and documenting patients' antimicrobial therapy regularly. As a tertiary/quaternary centre we treat complicated immunocompromised patients; we are unlikely to lower the burden of infection. Approximately 75% of antimicrobial prescribing was in the ICU and cancer and transplant setting, however we must optimise the use of antimicrobials and demonstrate good antimicrobial stewardship. This data will act as a baseline for a subsequent audits which will be carried out using the newly implemented EPIC® patient management system.

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P34 AN AUDIT OF THE TESTING AND DOCUMENTATION OF GENETIC MUTATION M1555A>G AND AMINOGLYCOSIDE PRESCRIBING

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10.1136/archdischild-2020-NPPG.43

Aims Amikacin is an aminoglycoside antibacterial, associated with both ototoxicity and nephrotoxicity.¹ It is used at the Trust first line for many indications, such as sepsis and pre-operative prophylaxis. A mutation in the m1555A>G gene has been linked to an increased risk of aminoglycoside induced ototoxicity², therefore making these patients susceptible to hearing damage when treated with aminoglycosides.³ The residual effect of this damage is both profound and rapidly progressive with resulting permanent hearing loss occurring even when the doses administered remain in the therapeutic window.⁴

Trust guidelines containing amikacin advise that genetic testing should consistently be carried out and where this is not possible, clinicians should discuss and receive advice from the microbiology team for an alternative option. Genetic testing can take up to two weeks to be reported causing a logistical problem for patients requiring the medication usually on a more urgent basis.

The aim of this study was to assess whether the Trust routinely provides genetic testing for mitochondrial DNA mutation m.1555A>G abnormality and to determine whether prescribed antibiotics are appropriately following the results of this testing, including any resulting patient safety issues.

Method The data was collected retrospectively from all genetic testing results since 2008 using prescribing data from the implementation of JAC and also an analysis of patient notes to check audiology referrals. The comparative standards used were 100% of positive test results should be recorded on patient prescribing record, this process is currently manual. 100% of patients who have received an aminoglycoside have prior testing for the m1555A>G mutation, 100% of patients who have received an aminoglycoside tested negative for the m1555A>G mutation, 100% of patients who tested positive for the m1555A>G mutation have not received an aminoglycoside, either before or after the test result.

Results

- 3815 patients were tested for the m.1555A>G mutation between 2008–2018 and included for audit, 12 patients (0.31%) tested positive for the genetic mutation

- 100% of these patients had their positive result recorded as an aminoglycoside allergy on JAC
- 5 of these 12 patients had been treated with aminoglycosides at GOSH (42%)
- 1 of these patients received Amikacin before genetic testing

Conclusion This audit will inform future decisions regarding Trust guidelines containing amikacin. The low incidence of this mutation will be useful in discussion on moving forward in providing testing for patients. It reassures users that the current reporting system is robust and results are reliably recorded. Of the 5 patients who had a positive genetic mutation and received an aminoglycoside it was not clear if this was an intentional, informed risk benefit decision. Further work is being done to ensure these patients have and are followed up.

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P35 PAEDIATRIC RHEUMATOLOGY VIRTUAL BIOLOGIC CLINIC (VBC)

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10.1136/archdischild-2020-NPPG.44

Aim To improve the overall process for the prescribing of biologics within the paediatric rheumatology service. The VBC would help achieve the following:

- Successful implementation within the service.
- Streamlined process for cost effective prescribing of biologics in line with national guidance.
- Ensuring all patients receive the appropriate pre-biologic checks and documentation of core set criteria (where possible) to ensure safe prescribing.
- Ascertaining other funding mechanisms for patients who do not meet national guidance or commissioning criteria.

Methods The VBC was modelled on the adult service and the process comprises of the following:

- Patients starting or switching biologic therapy are highlighted in clinic.
- Patients who require continuation in therapy are highlighted by the pharmacy homecare team.
- For new patients, pre-biologic checks are ordered and routine bloods are requested for those continuing therapy.
- VBC comprises of a 2 hour multidisciplinary team (MDT) meeting between a consultant paediatric rheumatologist or senior fellow, specialist nurse and pharmacist.
- Patients referred to VBC are reviewed against our biologics clerking sheet. Ensuring pre-biologic checks have been completed, routine bloods have been checked, core set criteria has been recorded, patient is compliant with national guidance and that the appropriate Blueteq form has been completed.

- A homecare registration (if required) and prescription form are completed.
- A telephone consultation with the parent/patients is provided by the pharmacist explaining the homecare process and answering any clinical questions.
- The specialist nurse completes output documentation for GP and arranges next follow up.
- A real-time biologics database records core quality data for auditing purposes.
- VBC list is sent to the service manager for reimbursement.
- Patients who do not meet national guidance are referred to the weekly MDT.

Results The service has 120 patients being treated on biologics. Since November 2018, 112 patients of these patients have been reviewed. 1.7% have been non-compliant with national guidance and 5% did not have Blueteq numbers.

The VBC has enabled the MDT to assess response to biologic therapies by ensuring core set criteria is being recorded. A snapshot audit showed that documentation had increased from 25% to 50%.

Prescription turnaround time has reduced from 7 days to 3 days preventing treatment delay.

Discussion VBC has enabled the majority of patients to be reviewed, whilst showing we are compliant with national guidance. Routine and pre-biologic bloods had been requested for all patients and the recording of core set criteria had shown some improvement. Although not achieving the required level of documentation. Telephone consults have been perceived well by patients/parents. Having a pharmacist prescriber has had a positive outcome within the MDT and both the workload and workload has improved.

Conclusion The VBC has been pivotal in improving patient care within the service. The MDT have collaboratively been able to ensure cost-effective prescribing, improve data collection, and reduce treatment delay whilst enhancing the pharmacist's role. The process has highlighted the documentation of core set criteria is still low and requires further improvement. Ensuring compliance with NHS England commissioning criteria, Blueteq forms should be completed prior to prescriptions being written.

P36

NUMETA G13% PRETERM NEONATAL PARENTERAL NUTRITION SOLUTION – A LICENSED ALL-IN-ONE TRIPLE CHAMBER, READY TO USE AND TERMINALLY STERILISED PARENTERAL NUTRITION FOR PRETERM NEWBORN INFANTS

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10.1136/archdischild-2020-NPPG.45

Aims We aim to evaluate the efficacy and safety of Numeta G13%E preterm neonatal parenteral nutrition (PN) in our neonatal population.

In September 2017 a National Patient Safety Alert (NPSA) highlighted the risk of harm to babies when lipid was mistakenly run at the rate intended for the aqueous component resulting in significant lipid overdose.

Although we have worked to implement many of the alert's recommendations, we feel we can avoid this risk further by using an all-in-one PN solution.¹

Numeta meets current nutritional guidelines as per British Association of Perinatal Medicine (BAPM) but this project allows comparison of outcomes important to both patient and service between those achieved with our current regimen and those with the all-in-one regimen.²

Methods We carried out a quality improvement project from April 2018 to April 2019. We collected data from 330 babies in our neonatal unit during six months before (154 babies) and after (176 babies) the adoption of the all-in-one solution.

Our previous PN regimen consisted of a 'menu' of aqueous bags (starter, maintenance, 'light' and bespoke) and a separate lipid solution. All of them were suitable for peripheral or central administration. Numeta came with similar choices: starter, maintenance -for central administration only- and 'lite' and Numeta peripheral, suitable for peripheral administration. Bespoke bags were also available if clinically indicated. We set out our desired outcomes and measured parameters accordingly:

Patient outcomes

- Metabolic stability: electrolyte, glucose, bilirubin and lipid measurements summarised by the need to change from standard PN regimen and/or requirement for insulin.
- Fluid balance summarised by the lowest weight during the first two weeks of life and time taken to regain birth weight.
- Growth summarised by change of standard deviation score of weight and head circumference between birth and discharge or transfer back to local hospital.
- Liver tolerance of lipid solutions summarised by incidence of cholestasis ($>25 \mu\text{mol/l}$ conjugated fraction of serum bilirubin)
- Days and type of PN
- Sepsis

Service outcomes

- Nursing time taken to prepare PN
- Cost
- Wastage
- Access to product

Results Although we finished collecting the data in April 2019, we are still in the process of analysing it and evaluating the final results. There have been no cases of lipid overdose and our neonates (including the preterm ones) have so far tolerated well the new parenteral nutrition solution. Average nursing time preparing Numeta went down from 18.5 minutes to 8 minutes and comparison of cost came in favour of Numeta. PN wastage was higher with Numeta (4.7% Maintenance, 10% 'light', peripheral 50%) especially in the first month during the transition phase. There was no significant increase of bespoke bags when Numeta was introduced.

Conclusions In summary, so far we have not identified significant clinical differences between the first six months of the project -using our old standardised nutrition regimen- and the last months -on the new all-in-one solution. We have continued with Numeta preterm solution on the basis of assumed safety.

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