Adverse Side Effects

Anti-infective Agents
Are utilized to treat infectious processes in the body. The adverse reactions we can see occur with these medications include bone marrow suppression, anaphylaxis, nephrotoxicity, and ototoxicity.

Nursing Interventions/Implications:

**Bone marrow suppression:** With bone marrow suppression we can see neutropenia and thrombocytopenia. With thrombocytopenia: we need to monitor the client for any signs of bleeding (petechiae, ecchymosis, bleeding gums, nose, bleeds); examine all body fluids and excrement for the presence of blood (visible and occult); avoid injections and venipunctures when possible; avoid rectal temperatures, rectal suppositories and enemas; instruct on use of soft toothbrush and electric razor, avoidance of aspirin containing products.

With neutropenia: initiate protective isolation procedures; monitor for signs of infection (fever, sore throat, unusual bleeding); wash hands frequently and thoroughly; strict aseptic technique with all procedures; discourage visitors with active infections.

**Anaphylaxis:** Anaphylaxis is a severe allergic reaction. Manifestations include respiratory distress, edema of face, lips tongue, airways, wheezing and stridor, flushing of the skin, pruritis, urticaria, anxiety, changes in level of consciousness, and alterations in vital signs.

Treatment of anaphylaxis begins with stopping the medication. We also need to maintain a patent airway, give epinephrine (to oppose the effects of histamine, to promote peripheral vasoconstriction and bronchodilation) and diphenhydramine (to block the release of histamine), and carefully monitor for and treat any alterations in cardiovascular function.

**Nephrotoxicity:** Nephrotoxicity is decreased or damaged renal functioning related to the antibiotic therapy. This is most commonly a concern related to the use of aminoglycosides. It’s important to monitor renal function during the administration of aminoglycosides. This includes monitoring input and output as well as serum BUN and creatinine levels.

**Ototoxicity:** This is also most commonly seen in relationship to aminoglycoside administration. Indications of ototoxicity include complaints of tinnitus, decreased hearing, and impaired balance. Careful monitoring of our patient is the important nursing intervention.
Antineoplastic Agents
They are all utilized to kill or inhibit the reproduction of neoplastic cells. We have already reviewed the side effects; potential adverse reactions include hepatotoxicity, nephrotoxicity, and cardiotoxicity.

Nursing Interventions/Implications:
- **Hepatotoxicity:** Monitor for manifestations of liver failure, including nausea and vomiting, abdominal pain, dark urine, changes in level of consciousness, and serum liver function tests.
- **Nephrotoxicity:** Our interventions here will be the same as nephrotoxicity for the anti-infective agents.
- **Cardiotoxicity:** Monitor cardiovascular system, including vital signs and cardiac rhythm.

Anticoagulants
Prevent the extension of and formation of clots. The major side effect that we watch for is bleeding, this is also the main adverse reaction.

Nursing Interventions/Implications:
Monitor for bleeding (vital signs, signs of obvious bleeding, hemoglobin and hematocrit levels, if on heparin monitor APTT, if on coumadin monitor PT/INR). If bleeding occurs, apply pressure to area if possible and notify health care provider. May need to administer Vitamin K to reverse the effects of coumadin, Protamine sulfate to reverse the effects of heparin.

Cardiovascular Agents
This broad category includes:
- **Thrombolytic agents** Key side effects and adverse reactions are hemorrhage and dysrhythmias. Key interventions are monitoring for these side effects.
- **Cardiac glycosides** The major cardiac glycoside that we will administer is digoxin. With digoxin we need to monitor for digitalis toxicity. It is evidenced by anorexia, nausea, vomiting, visual disturbances (seeing halos or colors around lights), bradycardia, heart block, premature ventricular contractions, and tachydysrhythmias. There is an increased risk for digoxin toxicity if our patient is hypokalemic. Nursing interventions include monitoring patients for manifestations of toxicity, teaching manifestations of toxicity to the patient, and in extreme cases of toxicity digoxin immune FAB (digibind) will be given.
- **Diuretics** An adverse reaction that we need to monitor for with the diuretic lasix (furosemide) is ototoxicity. Interventions would be the same.
as with our antiinfectives.

**Beta adrenergic blockers** Adverse side effects include blood dyscrasias, bronchospasms, and CHF. Nursing interventions include monitoring blood work, monitoring the respiratory system, and monitoring for CHF.

**Adrenergic Agonists** Because these medications are potent vasoconstrictors, the major adverse reaction we see occurs with extravasation. If this occurs the site needs to be infiltrated with phentolamine (Regitine) to try to prevent tissue death.

**Central Nervous System Agents**
Narcotic analgesics, Barbiturates, Benzodiazepines, Neuromuscular blocking agents

The adverse effect that we monitor for most carefully is respiratory depression/arrest. This is treated with narcotic antagonists, such as narcan.

**Gastrointestinal Agents**
This category includes:

**Histamine H2 receptor antagonists** Adverse side effects include bone marrow suppression leading to thrombocytopenia, neutropenia, and anemia. Nursing interventions are the same as with the other medications that cause these effects.