NALOXONE

Generic Name: Naloxone
Trade Name: Narcan, Nalone, Narcanti
Drug Class: Narcotic Antagonist, Toxicology
Controlled Substance: Prescription – Not a controlled substance
Pregnancy Class: B, Lactation Safety unknown

Narcan is synthesized from thebaine. The name naloxone is derived from the name oxymorphone, because of the similar chemical structures.

Action

Narcan competitively blocks opioid receptors sites in the Central Nervous System. Currently there are three discovered opioid receptor sites; these are delta, kappa, and mu. Although Narcan has affinity for all three sites, it has an extremely high for mu, or “µ”- opioid receptor sites.

This means in a patient that has overdosed on a narcotic analgesic or narcotic derivative such as Dilaudid, Fentanyl, Morphine, Heroin etc., Narcan will “compete” for the opioid receptor site that the overdose narcotic has bound to, displacing it off that receptor site, and almost instantaneously reverse the symptoms of the overdose.

It is important to remember that narcotics most often have a longer half life, and duration of action than Narcan does, and Paramedic must be diligent in patient monitoring, for signs of recurrent overdose, such as GCS, and most importantly, respiratory rate and volume.

Onset

Narcan is most often delivered IV for fast emergent action, but can be given IM, SQ, and IN. Narcan is usually effective after 2 minutes and is effective treatment for approximately 45 minutes. Most text say after 10 minutes or 10mg, and no effect, the diagnoses/cause should be questioned.
Routes of Administration, and specifics to the route

Narcan has many routes of administration. These included IV, SQ, IM, IN, IV, IM, SQ

Usually a dose of 0.4 or 0.8mg IV bolus or IM, SQ injection is recommended as a starting point.

An IN spray has been effectively utilized by using a wedge device on a squeeze bottle that is sprayed into the nare and absorbed through the nasal mucosa.

The max dose of Narcan is 12mg in a 24hr period.

Indications

Narcan is the choice drug, in the emergency setting when opioid overdose is suspected, it has previously been used in the treatment of opioid dependence, but the medication naltraxone, which can be taken orally, and has a much longer duration of action. It has also been used with much success in the reduction of gastritis and esophagus associated with opioid therapy in mechanically ventilated patients.

Narcan is also a component of many newly developed drugs used in the treatment of opium addiction, and has been distributed to opium addicts as an emergency kit, in city's in Canada, the US and Europe.

Opioids

Contraindications

Allergy to class

Caution

- CV disease
- Opioid addiction
- Impaired Liver Function
- Cardiotoxic drugs

Adverse Reactions

Cardiovascular
- Ventricular Fibrillation
- Cardiac Arrest
- Tachycardia
- Hypertension
- Pulmonary Edema
- Hypotension

Central Nervous System
- Nausea
- Vomiting
- Seizure
- Withdrawal Symptoms
- In Peds – Irritability
- Tremors

Interactions

When Narcan is administered intravenously (I.V.), the onset of action is generally apparent within two minutes. The onset of action is slightly less rapid when it is administered subcutaneously (S.C.) or intramuscularly (I.M.). The duration of action is dependent upon the dose and route of administration of Narcan. Intramuscular administration produces a more prolonged effect than intravenous administration. Since the duration of action of Narcan may be shorter than that of some opiates, the effects of the opiate may return as the effects of Narcan dissipates. The requirement for repeat doses of Narcan will also be dependent upon the amount, type and route of administration of the opioid being antagonized.
Overdose

Narcan is an opioid antagonist. Physical dependence associated with the use of Narcan has not been reported. Tolerance to the opioid antagonist effect of Narcan is not known to occur.

There is limited clinical experience with Narcan overdosage in humans.

Elimination

Narcan is rapidly distributed throughout the body. It is metabolized by the liver, primarily by glucuronide conjugation and excreted in urine. In one study the serum half-life in adults ranged from 30 to 81 minutes.