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Prescription of Maintenance Fluids in the Emergency Department

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Abstract : The prescription of intravenous fluids is a fundamental component of inpatient management, but it is one which usually lacks thought. Fluids are a drug, which like any other can cause harm when prescribed inappropriately or wrongly. However, it is well recognised that it is poorly done, especially in the acute portals. The National Institute for Health and Care Excellence (NICE) recommends 1mmol/kg of potassium, sodium, and chloride per day. With various options of fluids, clinicians tend to face difficulty in choosing the most appropriate maintenance fluid, and there is a reluctance to prescribe potassium as part of an intravenous maintenance fluid regime. The aim was to prospectively audit the prescription of the first bag of intravenous maintenance fluids, the use of urea and electrolytes results to guide the choice of fluid and the use of fluid prescription charts, in a busy emergency department of a major trauma centre in Stoke-on-Trent, United Kingdom. This was undertaken over a week in early November 2016. Of those prescribed maintenance fluid only 8.9% were prescribed a fluid which was most appropriate for their daily electrolyte requirements. This audit has helped to highlight further the issues that are faced in busy Emergency Departments within hospitals that are stretched and lack capacity for prompt transfer to a ward. It has supported the findings of NICE, that emergency admission portals such as Emergency Departments poorly prescribed intravenous fluid therapy. The findings have enabled simple steps to be taken to educate clinicians about their fluid of choice. This has included: posters to remind clinicians to consider the urea and electrolyte values before prescription, suggesting the inclusion of a suggested intravenous fluid of choice in the prescription chart of the trust and the inclusion of a session within the introduction programme revising intravenous fluid therapy and daily electrolyte requirements. Moving forward, once the interventions have been implemented then, the data will be reaudited in six months to note any improvement in maintenance fluid choice. Alongside this, an audit of the rate of intravenous maintenance fluid therapy would be proposed to further increase patient safety by avoiding unintentional fluid overload which may cause unnecessary harm to patients within the hospital. In conclusion, prescription of maintenance fluid therapy was poor within the Emergency Department, and there is a great deal of opportunity for improvement. Therefore, the measures listed above will be implemented and the data reaudited.

Keywords : chloride, electrolyte, emergency department, emergency medicine, fluid, fluid therapy, intravenous, maintenance, major trauma, potassium, sodium, trauma
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