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AN AUDIT TO ASSESS THE SUITABILITY OF PATIENTS AT A TERTIARY/QUATERNARY PAEDIATRIC HOSPITAL TO SWITCH FROM INTRAVENOUS (IV) TO ORAL (PO) ANTIMICROBIAL THERAPY

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10.1136/archdischild-2020-NPPG.41

Introduction, Aims and Objectives In 2011 the Start Smart then Focus campaign was launched by Public Health England (PHE) to combat antimicrobial resistance.¹ The 'focus' element refers to the antimicrobial review at 48–72 hours, when a decision and documentation regarding infection management should be made. [OM1] At this tertiary/quaternary paediatric hospital we treat, immunocompromised, high risk patients. In a recent audit it was identified that 80% of antimicrobial use is IV, this may be due to several factors including good central access, centrally prepared IV therapy and oral agents being challenging to administer to children. The aim of the audit was to assess if patient have a blood culture prior to starting therapy, have a senior review at 48–72 hours, and thirdly if our high proportion of intravenous antimicrobial use is justified.

Method Electronic prescribing data from JAC was collected retrospectively over an 8 day period. IV antimicrobials for which there is a suitable oral alternative, this was defined as >80% bioavailability, were included. Patients were excluded in the ICU, cancer and transplant setting, those with absorption issues and with a high risk infection, such as endocarditis or bacteraemia. Patient were assessed against a set criteria to determine if they were eligible to switch from IV to PO therapy; afebrile, stable blood pressure, heart rate <90/min, respiratory rate < 20/min for 24 hours. Reducing CRP, reducing white cell count, blood cultures negative or sensitive to an antibiotic that can be given orally.

Results

- 100% of patients (11) had a blood cultures taken within 72 hours of starting therapy
- 55% of patients had a positive blood culture
- 82% of patients had a senior review at 48–72 hours
- 46% of patients were eligible to switch from IV to PO therapy at 72 hours
- 33% of eligible patients were switched from IV to PO therapy at 72 hours

Conclusion and Recommendations This audit had a low sample size due to the complexity of the inclusion and exclusion criteria, and the difficulty in reviewing patient parameters on many different hospital interfaces. It is known that each patient is reviewed at least 24 hourly on most wards and therefore there is a need for improved documentation of prescribing decisions. Implementation of an IV to oral switch guideline is recommended to support prescribing decisions and educate and reassure clinicians on the bioavailability and benefits of PO antimicrobial therapy where appropriate. Having recently changed electronic patient management systems strategies to explore include hard stops on IV antimicrobial therapies, however this will require much consideration. Education of pharmacist and nurses is required to raise awareness about antimicrobial resistance and the benefits of IV to PO switches, despite the ease of this therapy at out Trust. This will promote a culture in which all healthcare professionals are active antimicrobial guardians, leading to better patient outcomes, less service pressures, and long term financial benefit.

REFERENCE

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ANTIMICROBIAL PRESCRIBING POINT PREVALENCE STUDY AT A PAEDIATRIC TERTIARY/QUATERNARY CENTRE

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10.1136/archdischild-2020-NPPG.42

Aims Increasing antibiotic resistant organisms combined with frequent, inappropriate use of antibiotics is giving rise to infections which may no longer be able to be treated¹. The aim of this prevalence study was to audit antimicrobial prescribing at a Hospital against Trust antimicrobial policies to determine whether the rising trend in antimicrobial prescribing is appropriate.

Methods The data was collected in a point prevalence manner; prescriptions that were active at the time of auditing were included and those which were discontinued or prescribed and not yet administered were excluded. A data collection template was designed and distributed to ward pharmacists with education on how to complete. The following parameters were audited; allergy status, antibiotic name, route, indication, duration, review date as well as the ward and speciality. Ward pharmacists assessed whether the prescription was in line with Trust guidelines/ID/Micro recommendations. Data was collected into a central database, as well time taken to audit.

The audit standards were

1. 90% of patients prescribed an antimicrobial for an indication in line with Trust policy or ID/Micro
2. 90% of patients prescribed an antimicrobial for a duration in line with Trust policy or ID/Micro
3. 90% of patients have an allergy status documented

Results 272 inpatient charts were reviewed. 153 of these patients (56%) were prescribed an antimicrobial. 398 antibiotic prescriptions were included for audit. 38% of prescriptions were for medical/surgical prophylaxis. Prophylactic prescriptions were not included for further analysis. 85% of prescriptions had an indication documented either on the electronic chart (JAC) or written in the paper medical notes. 98% of prescriptions were as per policy or in line with recommendations from ID/Micro. 61% of prescriptions had a review date documented. 100% of patients had an allergy status documented. Average duration of antibiotic prescription was 8 days, range 1–50 days, median 5. 80% of prescriptions were IV. 70% of antimicrobial prescribing takes place in the ICU/cancer/transplant setting. Respiratory tract infections were the most common indication for antimicrobial prescribing, 35%. Amikacin was the most commonly prescribed antibiotic (15%), followed by piperacillin/tazobactam (14%). The audit cost in terms of pharmacist time was £763, at a total of 33 hours.

Conclusions Policy compliant prescribing was very high at 98%; this figure is surprisingly high and poses questions as to the accuracy of data collection and whether bias was present. As a Trust we are now interested and will focus on improving intravenous to oral switches and reviewing

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.

REFERENCE

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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.