

Medication Review for EMTs

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TOPIC: Medication review for EMTs

Time: 3 hours

Level: Cognitive-Application

Teaching/Learning AIDS: handouts, power point, projector, sample medications/medication trainers

Summary: This class will review basic pharmacology and medications for EMTs. Following the lecture, students will be given the opportunity to participate in scenarios to reinforce the learning.

OBJECTIVES

At the completion of the lesson, the SWBAT state the definitions for pharmacology terminology to a 100% accuracy.

At the completion of the lesson, the SWBAT will be able to describe the 6 R's of medication administration.

At the completion of the lesson, the SWBAT correctly list the medications, doses, contraindications and side effects of all medications EMTs can administer per Maryland Protocol.

Given medical emergency scenarios, the SWBAT will be able to determine the appropriate medication needed and administer the proper dose to the patient in accordance with Maryland Protocols.

PREREQUISITE KNOWLEDGE & SKILLS Students should be currently certified Maryland EMTs.

RESOURCES/REFERENCES: Maryland Protocols. **EMT Textbook**

OUTLINE	Instructor Notes
I Introduction of self and topic	
II Motivator	Medical evidence frequently results in protocol changes. As EMTs it is your responsibility to stay up to date on those changes to avoid harming a patient. During this lesson, we will review the current medications EMTs can administer and we will also have scenarios to help reinforce when each medication should be used.

<p>III. OBJECTIVES</p> <p>A. At the completion of the lesson, the SWBAT state the definitions for pharmacology terminology to a 100% accuracy.</p> <p>B. At the completion of the lesson, the SWBAT will be able to describe the 6 R's of medication administration.</p> <p>C. At the completion of the lesson, the SWBAT correctly list the medications, doses, contraindications and side effects of all medications EMTs can administer per Maryland Protocol.</p> <p>D. Given medical emergency scenarios, the SWBAT will be able to determine the appropriate medication needed and administer the proper dose to the patient in accordance with Maryland Protocols.</p>	
<p>III. Overview</p> <p>A. Basic Pharmacology Review</p> <p>B. Maryland Protocols for Medication Administration</p> <p>C. Scenarios</p>	
<p>IV. Basic Pharmacology Terminology</p> <p>A. Medication</p> <p>B. Pharmacodynamics</p> <p>C. Agonist</p> <p>D. Antagonist</p> <p>E. Action</p>	<p>A. Medication- a substance used to prevent or treat disease or relieve pain</p> <p>B. Pharmacodynamics- the process by which medication works on the body</p> <p>C. Agonist- medication that causes stimulation of receptors</p> <p>D. Antagonist: Medication that binds to a receptor and blocks other medications or chemicals from attaching there</p> <p>E. Action: therapeutic effect that a medication has</p>

<p>F. Indications</p> <p>G. Contraindications</p> <p>H. Side Effects</p> <p>I. Enteral Medications</p> <p>J. Parental Medications</p>	<p>F. Indications- reasons for giving a particular medication</p> <p>G. Contraindications- reasons for potentially withholding a medication</p> <p>H. Side Effects-any actions of the medication other than the desired ones. Can be harmful or even fatal to the pt. in some cases.</p> <p>I. Enteral Medications- enter the body through the digestive system</p> <p>J. Parenteral- medications that enter the body for some other means. For example injection</p>
<p>V. Routes of Medications</p> <p>A. Oral</p> <p>B. IV</p> <p>C. Subcutaneous</p> <p>D. Intramuscular</p> <p>E. Inhalation</p> <p>F. Sublingual</p> <p>G. Transdermal</p> <p>H. Intranasal</p>	<p><i>As you cover each route ask students to tell you if there are any medications that EMTs administer via that route.</i></p>
<p>VI. Forms of Medications</p> <p>A. Tablets and Capsules</p> <p>B. Suspensions</p> <p>C. Solutions</p> <p>D. Metered Dose Inhalers</p> <p>E. Transcutaneous</p> <p>F. Gels</p> <p>G. Gas</p>	<p>A. Aspirin, Acetaminophen, Nitro</p> <p>B. Activated Charcoal</p> <p>C. Epi, Narcan</p> <p>D. Albuterol</p> <p>E. Nitro patch (not administered by EMT but pt. may be wearing one)</p> <p>F. Glucose</p> <p>G. Oxygen</p>
<p>VII. Six Rights</p> <p>A. Right patient</p> <p>B. Right medication</p> <p>C. Right dose</p> <p>D. Right Route</p> <p>E. Right Time</p> <p>F. Right Documentation</p>	
<p>VIII Acetaminophen</p> <p>A. Indications</p> <p>B. Adverse Effects</p> <p>C. Precautions</p> <p>D. Contraindications</p>	<p>A. 2 yrs and older with mild to moderate discomfort (2-5 on FACES scale)</p> <p>B. No clinically significant</p> <p>C. Pt should still be transported for evaluation</p> <p>D. Head injury, hypotension, pt. has</p>

<p>E. Precautions</p> <p>F. Dosage</p>	<p>already taken a medication with acetaminophen within the previous 4 hours, inability to swallow, respiratory distress, persistent vomiting, liver disease, current alcohol ingestion, allergy to acetaminophen, less than 2 years old.</p> <p>E. Use unit dose. Do not use multidose bottle of liquid.</p> <p>F. 2-4 years 160mg/5ml liquid 5-12 years- Two unit doses 160mg for total of 320 mg 13 and older- 4 160 mg. unit doses for a total of 640mg or 325mg pills X2 for a total of 650 mg.</p>
<p>IX Activated Charcoal WITHOUT sorbitol</p> <p>A. Indications</p> <p>B. Adverse Effects</p> <p>C. Precautions</p> <p>D. Contraindications</p> <p>E. Preparations</p> <p>F. Dosage</p> <p>G. Special notes</p>	<p>A. Poisoning by mouth</p> <p>B. May cause nausea and vomiting</p> <p>C. Does not adsorb all drugs and toxic substances</p> <p>D. Altered mental status, pts who have received an emetic</p> <p>E. 25 grams/125ml bottle or 50 grams in 250 ml bottle</p> <p>F. 1 gram/kg for all ages. (kg=2.2 pounds)</p> <p>G. Poison Control should be contacted for poisonings in addition to regular medical consult. BUT orders for medication must come from an approved base station</p>
<p>X. Albuterol, Proventil, Ventolin and other fast acting bronchodilators</p> <p>A. Indications</p> <p>B. Adverse Effects</p> <p>C. Precautions</p>	<p>A. Respiratory Distress, Bronchospasm/wheezing associated with: Asthma, Chronic Bronchitis, Emphysema, Allergic Reactions</p> <p>B. Tachycardia/palpitations, hypertension, angina, nervousness, anxiety, tremors, dizziness, headache, sweating, N/V, sore throat</p> <p>C. Repeated excessive use may</p>

<p>D. Contraindications E. Preparations</p> <p>F. Dosage</p> <p>G. Special Notes</p>	<p>cause severe bronchospasm.</p> <p>D. Inhaler not prescribed to pt.</p> <p>E. Hand held, metered dose aerosol inhaler</p> <p>F. 2 doses/4puffs over a 30 minute period.</p> <p>G. The inhaler must be prescribed to the patient. Additional doses require medical consult.</p>
<p>XI. Aspirin</p> <p>A. Indications B. Contraindications C. Adverse Effects D. Precautions E. Dosage</p>	<p>A. Chest pain when AMI expected</p> <p>B. Known hypersensitivity</p> <p>C. Heartburn, N/V, Wheezing</p> <p>D. GI Bleeding and upset</p> <p>E. Adults – 324 or 325 chewed. Not indicated for pediatrics.</p>
<p>XII. Epinephrine 1:1000</p> <p>A. Indications</p> <p>B. Adverse Effects</p> <p>C. Precautions</p> <p>D. Contraindications</p> <p>E. Preparations</p> <p>F. Dosage</p> <p>G. Special Notes</p>	<p>A. Moderate to severe allergic reaction with respiratory distress, or mild allergic reaction with a history of a life threatening reaction Pediatric Pts with severe asthma</p> <p>B. Tachycardia/palpitations, angina, headache, n/v, dizziness, hypertension, nervousness, anxiety, tremors</p> <p>C. Unless severe allergic reaction or severe asthma, medical consult must be obtained before administering to pregnant, cardiac, or adult asthma patients</p> <p>D. No contraindications is presence of anaphylaxis</p> <p>E. Vial 1mg in 1 ml Preloaded syringe. 0.5mg in 0.5 ml for adult; 0.15 mg in 0.15ml for pediatric Epi-auto injector Adult 0.3mg, pediatric 0.15mg</p> <p>F. Pt 5 years and up- 0.5mg Pt less than 5- 0.15mg EPI-PEN- adult 0.3mg; Pediatric 0.15mg</p> <p>G. Additional doses require medical consultation. Preloaded syringe may be patients or ambulance services. CONSULT is REQUIRED for adult ASTHMA</p>

	<p>patients. Epi-pen can be administered through clothing IM lateral aspect of the thigh</p>
<p>XIII Naloxone/Narcan</p> <p>A. Indications</p> <p>B. Contraindications</p> <p>C. Adverse Effects</p> <p>D. Precautions</p> <p>E. Dosage</p> <p>F. Special Information</p>	<p>A. Reversal of respiratory depression induced by opioid/narcotic agent</p> <p>B. Pts under 28 days</p> <p>C. Opioid withdrawal</p> <p>D. Should be administered and titrated so respiratory effort returns, but not intended to restore full consciousness. The effect lasts an average of 40 minutes. It will wear off before opioid. Pt should be encouraged to go to hospital. If patient refuses transport after Narcan admin, base station must be contacted.</p> <p>E. 2mg IN, divided equally between nares. Max 1mg/nare. OR 4mg/0.1ml in one nare Repeat as necessary to maintain respiratory activity.</p> <p>F. Acts within a few minutes. May result in withdrawal symptoms in addicted patients.</p>
<p>XIV Nitroglycerin</p> <p>A. Indications</p> <p>B. Adverse Effects</p> <p>C. Precautions</p> <p>D. Contraindications</p> <p>E. Preparations</p>	<p>A. Chest pain and pt has SL nitro prescribed to them</p> <p>B. Hypotension, headache, dizziness, tachycardia</p> <p>C. Reassess BP before and after administration.</p> <p>D. BP <90. A drop in systolic BP of 20mmHg or more after administration, HR<60; medication not prescribed to pt.. Pt<13 years old; Pt took medications for pulmonary hypertension (adcirca or revatio) or erectile dysfunction drugs (viagra, Levitra, Cialis) within the past 48 hours. If pt has taken these meds contact medical control to override this contraindication.</p> <p>E. Spray or tablet</p>

<p>F. Dosage</p>	<p>F. Adult 1 tab SL or 1 spray SL. Repeat in 3-5 minutes if pain persists. Maximum of 3 doses between what the pt took and what the provider administers. Not indicated for children under the age of 13.</p>
<p>XV Oral Glucose</p> <p>A. Indications</p> <p>B. Adverse Effects</p> <p>C. Precautions</p> <p>D. Contraindications</p> <p>E. Preparations</p> <p>F. Dosage</p>	<p>A. Altered mental status- known diabetic; unconscious -unknown reason</p> <p>B. Not clinically significant</p> <p>C. Pt without a gag reflex may aspirate</p> <p>D. None</p> <p>E. 10-15 grams of glucose (24,30, or 37.5 gram tube)</p> <p>F. 10-15 grams of glucose past between the gum and the cheek. Consider one additional dose if not improved after 10 minutes</p>
<p>XVI. Oxygen</p> <p>A. Indications</p> <p>B. Contraindications</p> <p>C. Adverse Effects</p> <p>D. Precautions</p> <p>E. Dosage</p>	<p>A. Evidence of hypoxia (SpO₂<94%) Respiratory distress, dyspnea Cardiopulmonary arrest Trauma, CO exposure,</p> <p>B. No clinically significant</p> <p>C. High concentrations of O₂ can reduce the respiratory drive in some COPD patients; these patients should be closely monitored.</p> <p>D. Never withhold oxygen from those who need it. Give with caution in COPD pts. Simple or partial rebreather- minimum flow of 6l/min. NRB minimum flow of 12l/min.</p> <p>E. 12-15l/min via NRB or 2-6l/m via nasal cannula as needed. CO Exposure use NRB to maintain SpO₂ at 100%</p>
<p>XVII. Scenario Reviews</p>	<p><i>Separate handouts have been provided for this activity.</i></p>
<p>XVIII. General Review</p>	

<p>A. Basic Pharmacology</p> <p>B. Maryland Protocols</p> <p>C. Pt. Scenarios</p>	<p><i>A. Ask students for the definition of a few of the words covered in the class</i></p> <p><i>B. Call out medications one at a time and ask different students to tell you one thing about that medication</i></p> <p><i>C. Ask students how they felt about scenarios and what issues they may have had</i></p>
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EVALUATION

Given a scenario the student will be required to determine the correct medication, complete the six R's of administration and be able to describe contraindications and adverse effects.