difference is unclear would warrant further investigation into alternative sources of sodium e.g. drug infusions and additional fluids which were outside of the scope of this audit.

Conclusion The change from using heparin in sodium chloride 0.9% to heparin in sodium chloride 0.45% was not found to lead to a reduction in plasma sodium levels in our patient population. Limitations to the audit include not considering alternative sources of sodium and a small patient population.

REFERENCE

P029 AUDIT OF ACICLOVIR PRESCRIBING TO ASSESS WHETHER CHANGING THE ORDER OF DROP DOWN BOX OPTIONS IN AN ELECTRONIC PRESCRIBING SYSTEM CAN REDUCE PRESCRIBING ERRORS

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Aim In December 2016 it was identified that there had been multiple reports of prescribing errors with intravenous aciclovir on the paediatric intensive care unit (PICU). After investigation it was concluded that prescribers choosing incorrectly from a drop down menu of drug and dosing options on the electronic prescribing (EP) system was the main contributory factor. From 01/02/17 the aciclovir drop down options were prioritised, with the most frequently used option appearing first, to encourage prescribers to pick the correct regimen.

Methods The trust has been using the Phillips IICCA EP system across all intensive care units since 2016. Picking errors when prescribing are known to be a potential risk within EP systems, however tailoring these systems to guide choice also has the potential to improve patient safety by reducing the risk of prescribing errors.1 Aciclovir has a complex range of dosing recommendations, especially in paediatrics, and incorrect prescribing increases the likelihood of subtherapeutic treatment or adverse effects. The aim of this audit is to assess whether changing the order of prescription choices on the drop down menu in the EP system reduced prescribing error rates for intravenous aciclovir. All prescriptions for aciclovir on PICU were identified during the 6 months before and after implementing the change, from 01/08/16 to 31/07/17. 65 prescriptions were included in the audit and were reviewed retrospectively using the EP system and electronic medical notes to assess whether the prescribed aciclovir dose and route was correct for the patient’s age, weight and indication as well as whether the appropriate drop down option had been selected by the prescriber. Dosing was assessed against recommendations in the British National Formulary for children and trust empirical antibiotic guidelines.

Results Dosing errors were found in 22% (14/65) of prescriptions overall during the review period. Before the change was implemented 26% (9/35) of aciclovir prescription doses were incorrect, reducing to 17% (5/30) after the change. The overall dosing error rate was 14% (7/50) in prescriptions where the correct drop down option was chosen, in comparison to 47% (7/15) in cases where the wrong option had been selected, suggesting the importance of choosing the correct pre-set option to minimise prescribing error rates. In cases where doses were incorrect, the prescriber had chosen the incorrect pre-set drop down option for the patient’s age and indication in 78% (7/9) of prescriptions before the order change compared to 0% (0/5) afterwards.

Conclusion These results suggest that prescribing error rates were reduced after making alterations to the order of prescription choices on the drop down menu in the EP system and that prioritising the order of these options may positively influence prescribing. Errors were not completely eliminated suggesting more work is required to further minimise risk.

REFERENCE

P030 IMPROVING PATIENT EXPERIENCE BY IMPLEMENTING A NEW PATIENT PATHWAY TO OBTAIN METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS DECOLONISATION WITHIN THE PAEDIATRIC PRE-ASSESSMENT CLINIC

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Aim To improve patient experience, patient safety and streamline the patient journey when obtaining Methicillin-resistant well as unsafe due to interruption of healthcare professionals on the ward. To determine if this patient journey was a fair representation, questionnaires were distributed to parents/carers attending the pre-assessment clinic regarding the time taken at each stage of the service. These were distributed to every cardiac patient attending the clinic over a 4 week period (age 0–16 years). From the results it was concluded that the time could be reduced by patients obtaining MRSA decolonisation within the clinic; either by having a prescriber present or producing a Patient Group Directive (PGD). A PGD was preferred due to cost and workforce availability. A PGD was written, approved and implemented within clinic. To assess the reduction in time and change in patient experience, revised questionnaires are in the process of being distributed, again to every cardiac patient attending clinic over a 4 week period.

Results The initial patient journey took 130 minutes from beginning to end, with the time taken to obtain MRSA decolonisation being 80 minutes. 15 questionnaires were distributed, 9 patients responded (aged 6 months-14 years) with the mean time to obtain MRSA decolonisation being 59 minutes (40–85 minutes). From the 9 that responded, 5 of the comments sections regarding patient experience were left blank. 4 contained dissatisfied comments such as ‘very long afternoon with lots of walking’ and ‘seems silly to interrupt the very busy nurses and doctors for a prescription’. Post PGD 5 questionnaires have been distributed and 3 returned. Journey time has now been considerably reduced with an average time to obtain MRSA decolonisation being 5 minutes; a reduction of 54 minutes. Further responses are expected to support this.

Conclusion The patient experience when obtaining MRSA decolonisation prior to cardiac surgery was far from ideal. The implementation of a PGD has improved this experience and considerably reduced the time the process takes. This applies to all age ranges. A limitation is that only 3 questionnaires have been received post PGD implementation. The aim
is that at least 9 questionnaires will be returned in order to compare the time pre and post PGD. It is apparent that interruptions to healthcare professionals on the ward by patients from pre-assessment clinic have stopped, resulting in a safer clinical environment. Further work needs to be undertaken in order to demonstrate this.

REFERENCES

USE OF DISODIUM ETIDRONATE AND SODIUM THIOSULFATE IN A PREMATURE NEONATE WITH GENERALISED ARTERIAL CALCIFICATION OF INFANCY

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Situation A 30 week gestation male weighing 1.66kg presented with metabolic acidosis and high lactate and subsequently developed heart failure and hypertension. He initially started enteral feeds but these were later not tolerated and TPN commenced. On day 8 calcification of the aorta was identified on echocardiogram. CT scans showed extensive arterial calcification including the thoracic and abdominal aorta, subclavian and common carotid arteries, coeliac axis, SMA, renal arteries and iliac vessels. Generalised arterial calcification of infancy (GACI) due to ENPP1 mutation was suspected.

Background GACI, a rare autosomal recessive condition can be caused by ENPP1 mutation leading to low levels of inorganic pyrophosphate (PPi), a negative regulator of calcification. GACI has a high mortality rate, up to 55% at 6 months. Mortality has been shown to improve in those who survive the first few months of life.

Treatment Intravenous sodium thiosulfate, licensed for cyanide poisoning and used off-label for calciphylaxis in adults, was commenced to try and reduce existing calcification. Dosing that has been known to be used in three other babies from two different centres, was used - 12.5g/m² over 30 minutes on alternate days for 2 weeks followed by 12.5g/m² five days a week. This is in the same scale as adult calciphylaxis dosing and up to 400mg/kg can be used in paediatric cyanide poisoning. Bisphosphonates were commenced to prevent further calcification. Etidronate, a non-nitrogen containing bisphosphonate, was preferred due to its closer structural similarity to PPi than second generation bisphosphonates. Etidronate has been discontinued in the UK so was not initially available and a dose of pamidronate was given. A Canadian import of etidronate was sourced and commenced a week later. Due to SMA and coeliac axis calcification there were concerns regarding bowel perfusion and he was TPN fed except for 20ml/kg/day EBM. Etidronate 20mg/kg/day was commenced in three divided doses to improve gastrointestinal tolerance.

Outcome Initially his heart failure stabilised and hypertension managed with carvedilol. By day 35 full enteral feeds were reached and he was breathing unassisted in air. CT after one month’s treatment showed no worsening of vascular calcification, though unfortunately calcification did not appear to have improved. At 7 weeks he became tachypnoeic due to worsening heart failure and required respiratory support. Despite ongoing medical therapies he passed away at 8 weeks of age.

Challenges and lessons learnt Due to the rarity of the condition information on treatment options, dosing and monitoring are limited and the need to use an imported product lead to a short delay in treatment. Etidronate is only available in tablet form but Didronel brand can be crushed and suspended in water. Information about the suspension’s uniformity is unavailable but due to a lack of alternatives this was the option taken. A two hour break either side of etidronate while recommended, was compromised to ninety minutes as he required three hourly feeds. Combination treatment was used to try to reduce the calcification; however the extent of calcification had already caused significant cardiac compromise which ultimately led to his demise.

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THE BURDEN ASSOCIATED WITH MEDICINES RECONCILIATION IN HOSPITALISED CHILDREN

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Aim Medicines reconciliation in children is an important intervention which prevents unintended medication discrepancies and medication errors from occurring when a child moves from one setting to another, e.g. from home to hospital admission. A national study in England across multiple sites has shown that 1/3 of medication discrepancies are prevented from occurring.1 What has not been evaluated however, is the potential burden that medicines reconciliation would have on the resources, in particular on the pharmacy workforce. The overall aim of this project was to investigate the burden that is associated with admissions medicines reconciliation (AMR) in children.

Methods Over a 10 day period spanning over 4 weeks, rotational pharmacists carrying out hospital admission medicines reconciliation at a paediatric hospital in Birmingham, West Midlands were directly observed by a researcher (pharmacy student). This process was timed, and the student recorded the following observations:

- The number of AMRs that were initiated within 24 hours of admission
- The number of AMRs that there completed within 24 hours of admission
- The number of completed and incomplete medicines reconciliations
- The reasons for incompletion of medicines reconciliation during the observation period.

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Abstracts