

Emergency

Care and Transportation of the Sick and Injured



Section 4: Medical Emergencies

17: Substance Abuse and Poisoning 1

Cognitive Objectives (1 of 2)

- 4-6.1 List various ways that poisons enter the body.
- 4-6.2 List signs and symptoms associated with poisoning.
- 4-6.3 Discuss the emergency medical care for the patient with possible overdose.
- 4-6.4 Describe the steps in the emergency medical care for the patient with suspected poisoning.

Cognitive Objectives (2 of 2)

- 4-6.5 Establish the relationship between the patient suffering from poisoning or overdose and airway management.
- 4-6.6 State the generic and trade names, indications, contraindications, medication form, dose, administration, actions, side effects, and reassessment strategies for activated charcoal.
- 4-6.7 Recognize the need for medical direction in caring for the patient with poisoning or overdose.

Affective Objectives

- 4-6.8 Explain the rationale for administering activated charcoal.
- 4-6.9 Explain the rationale for contacting medical direction early in the prehospital management of the poisoning or overdose patient.

Psychomotor Objectives (1 of 2)

- 4-6.10 Demonstrate the steps in the emergency medical care for the patient with possible overdose.
- 4-6.11 Demonstrate the steps in the emergency medical care for the patient with suspected poisoning.
- 4-6.12 Perform the necessary steps required to provide a patient with activated charcoal.
- 4-6.13 Demonstrate the assessment and documentation of patient response.

Psychomotor Objectives (2 of 2)

- 4-6.14 Demonstrate proper disposal of the equipment for the administration of activated charcoal.
- 4-6.15 Demonstrate completing a prehospital care report for patients with a poisoning/overdose emergency.

Poison

- Any substance whose chemical action can damage body structures or impair body functions

Substance Abuse

- The knowing misuse of any substance to produce a desired effect

Identifying the Patient and the Poison

- If you suspect poisoning, ask the patient the following questions:
 - What substance did you take?
 - When did you take it or (become exposed to it)?
 - How much did you ingest?
 - What actions have been taken?
 - How much do you weigh?

Determining the Nature of the Poison

- Take suspicious materials, containers, vomitus to the hospital.
- Provides key information on:
 - Name and concentration of the drug
 - Specific ingredients
 - Number of pills originally in bottle
 - Name of manufacturer
 - Dose that was prescribed

Inhaled Poisons

- **Wide range of effects**
 - **Some inhaled agents cause progressive lung damage.**
- **Move to fresh air immediately.**
- **All patients require immediate transport.**

Absorbed Poisons

- Many substances will damage the skin, mucous membranes, or eyes.
- Substance should be removed from patient as rapidly as possible.
- If substance is in the eyes, they should be irrigated.
- Do not irrigate with water if substance is reactive.



Ingested Poison

- Poison enters the body by mouth.
- Accounts for 80% of poisonings
- May be accidental or deliberate
- Activated charcoal will bind to poison in stomach and carry it out of the body.
- Assess ABCs.



Injected Poisons

- Usually result of drug overdose
- Impossible to remove or dilute poison once injected
- Prompt transport



You are the Provider

- You and your EMT-B partner are dispatched to Grandma Jean's Day Care Center for an accidental poisoning.
- The center director says one of her toddlers ingested a cleaning product.
- You hear hysterical crying and screaming. You find a 3-year-old girl in the lap of her teacher in obvious distress.
- What initial treatment should be provided to this child?

Scene Size-up

- Well-trained dispatchers are of great help in a poisoning situation.
- Look for clues of poisons or substances.
 - Medicine bottles may be an indication of overdose
 - Alcoholic beverages/bottles
 - Syringes or drug paraphernalia
 - Unpleasant or odd odor in room
- Ensure your safety.



Poison Control – 800-222-1222

Initial Assessment

- General impression
 - Do not be fooled into thinking a conscious, alert, oriented patient is stable.
 - Systemic reactions may take time to develop.
- Signs of distress and altered mental status suggest a systemic reaction.

Airway and Breathing

- Open airway; provide adequate ventilation.
- If patient is unresponsive, use airway adjunct.
- Suctioning is critical; poisoned patients may vomit.
- BVM may be needed.
- Take spinal precautions.

Circulation

- **Circulatory status can vary.**
- **Assess pulse, skin color.**
- **Some poisons are stimulants, others depressants.**
- **Some cause vasoconstriction, others vasodilation.**
- **Bleeding may not be obvious.**

Transport Decision

- Alterations to ABCs and a poor general impression require immediate transport.
- Check industrial settings for specific decontamination sites/antidotes.
- Consider decontamination before transport.

You are the Provider

(continued)

- You notice a garbage can next to the child containing vomitus.
- Child is conscious and alert. Airway is patent, respirations 34 labored breaths/min.
- Area around mouth is bright red with blisters.
- Inside her mouth are red, irritated tissue and multiple blisters.

You are the Provider

(continued)

- Breath has a strong chemical smell.
- You immediately provide high-flow oxygen.
- What additional resources do you require?

Focused History and Physical Exam

- SAMPLE history questions:
 - What is the substance involved?
 - When did the patient ingest or become exposed?
 - How much was ingested or what was the level of exposure?
 - Over what period of time did the patient take the substance? Minutes or hours?
 - Have any interventions helped? Made it worse?
 - How much does the patient weigh?

Focused Physical Exam

- Focus on area of body or route of exposure.
- Baseline vital signs are important.
- Treatment is based on:
 - What they were exposed to
 - When they were exposed to it
 - Signs and symptoms
- Contact medical control or poison control center to discuss options.

Interventions

- Depends on poison.
- Support ABCs.
- Some poisons can be easily diluted or decontaminated before transport.
- Dilute airborne exposures with oxygen.
- Remove contact exposures with water unless contraindicated.
- Consider activated charcoal for ingested poisons.
- Contact medical control to discuss options.

You are the Provider (continued)

- You learn that your patient ingested CLR cleaner approximately 5 minutes before your arrival.
- Started vomiting almost immediately.
- Your partner calls poison control center and medical control.
- The CLR label states:
 - Do not induce vomiting but drink a glass of water followed by a glass of milk.
 - Call a physician immediately.

You are the Provider (continued)

- What information should you have for the poison control center or medical control?
- What if you can't make the phone call to poison control?

You are the Provider

(continued)

- Poison control and medical control recommend giving the patient water.
- Patient's breathing begins to slow. Vital signs:
 - Respirations 22 breaths/min
 - Pulse 90 beats/min, weak
 - BP 60 by palpation
- Her crying has subsided. She is becoming lethargic and unresponsive to verbal stimuli.
- Dispatch confirms that ALS should be on scene in 2 minutes.

You are the Provider

(continued)

- Is this patient getting better?

Detailed Physical Exam

- Perform, at a minimum, on patients:
 - With extensive chemical burns
 - With other significant trauma
 - Who are unresponsive
- ABCs are the priority.

Ongoing Assessment

- Patient conditions can change quickly.
- Continually reassess ABCs.
- Repeat vital signs.
- If exposure level is unknown, reassess frequently.
- Communicate as much as possible to receiving hospital.
- Take MSDS with you or have faxed en route.

Emergency Medical Care

- External decontamination is important.
- Care focuses on support: assessing and maintaining ABCs.
- You may be permitted to give activated charcoal for ingested poisons.

Activated Charcoal (1 of 3)

- Charcoal is not indicated for:
 - Ingestion of an acid, alkali, or petroleum
 - Patients with decreased level of consciousness
 - Patients who are unable to swallow
- Usual dosage is 25 to 50 g for adults and 12.5 to 25 g for pediatric patients.

Activated Charcoal (2 of 3)

- Obtain approval from medical control.
- Shake bottle vigorously.
- Ask patient to drink with a straw.
- Record the time you administered the activated charcoal.
- Be prepared for vomiting.

Activated Charcoal (3 of 3)



Specific Poisons

- **Tolerance**
 - Need for increased amount of drug to have same desired effect
- **Addiction**
 - Overwhelming desire or need to continue using an agent

Alcohol (1 of 3)

- Most commonly abused drug in the US
- Kills more than 200,000 people a year
- Alcohol is a powerful CNS depressant.
- Acts as a sedative and hypnotic
- A person that appears intoxicated may have a medical problem.

Alcohol (2 of 3)

- Intoxicated patients should be transported and seen by a physician.
- If patient shows signs of serious CNS depression, provide respiratory support.
- A patient with alcohol withdrawal may experience delirium tremors (DTs).

Alcohol (3 of 3)

- Patients with DTs may experience:
 - Agitation and restlessness
 - Fever
 - Sweating
 - Confusion and/or disorientation
 - Delusions and/or hallucinations
 - Seizures

Opioids (1 of 2)

- Drugs containing opium
- Most of these, such as codeine, Darvon, and Percocet, have medicinal purposes.
- The exception is heroin, which is illegal.
- Opioids are CNS depressants causing severe respiratory distress.

Opioids (2 of 2)

- Care includes supporting airway and breathing.
- You may try to wake patients by talking loudly or shaking them gently.
- Always give supplemental oxygen and prepare for vomiting.

Sedative-Hypnotic Drugs

- These drugs are CNS depressants and alter level of consciousness.
- Patients may have severe respiratory depression and even coma.
- The main concern is respiratory depression and airway clearance, ventilatory support, and transport.

Abused Inhalants (1 of 2)

- Common household products inhaled by teenagers for a “high”
- Effects range from mild drowsiness to coma
- May often cause seizures



Abused Inhalants (2 of 2)

- Patient is at high risk for sudden cardiac arrest.
- Try to keep the patients from struggling or exerting themselves.
- Give oxygen and use a stretcher to move patient.
- Prompt transport is essential.

Sympathomimetics

- CNS stimulants cause hypertension, tachycardia, and dilated pupils.
- Amphetamine and methamphetamine are commonly taken by mouth.
- Cocaine can be taken in many different ways.
 - Can lead to seizures and cardiac disorders
- Be aware of personal safety.

Marijuana

- Smoked by 20 million people daily in the US
- Produces euphoria, relaxation, and drowsiness
- Impairs short-term memory and ability to work
- Transport to hospital is rarely needed.
- Marijuana can be used as vehicle for other drugs, ie, it can be covered with PCP or crack.

Hallucinogens (1 of 2)

- Alter an individual's sense of perception
- LSD and PCP are potent hallucinogens.
- Sometimes, people experience a “bad trip.”
- Patient typically are hypertensive, tachycardic, anxious, and paranoid.

Hallucinogens (2 of 2)

- Use a calm, professional manner and provide emotional support.
- Only restrain if danger of injury exists.
- Watch the patient carefully during transport.

Anticholinergics

- “Hot as a hare, blind as a bat, dry as a bone, red as a beet, and mad as a hatter”
- Block the parasympathetic nerves
- Patient may go from “normal” to seizure to death within 30 minutes.
- Consider ALS backup.

Cholinergic Agents

- Commonly used as nerve agents for warfare
- Overstimulate body functions controlled by the parasympathetic nervous system
- Organophosphate insecticide or wild mushrooms are also cholinergic agents.

Signs and Symptoms of Cholinergic Poisoning

- **D** Defecation
- **U** Urination
- **M** Miosis
- **B** Bronchorrhea
- **E** Emesis
- **L** Lacrimation
- **S** Salivation
- **S** Salivation
- **L** Lacrimation
- **U** Urination
- **D** Defecation
- **G** GI irritation
- **E** Eye constriction / Emesis

Care for Cholinergic Poisoning

- Main concern is to avoid exposure
- May require field decontamination
- Priority after decontamination is to decrease the secretions in the mouth and trachea.
- Provide airway support.
- May be treated as a HazMat incident

Aspirin

- Signs and symptoms
 - Nausea/vomiting
 - Hyperventilation
 - Ringing in ears
 - Confusion
 - Seizures
- Patients should be transported quickly to the hospital.



Acetaminophen

- Overdosing is common.
- Generally not very toxic
- Symptoms may not appear until it is too late.
- Liver failure may not be apparent for a full week.
- Gathering information at the scene is very important.

Other Alcohols

- Methyl alcohol and ethylene glycol are more toxic than ethyl alcohol.
- May be taken by chronic alcoholics who cannot obtain drinking alcohol
- More often taken by someone attempting suicide
- Immediate transport is essential.

Food Poisoning

- *Salmonella* bacterium causes severe GI symptoms within 72 hours.
- *Staphylococcus* is a common bacteria that grows in foods kept too long.
- Botulism often results from improperly canned foods.

Care for Food Poisoning

- Try to obtain as much history as possible.
- Transport patient to hospital promptly.
- If two or more persons have the same illness, bring some of the suspected food to the hospital, if possible.

Plant Poisoning

- Several thousand cases of plant poisonings occur each year.
- If you suspect plant poisoning:
 - Assess the patient's airway and vital signs.
 - Notify poison control center.
 - Take the plant to the emergency department.
 - Provide prompt transport.

