Introduction

For this edition of Nevermore we look at a Serious Incident which became a formal complaint regarding a kidney injury in a patient undergoing chemotherapy. We examine a system error in a case where a scope was re-used for a colonoscopy on two different patients, and also a failure in treatment leading to a patient’s death.

Additionally, we introduce you to the NHS Improvement report, which is a response to all nationally reported incidents. Often, when frontline staff report an incident they do not receive feedback or response about how the information is used nationally to improve practice and share learning. This report, which we welcome, details the National Reporting and Learning Service’s actions in response to incident reports submitted to them, with an online link to the report for further reading.

Regards,

Lisa Pinkney
Patient Safety Manager
Summary

A patient was undergoing R-DHAP treatment, which is chemotherapy used in non-Hodgkin lymphoma (NHL). The treatment was complicated by acute kidney injury, which may have been exacerbated by an error with the fluid regimen where the Cisplatin had been running for approximately 20 hours without additional IV fluid. The patient had a raised Creatinine level of 203 at its peak.

The patient started Cisplatin chemotherapy which was signed for by Staff Nurses A and B. Pre-hydration fluids had been given appropriately prior to the Cisplatin. Rasburicase was prescribed and given to prevent tumour lysis syndrome (another reason for kidney failure).

Overnight
Patient X was handed over to Staff Nurse C who was advised that the chemotherapy was all up and running. Staff Nurse C did not recheck the chemotherapy chart, as rechecking was not part of usual practice when chemotherapy was already running.

04.30
Staff Nurse C noted that Cisplatin was in progress.

Approx. 10.00
Consultant 1 reviewed the patient on the Ward Round and noticed that only one bag of fluids was running. On further enquiry it became clear that 20 hours had elapsed since the start of the Cisplatin, without a second concurrent bag of fluids running. Consultant 1 explained the mistake to the patient, apologised and advised that fluids would be started at an increased rate. Strict fluid in/output and repeat kidney function measurements were requested.

The chemotherapy chart stated that Potassium fluid was increased to 4 hourly, and Magnesium to 6 hourly infusion. These were given at 11:45 and 16:00. The instruction to run both fluids alongside Cisplatin was highlighted in green – the investigation was unable to verify when this was done.

The rest of the chemotherapy was administered, IV fluids continued.

19:45
The following day Staff Nurse B noted a rise in the patient’s Creatinine level (120 -124). Consultant 2 documented good urine output, slightly increased Creatinine and appropriate management plan. The Ward Sister apologised to the patient’s wife who was concerned about the rising Creatinine level. She explained the changes to the management plan. She documented that Consultant 1 had highlighted the error.

Two days later, Consultant 1 met the patient and wife again, and explained that the overall symptoms were very likely due to the chemotherapy and not due to mild kidney dysfunction. Consultant 1 explained that while the delay in fluids may have contributed to kidney damage, this may have happened anyway as this is a known side effect of Cisplatin.
The patient’s wife was worried about the patient’s fitness for further chemotherapy. Consultant 1 explained that the patient needed further kidney assessment. A kidney ultrasound was requested to exclude an alternative cause for kidney damage.

The patient’s kidney function was deteriorating further despite best supportive care at this stage. Consultant 1 documented that the drug chart was to be reviewed again to ensure no alternative drugs were prescribed that could damage the kidneys.

Creatinine levels slowly improved with some fluctuation. The patient continued with IV fluids and electrolyte replacement. Regular haematology and renal (kidney) reviews took place. The patient was very tired but otherwise well.

One day later the patient was reviewed by Consultant 1, and was discharged home as had improved overall.

**Investigation Findings**

- There was an error in the patient’s fluids where they had the Cisplatin running for approximately 20 hours without any additional IV rescue fluid.
- The patient did acquire an acute kidney injury (Nephrotoxicity) but it cannot be confirmed that this was as a result of the lack of fluids. Nephrotoxicity (kidney injury) is a frequent and well recognised side effect of the drug Cisplatin even with the correct fluid regimen.
- During the patient’s recovery stage Staff Nurse B documented in the notes that IV fluids ran out in the early hours of the morning, as the junior doctor had not prescribed enough. At the Multi-Consultant Ward Round the junior doctors were reminded to ensure that prescribed IV fluids last throughout the night. This is not strictly speaking part of the investigation but a concern raised by the wife.
- Staff did follow the relevant procedure, however the instruction to give the fluids was not next to the prescription for Cisplatin on the drug chart. This was missed when the nurses read the chart. Had this been written next to the prescription for the Cisplatin the error may not have occurred.
- The Ward was very busy, necessitating a bed move for the patient. This caused distraction of the nursing staff around the same time as the patient’s chemotherapy administration. It also meant that the patient changed nursing teams midway through that day.
- There were many unwell patients on the Ward; five newly diagnosed Acute Myeloid Leukaemia patients undergoing intense treatment which led to high levels of acuity.
- The Drug Chart was reviewed as part of the investigation and it was confirmed there were no obvious nephrotoxic drugs prescribed at the time of admission.

**Recommendations made as a result of this SI are the following**
Drug Chart to be rewritten to make it clear when fluids are to be given alongside Chemotherapy drugs.

Additional training for Chemotherapy nurses in the administration of Chemotherapy drugs and fluid regimens.

Consideration of a Ward Chemotherapy nurse of the day.

Chemotherapy charts to be included in the nursing handover.

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**Case Study 2**

*Summary*

A patient (Patient 2) underwent a colonoscopy with a colonoscope that had not been through the high level decontamination process. The scope had been given the initial clean and flush post procedure by a member of nursing staff following a lengthy procedure on Patient 1 but a “red” tray cover was not placed over the contaminated scope. The same colonoscope was then mistaken for a clean colonoscope and used on Patient 2.

A complicated colonoscopy was completed on Patient 1.

Nurse A noticed a fault on the printer after the patient had left. She asked for assistance from Sister B who came to check the printer, and tried to connect another printer but unfortunately the photographs were lost. Nurse A then wiped clean the scope, flushed it with enzyme solution and air before disconnecting the scope.

Nurse A placed the scope back in the tray but did not cover the tray with the red “contaminated” cover as detailed in the SOP. Nurse C was then relieved for lunch but before she went she asked Nurse A to check the specimens with her, as this is a two person check as documented in the Labelling and Handling of Specimens SOP. Nurse A then left the room to check the specimens.

HCA D brought a new printer in the room and connected it. Nurse A came back into the room and assumed the scope in the tray was the new scope for Patient 2 and connected it ready for use. Nurse A then looked for the green “clean” cover to get the colour coded barcode to scan the scope to the patient on the computer system but could not find it.

*Investigation Findings*

- Nurse A cleaned and flushed the scope used on Patient 1 and placed it into the tray without placing a “red” tray cover on it to identify it had been used as noted in the SOP.

- Nurse C was asked to go for lunch and a member of staff was sent in to cover her. Before she went for lunch she needed to check Patient 1’s specimens with Nurse A. Nurse A left the scope and went to check all the specimens.
**Recommendations following investigation**

- Update the SOP detailing the correct process for scanning scopes and assigning them to patients.
- Addition to be added to the Endoscopy Care Plan to identify the scope has been scanned to the correct patient.
- Undertake a safety brief or pre-op stop prior to each patient and a signing-out check list to be introduced after all scope procedures.
- Increase accessibility to IT system. Ideally two computers per room. In line with practice in the operating theatres resulting in reduced time pressures.
- Audit of new and revised procedures.

### Summary

A patient was admitted to the Acute Medical Unit with confusion and generally unwell, and was diagnosed with sepsis, secondary to endocarditis. Co-morbidities included Intravenous Drug use, Hepatitis C and Mitral valve replacement for previous Endocarditis, and Warfarin. Four days later, the patient was found on the floor by the bedside, agitated with a reduced conscious level. A CT scan demonstrated a large intracranial haemorrhage. The patient died as result.

The patient was first admitted to the Acute Medical Unit with a two day history of reduced oral intake, generally unwell, and possible vomiting and diarrhoea. Limited history was available from the patient as they were drowsy and confused, but appeared to be in pain. There was a past medical history of Intravenous Drug use, Hepatitis C, Mitral valve replacement and Pulmonary Embolism, and the patient was on Warfarin. They were treated with oxygen, IV antibiotics and IV fluids for a presumed chest infection. CT head was requested in view of the patient’s drowsiness, which showed changes in the frontal lobe, possibly chronic.

The patient was reviewed by Doctor A, to arrange a central line as the cannula had stopped working. Discussion took place with Anaesthetics, who advised to book the patient in for this procedure. Further discussion took place between Doctor C and Anaesthetics.
The patient’s INR was high (2.9), and was advised for cannula via ultrasound on ward, and for a central line later if still needed. Staff Nurse 2 noted that a new cannula was inserted into foot. The patient was drowsy and slept most of the afternoon. Staph aureus was grown from blood cultures, and antibiotics were changed to cover suspected endocarditis.

A day later, further difficulties with IV access led to antibiotics not being given. The doctor was informed and cannulas were attempted several times but failed. The anaesthetist was then contacted to insert the cannula.

The following day, Staff Nurse 2 spoke to the doctor on call regarding the cannula, and was advised to wait for the anaesthetist due to difficulties in getting access.

The patient was then reviewed by Consultant B, who noted difficulty with IV access, and the patient did not receive IV antibiotics over the weekend (36 hours of doses missed). The central line request was discussed with a consultant anaesthetist, and the patient was booked for central line in theatre.

The patient had originally been booked for central line access in theatre on the day of admission, but it was delayed due to the patient’s high INR.

At 13:00, the IV cannula was inserted, and antibiotics were given. The INR was greater than 10, therefore vitamin K was given.

At 17:30 the observations were stable, but the patient appeared drowsy.

During that night, at 03:45 a noise was heard in the patient’s room and the patient was found on floor at the side of the bed, with their head on a pillow. The patient was agitated, drowsy, with conscious level reduced. The patient stated that they had been trying to get to the toilet. They were reviewed by Doctor B, and no obvious external head injury was found. CT head was done, which showed large left intraparenchymal haemorrhage. This was discussed with the neurosurgeons, but no neurosurgical intervention could be offered. A discussion with Consultant A took place, for palliative care.

The patient died at 08:45am.

Investigation findings

- On admission, the patient was drowsy and confused. A CT head scan at time of admission showed frontal lobe changes: the report describes that it is unclear whether these were new or old. There was no evidence of haemorrhage on the first CT scan.

- The patient was nursed in a side room due to a history of diarrhoea and vomiting.

- The patient was admitted with suspected sepsis: appropriate treatment was prescribed, but not given as prescribed due to difficulties with IV access in a patient with deranged clotting (INR greater than 10) and low platelets. The abnormal clotting delayed the requested central IV access.

- The patient’s mental status fluctuated throughout the course of the admission,
sometimes being described as alert, and sometimes as drowsy, confused or agitated.

- The patient’s falls risk was assessed as ‘high’. Bed rails were put in place, but the patient asked for these to be left down so that they could walk to the toilet independently. Staff Nurse 1 described the patient as being steady on their feet, and therefore felt this was appropriate.

- Following discussion with the Coroner, a death certificate was issued citing intracerebral bleed as the cause of death, with warfarin therapy for metallic heart valve and Septicaemia contributing to the death.

- It is unclear whether the patient fell out of bed, as they were not observed at the time of the fall. The intracranial bleed cannot be directly attributed to the fall: the patient’s level of consciousness was reduced immediately, suggesting the intracranial bleed may have occurred prior to falling. In addition, the abnormal clotting and low platelets put the patient at high risk of bleeding.

**Recommendations**

- This case has resulted in local guidance for the management of patients with difficult IV access.

- A procedure for managing missed IV antibiotic doses has been implemented.

**NHS Improvement report**

Reporting to the National Reporting and Learning System (NRLS) continues to grow and they now receive over two million incident reports each year. This report explains how they reviewed those reports in the period between April and September 2016 and describes the action they took as a direct result – whether by issuing a Patient Safety Alert or working with partners.

The report also includes some interesting general data:
The NRLS offer a number of cases in their report which have prompted further action nationally. One is described below:

**Preventing and managing haemorrhage from arteriovenous fistulas**

Arteriovenous fistulas are created to allow patients to receive renal dialysis, but the arterial blood flow into the fistula combined with the frequent puncture wounds risk haemorrhage that can be rapid and potentially fatal.

We were contacted by an NHS trust that had recently experienced two life-threatening incidents relating to haemorrhaging renal fistulas and sought our support to explore opportunities to promote shared learning. We carried out a clinical review of reports to StEIS (the serious incident database) and identified six similar events in the preceding year. The results were anonymised and the findings discussed with the British Renal Society (BRS), which agreed to use our review and the local learning to support the work of the BRS Vascular Access Special Interest Group. This group is developing resources for renal units across the NHS to help them prevent and manage the risk of ‘life-threatening haemorrhages from vascular access for haemodialysis’.

We will work with the BRS to support dissemination of relevant resources to health and care professionals beyond the renal community.

For other cases similar to the one above go to: https://improvement.nhs.uk/resources/patient-safety-review-and-response-april-september-2016/
For any further information about Patient Safety, or if you have any cases you would like to be included in Nevermore, please contact Lisa Pinkney, Patient Safety Manager, on 771 2860, or email: lisa.pinkney@york.nhs.uk