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Subject Area : Nursing**IV ADMIXTURES**

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INTRODUCTION

Mixing medications means creating a clean solution that combines two or more drugs with an IV solution. Hospitals often do this to help patients get the treatment they need. When making these mixtures, nurses or pharmacists add one or more medicines to larger bags of IV fluids. Aseptic methods are used to keep it safe while mixing.

Definition

IV admixtures are mixtures of sterile medications added to IV fluids. They help deliver medicine directly into the bloodstream.

TYPES OF IV ADMIXTURES

There are three types of IV admixtures:

1. Infusions
2. Intermittent
3. Pre-mixed IV admixtures

INFUSIONS

- These are given continuously.
- They are often more effective and less toxic than intermittent doses.
- They provide basic fluid and electrolyte therapy.

INTERMITTENT

- These are given periodically.
- They help increase how well the medication works and lower the chance of side effects.

PRE-MIXED ADMIXTURE

- These are made with specific additives.
- They come in many sizes.

EXAMPLE

- Lidocaine
- Potassium
- Nitroglycerin

Forms of Intravenous Admixtures

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There are two main types:

- A) **Large Volume Parenterals:** Usually 500-1000 ml, used for hydration or ongoing meds.
- B) **Small Volume Parenterals:** Mini bags with diluents, easy to prepare, affordable, and can customize doses.

How to Prepare IV Admixtures**1. Understand the Order**

When a pharmacist gets an order, they check the dosage. They look for any issues with the medicine or patient health. If they have questions, they call the doctor and inform the nurse. They also check for allergies, write down the patient's name and room, and record details of the medicines used. The intern or technician who mixes the solution notes the time and signs off on it.

2. Label Preparation

All IV admixtures get labeled properly. Labels are printed for a full day's use and attached to the IV Profile Card. These labels include:

- Patient name
- Patient room number
- Amount of medicine added
- Primary IV solution
- Expiration date and time
- Name of the person who prepared it
- Preparation time and date

All labels are double-checked against the IV Profile Card before moving to the next step.

3. Assembly and Preparation

The medication order and IV Profile Card go together with the needed supplies on a tray. Everything is set up before starting, so nothing is missed. The tray goes into a special hood for clean preparation. Only one admixture is made at a time. Care is taken in how drugs are added to avoid mistakes. Some ingredients need specific handling, like protection from light, or specific mixing instructions.

4. Aseptic Technique

Every IV admixture is prepared in a clean area using safe methods. This reduces the risk of contamination. Wrappers around drugs and tools must be removed before they touch the hood surface. The work area is wiped down with alcohol from

back to front.

5. Labeling and Checking

After preparing the admixture, the label is stamped with the expiration date and placed on the IV bottle. Usually, a 24-hour expiry is marked. For drugs that need to be mixed right before use, the powdered form is kept separate. A registered pharmacist checks everything:

- Matches the original order with the label for accuracy.
- Double-checks the additives used and the amounts.
- Looks for any particles that might mean contamination. Once approved, the pharmacist marks the IV Profile Card.

Incompatibility in IV Admixture

Incompatibility can happen with drugs and solutions or with the containers used.

Types include:

1. **Physical Incompatibility:** This can change the color, create gas, or cause precipitation.
2. **Therapeutic Incompatibility:** Certain drugs can work against each other, like metoclopramide and hyoscine; they shouldn't be mixed.
3. **Container Incompatibility:** Some drugs, like nitroglycerin, shouldn't go into plastic containers since they might absorb into the container.
4. **Chemical Incompatibility:** This leads to drug breakdowns, often shown by cloudiness or color change.

To avoid incompatibility, mix as few drugs as possible, prepare fresh mixtures, use waterproof containers, and keep them away from light.

pH Consideration

pH affects how well the drugs dissolve and how stable they are. This is important in IV admixtures because the ingredients can have different pH levels. If the pH isn't right:

1. Drugs can fall out of solution.
2. Drugs can degrade faster, reducing their effectiveness.

Advantages of IV Admixtures

1. Longer expiration dates
2. Saves time
3. Provides nutrition (like glucose and electrolytes)
4. Quick effects
5. Delivers a lot of nutrients
6. Good for patients who can't take oral meds
7. Ensures safe patient care
8. Ideal for drugs that don't absorb well orally
9. Precise reconstitution of medicines

Disadvantages of IV Admixtures

1. Higher risk of incompatibility
2. Needs skilled preparation
3. Requires a clean area and special storage
4. Needs trained pharmacists
5. Risk of bacterial contamination

ROLE OF A NURSE

Nurses play a key role in mixing medications. It's important to make sure that drugs are given safely and accurately. They often team up with pharmacists, especially in critical care or oncology.

Key Responsibilities of Nurses in Medication Admixture

1. Understanding Drug Information:

- Know the medications being mixed.
- Check dosages, compatibility, and stability.
- Use drug manuals or ask pharmacists for help.

2. Maintaining Aseptic Technique:

- Prepare medications in a clean space to avoid contamination.
- Use gloves and sterile equipment.

3. Verifying Orders:

- Double-check everything in the physician's order for accuracy.
- Make sure medications are compatible.

4. Preparation and Calculation:

- Calculate dosages and infusion rates correctly.
- Mix drugs with the right solution.

5. Monitoring for Compatibility:

- Watch for any signs that medications don't mix well, like changes in color or cloudiness.

6. Labeling

- Clearly label each mixture with the patient's name, medication details, and time.

7. Documentation

- Write down what was prepared and when in the patient's record.

8. Administering the Medication:

- Give the medication through the right route and monitor for any reactions.

9. Patient Education

- Inform patients about the medication and any possible side effects.

10. Collaboration

- Work with the pharmacy to clear up any questions about medications.

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