“OPTIMAL ANTICOAGULATION THERAPY: AN UPDATE FOR PHARMACY TECHNICIANS”

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OBJECTIVES

Objectives for technicians

1. How the pharmacy technician role is an integral part of the pharmacy team in managing anticoagulation therapies
2. The various disease states that require anticoagulation therapies
3. The medications that are used to treat the disease state
4. The pharmacy settings in which the medications are most appropriate for therapy
5. The antidotes for overdoses
1. **Pharmacy private investigators.**
The pharmacy technicians role is that of a private investigator. The pharmacy technicians have to enter all the patient information and medications correctly, update all diagnoses and allergy codes, research the patients profile, converse with a multitude of healthcare professionals.

Why is this so important?
The technicians are the first and last set of eyes. We need to make sure we process the information correctly and at the final step of the retail, mail order, hospital and infusion settings that all the information is correct before the patient receives the medication.
2. **Manage inventory**

The technicians need to be diligent when conducting a cyclical inventory at your pharmacy site. The outdated drugs need to be logged and processed accordingly. All recalled products need to be pulled from the shelves.

The logic behind madness.

The outdated products can be extremely harmful to the patients health. Infusing outdated products may be deadly. The process may be tedious but in the overall scheme of patient care it is crucial.
3. **Distribution of medication**

The distribution of medication is the multiple checkpoints that the technicians must do at the beginning and end. We want to maintain the highest respect and confidence with the pharmacists that we are working with.

The pharmacy community is a small community and you do not want a tarnished reputation.
4. Patient education
Since the pharmacy technician is the first person that initiates contact with the patients they normally want to inquire about clinical aspects. The technicians role has not expanded to patient consultation but we can properly update the system and inform the pharmacist of the patients problems and concerns.

While we cannot assist the patient with questions we still can be the direct voice for the patients care.
5. **Assisting with emergency patient care**

The extent of emergency patient care does not extend to being CPR certified, knowing where the AED (automated external defibrillation) is or contacting 911.

Why is this important?

The technicians need to be aware of the antidotes for the medications and to know where they are so that they may be readily available. Informing the pharmacist immediately if a patient states they require assistance.
6. **Communicating with healthcare professionals**

The pharmacy technicians roles are constantly changing. We have to make outreaches to other health care professionals to obtain information in regards to a patients care. The technicians must contact other healthcare professionals to request missing information, bridge the office staff with the pharmacist when more information is required.

The pharmacy technicians often have to reconcile missing information and must work diligently and aggressively when attempting to resolve the multitude of issues we encounter.
7. **Resolving insurance issues**

The pharmacy technicians must be insurance experts when processing prescription information, sending the correct information to the various healthcare settings, and how to effectively obtain information.

The pharmacy technicians role is crucial in navigating the various insurance formularies, resolving rejections, being aware of plan limits, establishing positive and excellent relationships with the other healthcare staff.
8. Process evaluation
The technicians are always the first line in terms of the processing the work for each respective pharmacy setting. The pharmacy processes are continually modified based upon best practices and process improvement.

The technicians should always share with their pharmacy teams if “cheat sheets” can be established or actually built into a standard order of process. Keeping a list of plan limits, or links for insurance companies, spreadsheets with pertinent phone and fax numbers.
9. **Quality control**

The pharmacy technicians are taking a more active role in patient care. The technicians based upon the research and patient profile we have firsthand access to duplication of therapy, missed diagnoses or allergies, potential interactions.

By making sure everything in the patients profile is accurate, the correct medication, strength, formulation, quantity and duration of therapy we must always strive for perfection and challenge ourselves on a daily basis.
DISEASE STATES THAT REQUIRE ANTIMOAGULATION THERAPY

- CAD (coronary artery disease) hardening of the arteries. Which may lead to atherosclerosis in which plaque builds up and thrombi may form. 
  Causes: genetics, diet and normal aging.
- DVT (deep venous thrombosis) formation of a blood clot within a deep vein, predominately in the legs. 
  Causes: inactivity, pregnancy, injury to blood vessels, genetics
- PE (pulmonary embolism) one or more pulmonary arteries in the lungs that have become blocked. 
  Causes: DVT that travel to the lungs, pregnancy, injury to blood vessels
- Myocardial infarction: death of heart muscle or heart attack 
  Causes: high blood pressure & cholesterol, smoking, diabetes, obesity
- Heart valve replacements, shunts and stents
MEDICATION HISTORY

- Heparin discovered 1916
- Heparin used clinically in 1937
- Warfarin used in human use in 1954
- Low molecular weight heparin trials 1980's
- Direct thrombin inhibitors 1990's
- Indirect thrombin inhibitors 2000's
- Direct oral thrombin inhibitors 2010
CLASSES OF ANTICOAGULANT THERAPIES

Anticoagulants – reduces the formation of blood clots
  • Coumadin (warfarin)
  • Heparin
CLASSES OF ANTICOAGULANT THERAPIES

Antiplatelet – prevents platelets from sticking together
- Aspirin
- Plavix (clopidgogrel)
CLASSES OF ANTICOAGULANT THERAPIES

Thrombolytics and tissue plasminogen activators – drugs that dissolve clots

- Activase
- TNKase
- Streptase
ANTIDOTES

- Activated charcoal
- Vitamin K
- Protamine sulfate
- Blood transfusion
- Aminocaproic acid
- Tranexamic acid
CONCLUSION

• Reduce the risk of the likelihood harm associated with anticoagulation therapy. Blood-thinning medicines slow blood clotting, preventing complications like blood clots forming on artificial valves, valve obstruction and blood clots traveling to the brain and causing stroke or to the lungs and causing a pulmonary embolism. The main goal is to keep the patient healthy, alive and well.
QUESTIONS???