Administering Injections and Immunizations

- A quick easy breakdown for MA students

Parental injectable medications

MAs can inject

- Intradermal
- Subcutaneous
- Intramuscular

MAs CANNOT inject

- Intra-arterial
- Intraosseous
- Intrathecal
- intravenous

Preparing to administer injections

Types of syringes:

- 3 ml syringe
- Tuberculin syringe
- Insulin syringe

Types of vials:

- Ampule
- Single dose vial
- Multi dose vial
- Pre filled syringe
- Powder

Administering injections:

1. Explain procedure to pt
2. Prepare skin
3. Ensure proper forms are completed
4. Answer any questions
5. Use proper technique
6. Special attention for infant and child injections

Intradermal injections

- Used in allergy and tuberculin testing
- Small gauge needle (26G-27G)
- Needle is inserted at a 10-15 degree angle
- A wheal or lump should develop at injection site

Subcutaneous injections

- Given in upper, outer arm, upper thigh, or abdomen
- Needle size is around 25G-27G and ½ - ⅝ in long
- Needle is inserted at a 45 degree angle
- Does not need to be rubbed

Used to administer small doses of medication, usually not more than 2 ml. The injection is most often given in the upper, outer part of the arm; abdominal area; or upper thigh. The pt should be asked to sit or lie on the treatment table for safety

Intramuscular injections

- IM injections are placed in the muscle
- Sites often used: Deltoid (can be sitting), ventrogluteal (lateral outside portion of hip), vastus lateralis (mid portion of thigh), dorsogluteal (upper, outer portion of hip)
- Ventrogluteal is preferred over dorsogluteal
- Needles 1-3 in long
- Needle size ranges between 18G-23G depending on the substance being administered
- Z track is used w/ irritating and discoloring substances (should not be massaged)
- IM injections are most often massaged after injection

IM injections are placed in the muscle tissue. The most common sites are the ones listed above. Factors that influence IM injection site selection include pt size, age, viscosity of medication, and muscular density

For injections in the deltoid area, the pt should be sitting. For vastus lateralis, the pt may be sitting or laying in the horizontal recumbent position. Record the site and rotate injection sites to reduce tissue scarring. IM injections are indicated when large doses of medications or oil-based, non water base, or thicker medications must be given. Medications given by the IM method are absorbed over several hours by the rich blood supply of muscle tissue

The viscosity of the medication needs to be considered when choosing a needle gauge. The thicker the medication, the smaller the gauge. In giving injections to pediatric pts, the gauge and length of the needle are smaller than those used for adults

For injecting substances that can be irritating or cause discoloration of the subcutaneous tissues, the Z track IM method is used. Muscle tissue is displaced by holding it to the side of the injection site. Following injection of the medication, the tissue is moved back over the site, blocking any residual substance. Using this technique prevents the medication from following the path of the needle and leaking out onto the tissues. It should not be massaged

Types of vaccines:

- Natural vs. artificial
- Natural is generated after developing illness
- Artificial is produced from vaccines
- Types of vaccines
- Live attenuated (changed) pathogens
- Pathogenic toxin
- Killed pathogen

Common illness reduced by vaccines

- Influenza
- Pneumonia
- Haemophilus influenzae type B
- Measles, mumps, rubella (MMR)
- Diphtheria
- Pertussis
- Rabies
- Tetanus
- Varicella
- Hep a and b
- HPV
- Meningitis

Administering injections to infants and small children:

- The size of the child's arm/leg will help decide the size of the underlying muscle, which determines the needle length appropriate for the muscle thickness. The vastus lateralis is the preferred injection site for infants and young children. for injecting the left vastus lateralis, grasp and stabilize the muscle. Administer the injection carefully in the center of the muscle while holding the tissue taut

Assisting with intravenous injections:

- The IV method of injection is used by the provider or nurse. IV medications act immediately because they are introduced directly into the bloodstream

When more than one dose of a vaccine is needed, it is called a primary series

Summary

- Some parenteral routes of medication administration involve injection medications through the skin or directly into a vein or artery
- Instances when parenteral routes are desirable include when the pt is unable to tolerate medications by mouth, when other routes of administration do not provide the desired effect quickly or predictably enough, when medication given by mouth would be destroyed by the gastrointestinal tract, or when continuous delivery is required to achieve the desired outcome
- Tuberculin and insulin syringes are NEVER interchangeable
- Not all medications are able to be injected by different routes. Always verify that the medication ordered is appropriate for the type of injection ordered
- Good sterile and aseptic techniques should be used when delivering any injectable medication
- Use additional care and caution when giving injections to children. Due to smaller size and mass, inadvertent entry of medication into a blood vessel will have magnified effect
- Vaccines are categorized into three types: live attenuated (changed) pathogens, pathogenic toxins, and killed pathogens