An Audit of Intravenous Fluid Therapy – compliance with NICE guideline

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Background

The practice of prescribing IV fluids in hospitals is invariably left to the most junior doctors, who often lack the experience and knowledge needed to prescribe appropriately. It is reported that only 16 % of surgical consultants feel that junior doctors are appropriately educated in regard to IV fluid prescribing.

It has been observed that IV fluid prescription documentation is often poorly performed. Poor documentation limits the information available to subsequent clinicians, who may be asked to review fluid prescriptions. A number of studies and reviews have reported ongoing issues with IV fluid prescribing in inpatient settings; over prescribing of fluids is reported in 17-54% of hospital inpatients, leading to harm in around 50% of these cases.

NCEPOD has recommended that the practice of IV fluid prescribing should be held in the same regard to that of any drug. The National Institute of Health and Care Excellence (NICE) have tried to address these issues with the publication of national guidance on IV fluids prescribing in December 2013 - 'Intravenous fluid therapy in adults in hospital (CG174)'.

Objective

The objective of this audit is to ensure that intravenous fluid therapy in our medical and surgical patients are prescribed as recommended in the NICE guideline CG174 'Intravenous Fluid Therapy in Adults in Hospital'.

Methods

We randomly selected 40 adult inpatients (20 medical and 20 surgical) who were on intravenous fluid therapy for atleast 24 hours.

Medical and nursing notes and prescription charts from their current admission were assessed as to their compliance with the audit standards. We excluded patients in Intensive Care and A & E, any postoperative patient, diabetic patients, pregnant or postpartum women, patients with electrolyte abnormalities and also patients on fluid restriction.

Results

The patient's fluid and electrolyte needs are assessed as part of every ward review

Information which is included in the intravenous fluid prescription

	Medical wards	Surgical wards
Type of fluid	20	20
Rate of fluid	20	20
Volume of fluid	20	20

Patients have an IV fluid management plan

The IV fluid management plan includes

For patients in need of fluid resuscitation

Patients who have received initial fluid resuscitation are reassessed using the ABCDE approach

Patients who have already been given >2000 ml of crystalloids and still need fluid resuscitation after reassessment receive expert help

Patients who are showing signs of shock but do not need fluid resuscitation after reassessment receive expert help

	Medical wards	Surgical wards
Yes	2	0
Not recorded	0	0
Not applicable	18	20

If patients need IV fluids for routine maintenance alone, the initial prescription is restricted to,

Discussion

The results highlight poor compliance with NICE guidelines for IV fluid therapy in our hospital. The findings of the audit also focus on a requirement for a more formal review of IV fluid therapy within the trust. We made few recommendations which included

- Introduce some teaching sessions
- Place IV fluid related posters in wards
- Design a separate IV fluid chart.
- Introduce 0.18 % NaCl and 4 % Glucose solution as maintenance fluid
- Use IV fluid pumps

Based on these recommendations, we made a task group consisting of doctors and nurses from different specialities and finally developed a new IV fluid policy. This policy was successfully implemented in the hospital and we planned to re-audit our IV fluid prescription in hospital wards.

References

- Powell Ag et al. Knowledge and confidence in prescribing IV fluids is a national problem in FY1 doctors. Ann R Coll Surg Engl 2013.
- Lobo DN et al. Peri-operative fluid and electrolyte management: a survey of consultant surgeons in the UK. Ann R Coll Surg Engl 2002.
- National Institute of Health and Care Excellence (NICE). Intravenous Fluid Therapy in Adults in Hospital (CG174). 2013. www.nice.org.uk/CG174