

N. Hydroxocobalamin (Cyanokit®)

- I. Classification
 - Cyanide antidote
- II. Actions
 - Binds cyanide ions with more affinity than hemoglobin molecule
 - Cyanide ion and hydroxocobalamin form cyanocobalamin (Vitamin B12) which is then excreted in the urine.
- III. Indications
 - Known or suspected cyanide poisoning - patients at high risk (industrial accidents, fire victims with smoke inhalation, known overdose, etc) with one more more of the following symptoms:
 - Altered mental status, confusion, seizures, coma
 - Headache
 - Chest pain or tightness
 - Shortness of breath, bradypnea, tachypnea
 - Hypertension (early), hypotension (late), cardiovascular collapse
 - Nausea, vomiting
 - Cardiac arrest
 - Mydriasis (dilated pupils)
- IV. Contraindications
 - Known allergic reaction to hydroxocobalamin or cyanocobalamin
- V. Adverse effects
 - A. Cardiovascular
 - Ventricular extrasystoles
 - Tachycardia
 - Transient hypertension
 - B. Neurological
 - Memory impairment
 - Dizziness
 - Restlessness
 - C. Respiratory
 - Dyspnea
 - Dry Throat
 - Throat tightness
 - D. Gastrointestinal
 - Abdominal discomfort
 - Dysphagia
 - Vomiting, diarrhea
 - Hematochezia
 - E. General
 - Allergic reaction, pruritis, anaphylaxis
 - Hot flush

VI. Administration

- A. Do not administer hydroxocobalamin through the same IV site/set as the following medications: **dopamine, fentanyl**, dobutamine, diazepam, nitroglycerin, pentobarbital, propofol, thiopental, sodium thiosulfate, sodium nitrite and ascorbic acid. You must start a second IV to administer hydroxocobalamin in patient's receiving these medications.
- B. Adult:
- 5 grams IV/IO over 15 minutes (Stocked as single 5gm bottle, or two 2.5 gm bottles)
 - Single 5 gm Bottle
 - Reconstituted with 200 ml Normal Saline.
 - Two 2.5 gm Bottles, give over 7.5 minutes each.
 - Each vial reconstituted with 100 ml Normal Saline.
- C. Pediatric
- 100 mg/kg IV/IO of hydroxocobalamin (reconstituted with Normal Saline the same as adults) over 15 minutes.
 - Reconstituted hydroxocobalamin is at a concentration of 25 mg/ml.
- D. May repeat a full dosage once after 15 minutes if patient is still severely symptomatic.

Table 9-2 : Hydroxocobalamin (Cyanokit®) Pediatric Dosing
(2500 mg in 100 ml)

| AGE | KG | MG | ML |
|----------|----|------|-----|
| Preemie | 2 | 200 | 8 |
| Newborn | 4 | 400 | 16 |
| 4 MO | 6 | 600 | 24 |
| 6 MO | 8 | 800 | 32 |
| 1 YR | 10 | 1000 | 40 |
| 2 YR | 12 | 1200 | 48 |
| 3 YR | 15 | 1500 | 60 |
| 4 YR | 17 | 1700 | 68 |
| 5 YR | 20 | 2000 | 80 |
| 6 YR | 22 | 2200 | 88 |
| 7 YR | 25 | 2500 | 100 |
| 8 YR | 27 | 2700 | 108 |
| 9 YR | 30 | 3000 | 120 |
| 10 YR | 35 | 3500 | 140 |
| 11 YR | 40 | 4000 | 160 |
| 12 YR | 50 | 5000 | 200 |
| 13-15 YR | 60 | 5000 | 200 |