Content Description

Caring for critically ill patients is a challenging job at best. The patients are frequently unstable and they are tenuously holding onto a thread of hemodynamic stability. So, what are we called upon to do? Well, we are tasked with understanding the cardiovascular effects of multiple medications and their interactions between them, when to wean which and what constitutes a good result.

Patients on multiple drips affecting the cardiovascular system are extremely ill, and frequently unstable, so, is it any wonder that the patient’s need frequent titration of these drips when we, in the normal course of what we must do, can increase the patient’s pain level, anxiety, agitation and delirium, all of which can have a major impact on the hemodynamic status and the vasoactive drip rate requirements of our patients.

That is what has driven this presentation. At times it may seem that the information is too theoretical for the bedside nurse environment, however, because the patient’s hemodynamics and vasoactive drip medication needs can easily change simply because we are providing them care, this theory is important to understand, so that we may make strong, sound judgments and understand the real reason that physicians choose the medications that they do and the implications of those decisions for the care of the patient!

Learning Objectives
At the end of this session, the participant will be able to:

1. Identify the four primary effects of cardiovascular medications on the cardiovascular system.

2. Identify at least three antiarrhythmics, their classification, circumstances where they would be used and nursing related issues with their use.

3. Identify at least three antihypertensives, circumstances where they would be used and nursing related issues with their use.

4. Identify at least three agents that effect clotting, circumstances where they would be used and nursing related issues with their use.
Outline

I. Introduction
   A. Action potential
      1. Sodium
      2. Potassium
      3. Calcium
   B. the four ‘tropes’
      1. Inotrope
      2. Chronotrope
      3. Dromotrope
      4. Lusitrope

II. Amiodarone
   A. Classification
   B. Uses
   C. Effects
      1. QT interval
      2. Blood pressure
      3. Allergies
      4. Heart rate
      5. Cardiac conduction
      6. With other medications
      7. Conversion
      8. Half-life

III. Lidocaine
   A. Classification
   B. Uses
   C. Effects
      1. Toxicity
      2. Neurological
      3. Heart rate
      4. With other medications

IV. Pronestyl
   A. Classification
   B. Uses
   C. Effects
      1. Administration
      2. Renal
      3. Metabolism
      4. With other medications
      5. Cardiac

V. Diltiazem
   A. Classification
B. Uses
C. Effects
   1. Hypotension
   2. Heart block
   3. Heart rate
   4. With other medications
   5. Half-life

VI. Argatroban
   A. Classification
   B. Uses
   C. Effects
      1. Thrombin based
      2. Coagulation labs
      3. Hepatic
      4. With other medications

VII. Heparin
   A. Classification
   B. Uses
   C. Effects
      1. Platelets
      2. HIT
      3. With other medications

VIII. Leprudin
   A. Classification
   B. Uses
   C. Effects
      1. Renal
      2. With other medications

IX. Abciximab
   A. Classification
   B. Uses
   C. Effects
      1. Hypersensitivity
      2. Platelets
      3. Coagulation tests
      4. With other medications

X. Eptifibatide
   A. Classification
   B. Uses
   C. Effects
      1. Renal
2. Platelets
3. Coagulation tests
4. With other medications

XI. Tirofiban
   A. Classification
   B. Uses
   C. Effects
      1. Renal
      2. With other medications

Special Agents

XIII. Nitroglycerin
   A. Classification
   B. Uses
   C. Effects
      1. Hypotension
      2. Headache
      3. Half-life
      4. Delivery system
      5. Maximum dosage

XIV. Nitroprusside
   A. Classification
   B. Uses
   C. Effects
      1. Hypotension
      2. Headache
      3. Half-life
      4. Delivery system
      5. Toxicity

XV. Introduction
   A. Alpha-1 receptors
   B. Alpha-2 receptors
   C. Beta-1 receptors
   D. Beta-2 receptors
   E. Dopaminergic receptors

XVI. Delivery of medication
   A. IV pumps
   B. Cal factors
   C. Smart pumps

XVII. Weight based dosing
XVIII. What is a vasopressor?
   A. Primary effects
   B. Secondary effects
   C. Antidote

XIX. Dopamine
   A. Receptors effected
   B. Effects
      1. Dose dependent
      2. Tachycardia
      3. Hypertension
      4. Onset of action
      5. Half-life
   C. Use

XX. Dobutamine
   A. Receptors effected
   B. Effects
      1. Dose dependent
      2. Tachycardia
      3. Hypertension
      4. Onset of action
      5. Half-life
   C. Use

XXI. Epinephrine
   A. Receptors effected
   B. Effects
      1. Tachycardia
      2. Hypertension
      3. Onset of action
      4. Half-life
   C. Use

XXII. Isoproterenol
   A. Receptors effected
   B. Effects
      1. Dose dependent
      2. Tachycardia
      3. Hypertension
      4. Onset of action
      5. Half-life
   C. Use

XXIII. Norepinephrine
   A. Receptors effected
B. Effects
  1. Tachycardia
  2. Hypertension
  3. Onset of action
  4. Half-life

C. Use

XXIV. Phenylephrine
   A. Receptors effected
   B. Effects
     1. Tachycardia
     2. Hypertension
     3. Onset of action
     4. Half-life
   C. Use

XXV. Vasopressin
   A. Receptors effected
   B. Effects
     1. Tachycardia
     2. Hypertension
     3. Onset of action
     4. Half-life
   C. Use

XXVI. Choosing an agent
   A. Septic Shock
   B. Hyperdynamic shock
   C. Hypodynamic shock

XXVII. Titrating agents
   A. Amounts
   B. Frequency
   C. Multiple agents
   D. Which first
      1. Last on, first off?
      2. Side effects?
      3. Highest rate?
      4. Lowest rate?

Channel Blockers

XXVIII. Esmolol
   A. Receptors effected
   B. Effects
     1. Bradycardia
2. Hypotension
3. Onset of action
4. Half-life
5. Loading dose

C. Use

XXIX. Labetalol
A. Receptors effected
B. Effects
1. Bradycardia
2. Hypotension
3. Onset of action
4. Half-life
5. Loading dose

C. Use

XXX. Nicardipine
A. Receptors effected
B. Effects
1. Bradycardia
2. Hypotension
3. Onset of action
4. Half-life
5. Loading dose

C. Use

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