

AN ORGANISATIONAL APPROACH TO IMPROVE THE SAFETY OF INTRAVENOUS POTASSIUM CHLORIDE REPLACEMENT: DATA FROM A TERTIARY CARE HOSPITAL

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Potassium Chloride Concentrate for injection is listed as a high-alert medication by the Institute of Safe Medication Practices.

PURPOSE

- ⇒ To standardize the ordering and administration of intravenous Potassium Chloride (KCL) across a tertiary care hospital.
- ⇒ To limit access to KCL concentrate for injection across hospital wards.

METHODS

Phases of The Project:

Screening phase:

September 2015 - January 2016

Intervention phase:

Introduction of intravenous KCL pre-mixed bags to the hospital formulary in January 2017

Evaluation phase post-implementation:

February - April 2017

Target population

Adult patients prescribed intravenous KCL in the Internal Medicine, Intensive Care and Geriatrics units.

Data collection:

- Data collection form;
- Focus-group discussions (different medical teams).

Descriptive statistics were used to report the different findings.

RESULTS

Screening Phase

249 orders of intravenous KCL were examined:

- ⇒ 23 different dilutions of KCL orders were administered.
- ⇒ 7.3% of the patients were administered higher than the recommended dose for their potassium level.
- ⇒ Infusion rates of 15mEq/hour of intravenous KCL were administered without central catheter and cardiac monitor.

Intervention Phase

Starting January 2017
Premixed KCl Bags to replace available Ampoules



For proper administration refer to Protocol MEA.CP002

Pharmacy Department

Evaluation Post Implementation

- ⇒ The variations in the dilutions decreased noticeably.
- ⇒ There is a need for different premixed dilutions to serve specific populations: patients with hypernatremia and volume restriction, and patients with diabetic ketoacidosis (DKA).
- ⇒ There is a potential need to keep KCL concentrates for injection in some clinical wards such as dialysis units.

DISCUSSION

- ⇒ Add other dilutions to account for the treatment of patients with hypernatremia, concomitant hypernatremia and hyperglycemia; and patients with DKA:
 - * Dextrose Water 5% (D5W) as diluent with different concentrations of KCL;
 - * Sodium Chloride (NaCl) 0.45% as diluent.
- ⇒ Choice of dilutions to be added can be sought using “Qualitative methods”:
 - **Focus group discussion**
 - * 6–10 respondents (Dialysis team, Cardiologist)
 - **In-depth interview** with a prescriber.

CONCLUSION

- ⇒ Healthcare institutions are entrusted to provide special safeguards to reduce the risk of errors.
- ⇒ Develop a standard intravenous KCL protocol for the institution:
 - Standardize ordering, preparation, and administration;
 - Central line and cardiac monitor needed for rates > 10mEq/hour.

Reference: Institute of Safe Medication Practices 2014. List of High Alert Medications in Acute Care Settings. Available at: <https://www.ismp.org/tools/highalertmedications.pdf>. Accessed on 5/1/2018.