
  - When in doubt, check with transferring hospital.