Opioid toxicity

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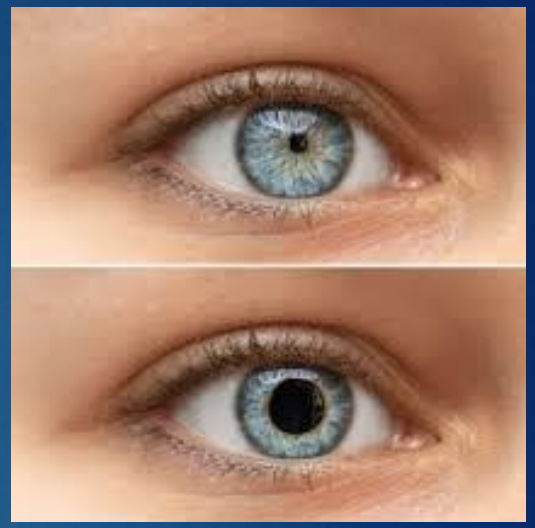
IUMS

Clinical features

- ***Neurologic***: CNS depression, seizure
- ***Respiratory***: Decrease rate and volume, noncardiogenic pulmonary edema, bronchospasm
- ***Ophthalmologic***: Miosis



Clinical features

- ***Cardiovascular*** : mild hypotension and relative bradycardia.
- **Gastrointestinal:** Nausea and vomiting ileus, Increased biliary tract pressures
- ***Genitourinary*:** urinary retention from urethral sphincter spasm and decreased detrusor tone.
- ***Dermatologic*:** Pruritus, flushing and urticaria
- ***Metabolic*:** Hypoglycemia, Hypothermia

DIAGNOSIS

Coma

+

Miosis

+

Respiratory depression

(RR<12 breaths/min)

Physical Exam

- **Listen** for auscultatory findings suggestive of pulmonary edema.
- **Undress the patient** completely and look for hidden opioids or drug-use paraphernalia, check for fentanyl patches on all parts of the body, including mucous cavities, and
- **Palpate muscle groups** to detect signs of compartment syndrome

Differential diagnosis

- **Clonidine** (coma, bradycardia, hypotension, miosis, and periods of apnea)
- **Organophosphates, Carbamates**: (cholinergic toxidrome: miosis, muscle fasciculations, vomiting, diarrhea, sweating)
- **Phenothiazines and atypical antipsychotic medications**: (neurologic depression, miosis from decreased adrenergic tone)

Differential diagnosis

- **Sedative-hypnotic medications:** (neurologic depression but are not usually miosis)
- **Carbon monoxide:** (neurologic depression but are not usually miosis)

Differential diagnosis

- Hypoglycemia
- Hypoxia
- CNS infections
- Postictal states
- pontine and intracranial hemorrhages

MANAGEMENT

Airway protection and **ventilatory maintenance** are the most important treatment steps

- Bag mask ventilation/intubation
- After adequate ventilation is ensured, administer naloxone

MANAGEMENT

Antidote:

Naloxone

IV, SC, IM and by ET tube

Naloxone

- Pure competitive antagonist at all opioid receptors
- Elimination half-life : 60-90 minutes

- Duration of action is as short as 20 minutes if a large amount of opioid agonist is present.

MANAGEMENT

Naloxone

0.4 - 2 mg for adults and children

Opium dependent : 0.1 mg

Opium non dependent: 0.4 mg

Apnea or near apnea: 2 mg

MANAGEMENT

Repeated doses of **2 milligrams IV every 3 minutes**
until a maximum of **10 milligrams IV**

Subsequent doses of naloxone of **0.1 to 0.4** mg IV are administered until the desired effect is reached

MANAGEMENT

The duration of action of naloxone is often short, so **naloxone infusions** are occasionally required to support respiration over several hours as the opioid is metabolized

MANAGEMENT

How calculate the naloxone continuous infusion dose?

2/3 of “wake-up dose” per hour by IV infusion

DISPOSITION

O2 sat >92%, respiratory rate >10 , PR>50, normal temperature, GCS=15

- **Heroin intoxication** :1-2 hr after naloxone
- **Other than heroin:** 4-6 hr

- **Long acting** : 8 hr or hospitalization