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).

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

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.

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.