The Faculty of Intensive Care Medicine

Safety Bulletin

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Introduction

Through a data sharing agreement, the Faculty of Intensive Care Medicine can access a record of incidents reported to the National Reporting and Learning System (NRLS). Available information is limited and from a single source; all that we know about these incidents is presented in this report. The *Safety Bulletin* aims to highlight incidents that are rare or important, and those where the risk is perhaps something we just accept in our usual practice. It is hoped that the reader will approach these incidents by asking whether they could occur in their own practice or on their unit. If so, is there anything that can be done to reduce the risk?

Cases 1 and 2 | The wrong drug

An infusion pump containing remifentanil began alarming as the syringe was empty. The nurse was about to replace it when the patient started waking and reaching for the endotracheal tube. Whilst reassuring the patient, the nurse replaced the syringe. The patient became increasingly agitated and hypertensive. At this point a colleague noticed the remifentanil syringe had been replaced with a syringe of noradrenaline.

A bedside nurse had prepared medications that were due at 0600, just before the patient developed hypoxaemia and fast AF with haemodynamic instability. Whilst busy with many competing demands, a bolus of 50ml Actrapid was given instead of Meropenem.

Comment

Both incidents occurred towards the end of nightshifts, and when the nurses were distracted. Our safety measures need to be able to withstand such a difficult clinical environment. Double person checking of all medications at all stages of preparation and administration is unfortunately not a practical solution. The use of highly identifiable labelling and, where possible, pre-filled syringes are probably the highest impact interventions to help prevent errors like this.

Case 3 | Steroid omission

A patient had been receiving a course of steroids for inflammatory bowel disease. After admission to intensive care with a diagnosis of sepsis, the oral prednisolone was converted to hydrocortisone and the dose increased.

Once the vasopressors were able to be discontinued the steroids were stopped, on the false presumption they had been given as a short course for sepsis. Over the following few days, the patient developed postural hypotension and electrolyte derangement in keeping with an Addisonian syndrome.

Comment

A Patient Safety Alert issued in 2020 highlighted the risk of stopping steroids in patients who are steroid dependant, and of not increasing the dose in acute illness. Admission to intensive care introduces a further risk, as steroids can also be given as an acute therapy. The indication for the steroid prescription can therefore be misinterpreted, as in this case. When steroids are prescribed, is there a mechanism in your unit to identify at what point they can be stopped (including if a taper is required), and what the indication for the prescription was?

Useful information related to steroid dependency can be found in the Clinical Medicine journal and guidance endorsed by the Society of Endocrinology.

Case 4 | A call for help

A patient in a single room pulled the VAC dressing from his abdominal wound. The nurse pulled the emergency buzzer but it did not work. They pulled it again and it "came off in their hand".

Comment

How often do you check the emergency call buttons in your clinical areas? In isolated areas, is there a way of calling for help if you are unable to reach the emergency buzzer?

Case 5 | A programming error

A milrinone infusion was found to be running at 16x the planned rate. The pump had been programmed mg/kg/hr instead of mcg/kg/min.

Comment

Reading this case vignette highlights the issue – did you have to read it twice to compare the units? One of the reasons for this is the saccade eye movements we make when we read. The eye skips from point to point, meaning letters (and in this case units) can be lost, particularly when there is the the cognitive bias of seeing what we expect to see. Did you notice the typo in the previous sentence?

Using infusion devices with programmable drug libraries and protocols can help prevent this error by alerting the user to an infusion rate outwith programmed limits, or by preventing the infusion from running when limits are breached.

Cases 6 and 7 | Inner cannulas

A patient with a tracheostomy for weaning was breathing spontaneously, the cuff was down. When attempting to suction, the nurse was unable to pass the suction catheter. It was noted that there had been no inner cannula in place for the preceding 24 hours.

A patient had a tracheostomy placed as part of their major head and neck surgery (pharyngolaryngectomy with free flap). On the first postoperative day, the physiotherapist attending the patient noticed that the inner tube was missing from the tracheostomy. They were advised it was intentionally absent, as there had been difficulty in inserting it. There was some difficulty passing a suction catheter as well. On passing a bronchoscope into the tracheostomy, a partially occlusive clot was found. The tracheostomy was exchanged.

Comment

The use of an inner cannula is recommended by NCEPOD in their 2014 report 'Tracheostomy care -On the right trach?' The guidance for tracheostomy care recommends the use of an inner cannula, especially for relatively stable patients (e.g. those requiring <50% oxygen). The NTSP also recommends that an inner cannula should be removed and inspected once every eight hours or if the patient shows any signs of respiratory distress. Do all the tracheostomies used on your unit have a removable inner canula?

Cases 8 and 9 | Propofol Related Infusion Syndrome (PRIS)

After sustaining a traumatic brain injury, a patient was sedated, with active ICP management. They received a 400mg/hr propofol infusion (2%) for a prolonged period. They were noted to have a raised lactate, AKI, deranged LFTs and an increasing vasopressor requirement. PRIS was diagnosed.

A patient with a traumatic brain injury was sedated with propofol, midazolam and alfentanil. The patient received propofol 2% at a high rate for a prolonged period. An ECG showed a Brugada type pattern, which progressed to episodes of bradycardia followed by an asystolic cardiac arrest. They also had a raised lactate, acute kidney injury and a raised ALT. A review of the case suggested the likely diagnosis to be PRIS.

Comment

A review of PRIS can be found in the British Journal of Anaesthesia. The risk can be reduced by administering the lowest possible dose of propofol using a targeted sedation scoring system, and by using propofol sparing adjunct agents.

A high degree of clinical suspicion is required for any patient with an unexplained metabolic acidosis, ECG changes or rhabdomyolysis after receiving a propofol infusion, as this study suggests that the incidence of PRIS may be as high as 1.1%. Particular concern is warranted when propofol has been administered at a dose >4-5mg/kg/hr (lean body weight) for >48hrs.

Both cases followed administration of 2% rather than 1% propofol. This study showed that the dose of propofol given is not increased by the use of 2%, and this study showed that triglyceride levels are lower when the 2% formulation is used.

Case 10 | Communication issues

Regulation 28: Report to Prevent Future Deaths

A death occurred after the delayed diagnosis and treatment of soft tissue sepsis in a busy emergency department. Further details of the case are available in the Regulation 28 Report to Prevent Future Deaths. One of the concerns raised at inquest related to delayed review by intensive care after a 'just to let you know' call.

Comment

Miscommunication and misunderstanding are obvious areas of risk. 'Just to let you know' calls are particularly prone to error, as the desired outcome is often unclear. For example, the caller may believe they have made a referral/requested a review, but the receiver may believe that no such request has been made. The caller may also assume that if no review follows, this is because the receiver has deemed it unnecessary.

As the receiver of such a call, it would be prudent to ensure that you are fully aware of the situation being described, to specifically ask what outcome is being requested (and that you feel the requested outcome is sufficient), and finally that the call is documented. If there is any doubt, an in-person review should take place.

Case 11 | Going nowhere

During a patient transfer for a CT the lift 'got stuck'.

Comment

We don't have any more details of this incident, but a later coffee room anecdote can be a traumatic near miss at the time. If you are stuck in a lift the likelihood is that rescue will not be immediate, therefore it is worth checking before entering that you have all you need to be self-sufficient for a period of time (e.g. 30-60minutes).

Case 12 | Tracheal injury

A patient was intubated during resuscitation from a cardiac arrest with gross airway soiling. Subsequently, surgical emphysema was noticed with a CT showing a tracheal perforation. It was thought the rupture was most likely caused by a bougie at the time of intubation.

Comment

The bougie is an invaluable intubation aid, but has also been associated with tracheobronchial injuries, including in the RCoA NAP 4 audit 'Major Complications of Airway Management in the UK'. The report of this audit cautioned against the use of undue force when performing a blind insertion. They further recommended that

"Techniques that reduce the need for intubation involving blind placement of a bougie or introducer probably lessen the risk of trauma. Fibreoptic intubation and indirect laryngoscopy (e.g. videolaryngoscopes) may have a role", adding that further research is required.

This editorial further discusses some of the controversies associated with single use bougies.

FICM Safety Webinar - CONTRIBUTIONS NEEDED!

FICM want to share good practice for the benefit of the ICM community.

Have you implemented something in your unit that has made it safer for patients or improved outcomes? What does your unit do that other units should think about doing themselves?

It could be something small or large, but we are particularly interested in how you made the change and the difference it has made. Examples could include a change in process, a new way of working or a new approach to a problem.

The FICM are planning to host a Safety Webinar in early 2025 and would like to invite you to showcase your work with a five minute presentation. To register your interest please email the Faculty at contact@ficm.ac.uk

Join us for FICMEduction 2025: Hot Topics

Thursday 22 May | Online

The 2025 FICM Annual Meeting will focus on hot topics in ICM including:

- Assisted Dying
- Diagnosing Death using Neurological Criteria
- Frailty in Critical Care
- Running a Critical Care Unit
- Maternal Critical Care

Bookings now open. Book before 1 March to get early bird discount!

Get involved

We also invite you to submit anonymous summaries of incidents or near misses that have lessons that we can learn from. If you wish to do so, please get in touch via contact@ficm.ac.uk.