Disclosure

- I do not have a vested interest in or affiliation with any corporate organization offering financial support or grant monies for this continuing education activity, or any affiliation with an organization whose philosophy could potentially bias my presentation.

Objectives

Pharmacist Objectives:
- Describe the role of a pharmacist on a code blue (adult and pediatric) response team
- Examine literature to support pharmacists on a code blue (adult and pediatric) response team
- Discuss opportunities for pharmacist’s interventions on other code response teams (i.e., Trauma, Stroke, Sepsis, DKA, Rapid Response team).

Technician Objectives:
- Describe the role of a code response team
- List opportunities for pharmacy involvement in code response teams
- State common adult and pediatric emergency situations

Why Be Involved?

- Critical situations
  - High risk of medication errors
  - Potentially uncommon medication(s)
  - Anxiety & adrenalin
- Expedite medications
  - Prepare at bedside
  - Procure from afar
- Education
  - For health care team
  - For patient & family
- Communication & follow up
Who Supporting Me?

- ACLS/BLS guidelines
- ASHP Guidelines on Emergency Medicine Services
  - Essential direct patient care role
    - Patient care involving high-risk medications and procedures
    - Resuscitation
- ACCP/SCCM Position Paper on Critical Care Pharmacy Services
  - Desirable activities
    - ACLS/PALS response 24/7
- Literature
  - Am J Health Syst Pharm. 2012 Dec 1;69(23):e81-95.

Adult Emergency Responses

- Cardiac Arrest
- Respiratory Arrest
- Rapid Response Teams
- Seizure
- Stroke
- Trauma
- Sepsis
- Acute Agitation
- Procedural Sedation

Rapid Response

- Institute for Healthcare Improvement’s “5 Million Lives Campaign”
- Focused care on deteriorating patient
  - Early recognition
  - Prompt treatment
- Types of response varies
  - Respiratory decline, hyper/hypotension, seizures, etc
- Implementation may improve morbidity & mortality
  - Reduction in cardiopulmonary arrest

Pharmacist in Rapid Response

- Lower mortality when part of CPR teams
- 1 month pilot study with 32 responses
  - 65.6% of patients required ≥ 1 medication intervention
  - 49 interventions on 21 patients
- Role:
  - Medication dosing
  - Medications procurement & preparation
  - Assessing contributing factors
  - Medication discontinuation/addition

Rapid Response Team


Stroke Involvement

Justification for Stroke

- Comprehensive Stroke Care Center staff requirement
  - Pharmacist with expertise in neurology/stroke care
  - Interdisciplinary team
  - Access to tPA 24/7
- Literature

Pharmacist in Acute Stroke

- Part of response team
- Assist with medication/medical history
- Review inclusion/exclusion criteria for thrombolytic therapy
- Treatment management (hypoglycemia/hypertension)
- Anticoagulation reversal
- tPA dosing, preparation, administration
  - Weight verification
  - Monitoring
  - Transition of care

Tips for Preparing tPA

- Watch first
- Calculate dose & get supplies early
  - Know the differences in vial sizes (50mg vs 100mg)

Tips for Preparing tPA

- Watch first
- Calculate dose & get supplies early
  - Know the differences in vial sizes (50mg vs 100mg)
- Prime tubing prior to removing dose/waste
- Remove waste
- Utilize smart pumps
- Flush tubing with 50-100mL of 0.9% NaCl at completion of infusion
  - 10-12.5 mL residual in tubing

Key Points for tPA

- Dosing
  - 0.9mg/kg (MAX 90mg)
    - 0.09 mg/kg bolus
    - 0.81 mg/kg infusion

- PHARMACOKINETICS:
  - Excretion – hepatic
  - Duration – 80% cleared within 10 minutes of infusion terminated
  - Elimination Half-life (the time for plasma concentration to reduce by 50%) – ~30 to 45 minutes which means:
    - After about 3.5 hours the drug should be completely eliminated

Sepsis
Sepsis

- Surviving Sepsis Guidelines 2012
  - Antibiotics in 1 hour
  - 3 hour bundle
  - 6 hour bundle
- 10-30% compliance with all bundles
- Multi-disciplinary teams may increase these numbers
- Can pharmacists affect patient care & outcomes?

Pharmacists in Sepsis Response

- 585 consultations to 130 patients

Pharmacist in Sepsis Response

- Services:
  - Ensure adequate fluid resuscitation
  - Determine appropriate vasoactive therapy
  - Determine need of inotropic therapy
  - Infection management
  - Endocrine management
  - Ventilatory management
  - Preventative therapy
  - Communication

Acute Agitation

- Behavioral emergency
  - “Code BERT”
- Noncompliant or disruptive patients/visitors
  - Used prior to violence or dangerous situations
- Personnel:
  - Rapid response team
  - Psychiatry (RN and/or MD)
  - Security
  - Charge nurse or supervisor
  - Pharmacist

Acute Agitation

- Respond to event
- De-escalation efforts
- Assist with identifying cause
- Review medications if known
  - Current or home medications
  - Consider withdrawal
- Obtain medications needed
- Medication information
- Education
These Are a Few of My Favorite Things!

Code Blue and You: A Pharmacist’s Role on Code Response Teams

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