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Diploma in Pharmacy 2nd Year
Hospital & Clinical Pharmacy
Important Questions
Chapter 5 : Compounding In Hospital

| Questions | Page No |
|--|----------------|
| Q1. Describe the Compounding in Hospital. | 3 |
| Q2. Write a note on Bulk Compound. | 3 |
| Q3. Explain the IV Admixture Services. | 4 |
| Q4. Describe the Incompatibility of IV Admixture. | 5 |
| Q5. Write a note on Total Parental Nutrition (TPN). | 6 |



Chapter 5

Compounding In Hospital

IMPORTANT Questions

Q1. Describe the Compounding in Hospital.

Ans.

Compounding In Hospital

- Compounding is a process of combining , mixing or altering in drug ingredients for developing a drug to fulfill the specific need of a patient . It is done when no approved drug is appropriate for patient .
- Compounding is typically done under the supervision of a licensed pharmacist and must adhere to strict guidelines to ensure the safety and effectiveness of the compounded medications.
- Due to the compounding, we make the suitable doses and formulation according to the patient/disease conditions.
- Now a days, compounding is very easy because many combinations drugs are already present in the market.

Ideal requirement for the compounding

- Compounding platform.
- Lab coat and gloves.
- Sterile equipment's like mortar and pestle.
- Sterile container and closers.
- Packing material etc

Objectives

- To convert solid form to liquid.
- to avoid an allergic ingredient like coloured dyes.
- To provide an exact dose that is not available in market.
- To mask an unpleasant taste.
- Two minimize multiple dosing.

Q2. Write a note on Bulk Compound.

Ans.

Bulk Compound

- When any drug compounded in bulk (big amount) it is called bulk compounding it is required when same medication are prescribed more and more in a specific are.
- Involves the preparation of large quantities of a medication for use in the hospital.
- This can include creating new formulations of medications, adjusting the strength of medications, or combining multiple medications into a single dose.

Control Systems In Compounding

- **Compounding process control** : During compounding the standard process should be applied to obtain good strength , quality and purity of drug .
- **Quality control** : It is a process to check the quality , purity or strength of a developed product .
- **Budgetary control** : The budget of hospital should also be considered during making a program for bulk compounding .

Requirements for bulk compounding in hospital

- ❖ **Manufacturing facilities** : The place where drug are being compound should be clean at high degree . it should be smooth construction specially walls and floor which are easy to clean .
- ❖ **Raw Materials** : After deciding the drug to be compounded , its raw materials should be bought of good quality and in sufficient quantity .
- ❖ **Equipments** : The equipments are required for specific drugs should be available .
- ❖ **Staff** : there should be enough staff according to workload

Q3. Explain the IV Admixture Services.

Ans.

IV Admixture Services

- IV admixture is the combination of one or more sterile products added to an IV fluid for administration.
- It is also defined as a pharmaceutical mixture of two or more drugs into a large bag or bottle of IV fluid.

Preparation of IV Admixture

- 1) The admixture should be prepared according to the directions of physician .
- 2) According to the physicians order a label should be prepared including
 - Name and address of patient and location
 - Name of physician .
 - Name of drug with quantities.
 - Date of compounding and expiry date
 - Name of pharmacist who prepared Admixture .
- 3) The admixture should be prepared under laminar flow hood / cabinet using sterile needles and syringe .
- 4) After adding the drugs the solution should be mixed properly .
- 5) Before using the admixture solution , it should be checked carefully to satisfy that there is no incompatibility
- 6) Before dispensing the final admixture preparation to use ,the pharmacist should inspect the label and calculation etc .

Advantages of IV Admixtures

- ✓ IV admixtures extend the expiration period.
- ✓ Their preparation process is time saving.
- ✓ They provide large amount of nutritive fluids (glucose and electrolytes) and nutrients to the body.
- ✓ They have a quick onset of action.
- ✓ They can be administered to patients who are vomiting and are unconscious.
- ✓ They provide effective, safe and high quality of patient care.

Disadvantages IV Admixtures

- ▲ IV admixtures have a high risk of incompatibility.
- ▲ They need skill and time.
- ▲ They need aseptic area, special storage equipment. like refrigerator.
- ▲ They need trained pharmacists.
- ▲ They have a risk of bacterial contamination.
- ▲ They have a higher risk for adverse reactions.

Q4. Describe the Incompatibility of IV Admixture.

Ans.

Incompatibility of IV Admixture

- Incompatibility is an unwanted reaction that occurs between the drug to drug , fluid or containers . and unable to show required effect. like :
- Synergism (increase in drug efficiency)
 - Antagonism
 - New effects like toxic effect.

Types of Incompatibility of IV Admixture

- Physical Incompatibility
- Chemical Incompatibility
- Therapeutic Incompatibility
- ❖ **Physical incompatibility** : When visible changes occurs after mixing two or more drugs , it is called physical incompatibility for example change in colour , formation of precipitate etc
- ❖ **Chemical incompatibility** : When chemical degradation occurs after mixing true or more products , it is called chemical incompatibility e. g. oxidation ,reduction ,decomposition ,complexation .
- ❖ **Therapeutic Incompatibility** : When drugs are administered and show unwanted effect like antagonism ,synergistic or toxic effect , it is called therapeutic incompatibility

Preventing Incompatibility of IV Admixture

- ▲ Preparing admixture under strict indications of Physician.
- ▲ Separating the drug dose by time and place and by rinsing the IV setup / system with a natural solution
- ▲ Proper mixing of drugs added in IV fluid.
- ▲ Reducing the number of drugs in a single IV bag.
- ▲ Avoiding the administration of Admixture just after the mixing.
- ▲ Observing the running of IV fluid to detect the physical change.

Role of Pharmacist in IV admixture Administration

- ✓ Pharmacist should provide proper supervision during preparation of IV admixture
- ✓ He should provide proper guidance for staff to avoid incompatibility.
- ✓ He should use latest research information to avoid incompatibility.
- ✓ He should use colour coding to avoid incompatibility
- ✓ He should provide labelling on bags

Q5. Write a note on Total Parental Nutrition (TPN).

Ans.

Total Parental Nutrition (TPN)

- A method of providing nutrients to a patient through intravenous means, rather than through the gastrointestinal tract
- This method is used when someone unable to take nutrients orally . or in an emergency condition .
- Examples of patients who may receive TPN include critically ill patients, burn victims, or patients recovering from surgery.
- Total parenteral nutrition (TPN) is a method of delivering nutrients directly into the bloodstream via a vein. It is used when a patient is unable to consume food or absorb nutrients through the gastrointestinal tract due to a medical condition or surgical procedure. TPN solutions are typically made up of a combination of glucose, amino acids, lipids, vitamins, and minerals.

Types of TPN

- **Central Parental Nutrition (CPN)** : In this method fluids are delivered through a central vein ., Mainly through the superior vena cava , It is present beneath the collarbone and directly goes to the heart .
- **Peripheral Parental Nutrition (PPN)** : In this method fluids are delivered through a smaller vein .

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