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Pharmacy Technician's Letter
Hospital

Shine a Light on IV Electrolyte Safety

A recent recall of mislabeled commercial IV potassium chloride bags is sparking discussion about **best practices for IV electrolyte safety**.

Hospitalized patients commonly receive electrolyte IV piggybacks to correct low levels caused by meds, health conditions, etc.

But some IV electrolytes...such as phosphate, potassium, and magnesium...are high-risk meds that can cause harm if used incorrectly.

Review strategies to optimize electrolyte piggyback safety.

Differentiate salt forms. Calcium comes in gluconate and chloride formulations...and their dosing generally has a 3-fold difference.

On the other hand, phosphate comes in sodium or potassium salts...and dosing is the same based on mmol of phosphate.

Look closely at salt forms and strengths on vials when prepping IV meds...and confirm using barcode-scanning technology, if available.

Store undiluted vials in the pharmacy. Most electrolytes require dilution before admin. For example, undiluted IV potassium or phosphate can be deadly.

Be aware of magnesium and calcium vials as exceptions. They can be stocked in crash carts to use during cardiac emergencies...and magnesium is used intramuscularly in obstetric units to stop specific seizures.

Implement safeguards for these exceptions...locked-lidded dispensing cabinet bins, warning labels, etc...to prevent incorrect use.

Use premix bags to reduce errors. Making IV piggybacks from scratch increases the risk for compounding errors.

Premix bags are marketed for calcium gluconate...potassium phosphate...potassium chloride...and magnesium sulfate.

Double-check bag concentrations. Some doses come in multiple dilutions...such as 2 gram calcium gluconate bags in 50 or 100 mL.

Simplify prepping pediatric weight-based doses by drawing them up from premix bags if allowed.

Watch infusion rates. Electrolyte piggybacks generally need to infuse over at least 30 to 60 minutes to prevent adverse effects (vein irritation, irregular heartbeat, etc).

Alert your pharmacist ASAP if electrolyte labels don't state the infusion time. And apply "Not for IV push" stickers to pediatric electrolyte syringes to prevent accidental rapid infusions.

Be aware of IV access restrictions. Outside of emergencies, high potassium concentrations (20 mEq/100 mL, etc) and undiluted calcium chloride require a central line...due to hyperosmolarity and vein damage.

Advocate for warnings...such as "For central lines only"...on order labels to alert nurses about potential mix-ups.

Key References:

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