

Toxicological Emergencies - Opioids



Pea Ridge Fire department
EMS refresher

Introduction

- Toxicologic emergencies require you to think critically to identify the substances involved.
 - Determine your differential diagnosis.
 - Formulate your treatment based on the anticipated clinical course of your patient.

Terms

- Toxicology
 - The study of toxic or poisonous substances
- Pharmacokinetics
 - The activity of drugs in the body over time
- Drug
 - A substance that has some therapeutic effect when given in the appropriate circumstances and appropriate dose

Terms

- Poison
 - A substance that could damage structures or impair function of the body
- Toxin
 - A poison or harmful substance produced by bacteria, animals, or plants
- Overdose
 - The outcome of taking a drug in excess

Terms

- Bioavailability
 - Percentage of unchanged substance in systemic circulation
- Half-life
 - Time needed for the average person to metabolize or eliminate 50% of a substance in the plasma

Terms

- Excretion
 - Removal of a drug from the body
- Antidote
 - Something that counteracts the effects of a poison

Types of Toxicologic Emergencies

- Intentional
 - Suicide
 - Criminal activities
- Unintentional
 - Children
 - Workplace exposure



© Jones & Bartlett Learning.

Overview of Substance Abuse

- Substance abuse often results in a social stigma, in addition to the physical effects.
- A wide and growing variety of substances is in use today.
- Debate exists regarding medicinal versus recreational use of some drugs.
- Definition of substance abuse differs among cultures.

Overview of Substance Abuse

- Drug abuse: use of drugs that causes harm to the user or to others affected by the user
- Habituation: psychological dependence on a drug or drugs

Overview of Substance Abuse

- Physical dependence: a physiologic state of adaptation to a drug
- Psychological dependence: emotional state of craving a drug to maintain well-being
- Tolerance: physiologic adaptation to drug effects

Overview of Substance Abuse

- Withdrawal syndrome: occurs after the abrupt cessation or decrease of a drug
- Drug addiction: chronic disorder characterized by the compulsive use of a substance
- Antagonist: drug with affinity for a cell receptor

Overview of Substance Abuse

- Potentiation: enhancement of the effect of one drug by taking it with another drug
- Synergism: action of two substances in which the effects are greater than independent effects

Patient Assessment

- The general assessment approach is the same for all patients.
- Ensure a good overall clinical picture of the patient.
- Patients with toxicologic emergencies may also have sustained traumatic injuries.

Scene Size-Up

- Scene safety is paramount.
 - Look for clues such as pill bottles, household cleaners, or handwritten notes.
- Patients who have taken an overdose may be dangerous.
 - Call for law enforcement or a crisis unit if necessary.

Scene Size-Up



Courtesy of United States Department of Justice.
Drug Enforcement Administration



© Andrew Burns/Shutterstock



Courtesy of United States Department of Justice.
Drug Enforcement Administration



Courtesy of United States Department of Justice.
Drug Enforcement Administration



Courtesy of United States Department of Justice.
Drug Enforcement Administration



© iStock/Thinkstock/Getty

Primary Survey

- Form a general impression.
- Identify concerns or life threats.
- Identify MOI or NOI.
- Determine severity and set the priorities.
- Basic airway management enables time to obtain needed information.

History Taking

- Use OPQRST and SAMPLE history.
- Ask the following:
 - What is the substance?
 - When was it ingested, injected, absorbed, or inhaled?



© Jones & Bartlett Learning.

History Taking

- Ask the following (cont'd):
 - How much was taken, injected, absorbed, or inhaled?
 - What else was taken?
 - Has the patient vomited or aspirated?
 - Why was the substance taken?

Secondary Assessment

- Toxicologic emergencies are often medical emergencies only.
- Patients may have alterations in mental status and be prone to nausea and vomiting.
- For trauma, perform the appropriate trauma assessment based on whether the patient has a significant MOI.

Reassessment

- Monitor the patient's condition.
- Reprioritize the status if necessary.
- Check interventions.

Emergency Medical Care

- Ensure scene safety.
- Maintain the airway.
- Ensure that breathing is adequate.
- Ensure that circulation is not compromised.
- Administer high-concentration oxygen.

Emergency Medical Care

- Establish vascular access.
- Consider administering an antidote.
- Prepare to manage shock, coma, seizures, and dysrhythmias.
- Transport as soon as possible.

Narcotics, Opiates, and Opioids

- Pathophysiology
 - They bind with receptor sites in the brain and tissues.
 - Produces analgesia and euphoria
 - Effects are lessened when taken orally.
 - A dose of naloxone may not permanently reverse the effects of heroin.

Narcotics, Opiates, and Opioids

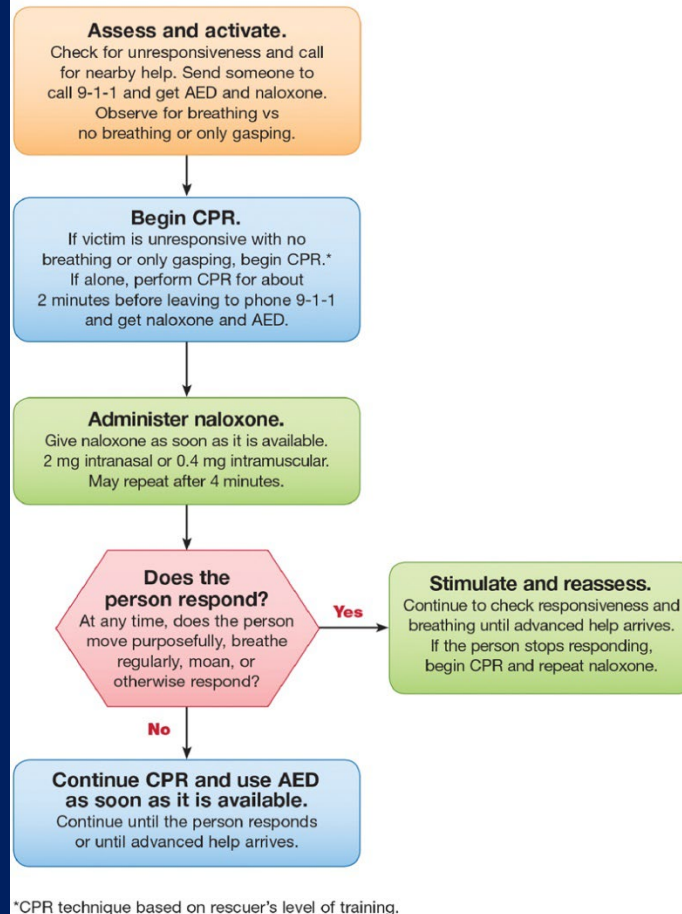
- Assessment
 - Classic presentation features:
 - Euphoria
 - Hypotension
 - Respiratory depression
 - Pinpoint pupils
 - Produce a dreamlike state

Narcotics, Opiates, and Opioids

- Management
 - Establish a patent airway and vascular access.
 - Administer naloxone.
 - If the patient does not respond to naloxone:
 - He or she may have taken a potent synthetic drug.
 - He or she may have taken multiple drugs.

Narcotics, Opiates, and Opioids

Opioid-Associated Life-Threatening Emergency (Adult) Algorithm—New 2015



Reprinted with permission. Web-based Integrated 2015
American Heart Association Guidelines for CPR & ECC Part 10:
Special Circumstances of Resuscitation. © 2015 American
Heart Association, Inc.

Thank you



Please move to the next section