Introduction

• There are well defined guidelines for the use of Surgical Antimicrobial Prophylaxis (SAP), however previous studies indicate that these are not adhered to in 30% to 90% of cases.1
• Inappropriate SAP is commonly a result of incorrect dose, choice of antimicrobial and/or prolonged duration.
• Inappropriate SAP may result in increased:
  • antibiotic resistant organisms 2
  • surgical site infections3
  • clostridium difficile infections 4
  • healthcare related costs2
• Conducting prospective audits of SAP with direct interaction between prescribers and clinical pharmacists is supported by the Infectious Diseases Society of America to reduce inappropriate use of antimicrobials. 5

Aim

• To investigate the effect of a pharmacist-led prospective interventional audit on reducing inappropriate SAP in a tertiary hospital.

Method

1. 336 surgical patients where randomly selected (Figure 2) from February to September 2016 to be included in the audit

2. A Surgical Prophylaxis Audit tool (Figure 3) was developed and used to identify inappropriate SAP prescriptions

3. As a result of the audit, prescribers who initiated non compliant SAP were educated about recommended guidelines

4. Impact of intervention was measured by ongoing auditing of SAP and increased compliance with local guidelines

5. The intervention was evaluated through a post audit survey of prescribers

Results

Appropriate dose of SAP

• Adherence to dose guidelines in post operative patients increased from 31% to 100% (Table 1).

Appropriate duration of SAP

• Extension of SAP beyond 24 hours post operation decreased from 48.9% to 14.8% (Table 2).

Prescriber evaluation

• Results from post audit survey of prescribers:
  • 78% found the intervention was effective .
  • 56% believed the intervention had improved prescribing.

Discussion

• This audit found that initially a significant proportion of SAP did not adhere to recommended local and national guidelines.
• The intervention resulted in providing feedback and re-education to the prescriber leading to reduced inappropriate SAP.
• A rotation of junior medical officers working in surgical wards in July 2016 may correlate with the corresponding increase of inappropriate durations of SAP, this was followed by a subsequent reduction in the following months, possibly due to the effectiveness of the audit.
• The National Antimicrobial Prescribing Survey (NAPS) in 2015 reported SAP extended beyond 24 hours in 27.4% of SAP prescriptions, with a national goal of <5% to be achieved. During the course of this intervention SAP duration >24 hours was reduced from 48.9% to 14.8%, well under the NAPS results.
• Evaluation of barriers that may prevent adherence to SAP guidelines are recommended and solutions to increase compliance should be encouraged.6
• The audit highlights an ongoing opportunity for a clinical pharmacist to facilitate an audit process and provide educational interventions to reduce inappropriate SAP and improve patient safety.

References

2. Degan H, Etingo B, Snyder A, O’faril B, Aydemir M. Pre-operative antibiotic prophylaxis: Adherence to guidelines and effects of educational intervention. 2017

Acknowledgements

Kristin Xenos, Antimicrobial Stewardship Lead Pharmacist Westmead Hospital
Tony Lee, Antimicrobial Stewardship Pharmacist (previous lead) Westmead Hospital
Dr Matthew Watts, Infectious Disease Staff Specialist Westmead Hospital
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Figure 1: Percentage of audited patients surgical specialty

Figure 2: Surgical Prophylaxis Audit tool utilized to identify inappropriate SAP prescriptions

Figure 3: Method of intervention