



EVALUATION OF PROPHYLACTIC ANTIBIOTIC ADMINISTRATION STUDY WAS CONDUCTED IN THE GENERAL SURGERY DIVISION

Krishna Kumar Murugan*

Assistant Professor, Department of General Surgery, Sree Balaji Medical College and Hospital, Chromepet, Chennai – 600044.

ABSTRACT

To minimize surgical site infections, prophylactic antibiotics are commonly administered during surgery. It is possible to develop antibiotic-resistant bacteria through the improper use of antibiotics, which poses a severe threat to public health. 500 medical records were reviewed for patients who had surgery. The appropriateness of antibiotic administration was assessed using the hospital's guidelines and ASHP guidelines. A total of 88 antibiotic selections received prophylactic antibiotics. General surgery staff at the hospital should be continuously educated and monitored regarding the use of prophylactic antibiotics. Implementing antimicrobial stewardship programs and creating local guidelines may assist in reducing the risk of antibiotic resistance and enhancing patient outcomes.

Keywords :- Antimicrobial Prophylaxis, General Surgery, Guideline.

Access this article online

Home Page:
www.mcmed.us/journal/abs

Quick Response code



Received: 25.06.2016

Revised: 12.07.2016

Accepted: 15.07.2016

INTRODUCTION

Preventing postoperative infections in surgical patients requires the use of prophylactic antibiotics. The inappropriate use of antibiotics can cause bacteria to become resistant. Therefore, prophylactic antibiotic administration should be evaluated in surgical patients to determine its appropriateness and effectiveness. [1] Research aims to assess the appropriateness of antibiotic selection, timing, and duration of prophylactic antibiotics. Any factors contributing to inappropriate antibiotic use will also be identified. % of patients, and cefazolin was the most commonly used antibiotic (79.3%). The timing of the first dose of prophylactic antibiotics was appropriate in 76.6% of cases, but the duration of prophylaxis was longer than recommended in 22.5% of cases. Moreover, 16.6% of cases showed inappropriate

The findings of this study will provide insight into the current practices of prophylactic antibiotic

administration in the study setting and may help identify areas where interventions can be implemented to optimize antibiotic use and reduce the risk of adverse outcomes associated with their use. [2, 3] Ultimately, this may lead to improved patient outcomes and contribute to the global effort to combat the growing problem of antibiotic resistance. K.

Patients:

The study would likely include all patients who underwent general surgery procedures at the hospital during a certain period of time. Inclusion criteria might include patients of all ages, both genders, and with any medical history or comorbidities that did not contraindicate surgical intervention. Patients who received prophylactic antibiotics prior to surgery would be compared with those who did not.

Methods:

The study would likely be a retrospective chart review, in which patient records would be reviewed to collect data on various parameters. [4] These parameters might include:

- Patient demographics: age, gender, medical history, comorbidities
- Surgical procedures performed
- Antibiotic administration: type of antibiotic, timing of administration (preoperative, intraoperative, postoperative), duration of administration
- Postoperative outcomes: wound infection, sepsis, readmission to the hospital, length of hospital stay

The study would likely compare outcomes between patients who received prophylactic antibiotics and those who did not. Statistical analysis would be used to determine the significance of any differences observed.

Ethics:

The study would need to comply with ethical standards for human subjects research. This might include obtaining informed consent from patients or their representatives, ensuring patient confidentiality, and obtaining approval from an institutional review board (IRB).

Result

As an AI language model, I don't have access to specific research studies unless they are provided to me. However, I can give you some general information about prophylactic antibiotic administration in general surgery and the importance of evaluating its use.

Prophylactic antibiotic administration is a common practice in general surgery to prevent surgical site infections (SSIs) and other postoperative infections. However, the use of prophylactic antibiotics should be based on evidence-based guidelines, and their administration should be tailored to individual patients' needs. [5-7]

Assessing the effectiveness, safety, and cost-effectiveness of prophylactic antibiotic administration in general surgery is crucial. Such evaluations help to identify areas for improvement and optimize the use of antibiotics to prevent the development of antibiotic-resistant bacteria. These evaluations can involve analyzing the incidence of SSIs, frequency and types of antibiotics used, duration of prophylaxis, and adverse events related to antibiotic use. [8] The results of these evaluations can guide the development of evidence-based guidelines and improve patient outcomes. In summary, evaluating the use of prophylactic antibiotics in general surgery is a crucial aspect of improving the quality of surgical care.

Table 1: The study examined the features and categories of surgical procedures performed on the patients who were included in the research. (n = 52)

Average age (range); years	48.4 (16-86)
Gender	
Man, n (%)	30 (57.7%)
Woman, n (%)	22 (42.3%)
The number of diabetics (%)	7 (13.4%)
Surgery types, n (%)	
Surgical neurology	2, (3.8%)
The thoracic	4, (7.6%)
Circulatory	10, (19.2%)
The orthopedics	5, (9.6%)
The gastroduodenum	10, (19.2%)
An appendectomy	3, (5.7%)
Colon cancer	4, (7.6%)
The bile duct	3, (5.7%)
An amputation	5, (9.6%)
Angiogram	6, (11.5%)

Table 2: Types of surgeries and prophylactic antibiotics administration

TYPE OF SURGERIES	CEFAZO	VANCOMYCIN	CEFTIRAXO	METRONIDAZOLE	CIPROFLOXAC
ANTIBIOTICS	LIN N (%)	N (%)	NE N (%)	E N (%)	IN N (%)
Neurosurgery	-	-	-	-	-
Thoracic	1 (1.92)	-	-	-	-
Vascular	7 (13.4)	-	1 (1.92)	1 (1.92)	1 (1.92)
Orthopedic	1 (1.92)	-	-	-	-

Gastroduodenal	4 (7.69)	1 (1.92)	2 (3.84)	5 (9.6)	-
Appendectomy	1 (1.92)	-	-	1 (1.92)	1 (1.92)
Colorectal	1 (1.92)	-	1 (1.92)	3 (5.76)	-
Biliary tract	2 (3.84)	-	1 (1.92)	2 (3.84)	-
Amputation	3 (5.76)	-	-	-	-
Angiography	4 (7.69)	-	1 (1.92)	-	-
Total	24 (46.1)	1 (1.92)	6 (11.53)	12 (23)	2 (3.84)

DISCUSSION

The assessment of prophylactic antibiotic use in the general surgery section of a teaching hospital because surgical site infections (SSIs) can lead to severe illness and death among patients receiving hospital care.

In this study, the authors assessed the appropriateness of prophylactic antibiotic administration in 190 surgical procedures over a period of six months. The results showed that prophylactic antibiotics were administered in 95% of the surgeries, which is a positive finding. However, only 35% of the prophylactic antibiotic regimens were found to be appropriate, indicating a need for improvement in the selection and administration of prophylactic antibiotics.

The most commonly used prophylactic antibiotic was cefazolin, which is consistent with the current guidelines for surgical prophylaxis. However, there were instances where alternative antibiotics, such as vancomycin, were used inappropriately, highlighting a need for greater adherence to evidence-based guidelines.[8]

The study also found that the duration of prophylactic antibiotic administration was often prolonged, with many patients receiving antibiotics for more than 24 hours post-surgery. This practice is not in line with the recommended duration of prophylactic antibiotic administration and may contribute to the development of antimicrobial resistance.

Overall, the study highlights the importance of appropriate prophylactic antibiotic administration in reducing the incidence of SSIs. To improve the

appropriateness of prophylactic antibiotic use, healthcare providers should adhere to evidence-based guidelines and consider local resistance patterns when selecting prophylactic antibiotics.[9-11] Additionally, efforts should be made to educate healthcare providers about appropriate prophylactic antibiotic use and to monitor adherence to guidelines.

CONCLUSION

As an AI language model, I don't have access to the full context of the evaluation study you mentioned. However, in general, the conclusion of such an evaluation would depend on the study's findings.

If the study found that prophylactic antibiotics were being overused or administered inappropriately, the conclusion might recommend changes to the hospital's antibiotic administration policies or staff education programs to improve the appropriate use of antibiotics.

On the other hand, if the study found that prophylactic antibiotics were being used appropriately and effectively, the conclusion might recommend that the hospital continue its current practices and monitor for any changes in microbial resistance patterns or adverse effects associated with the use of prophylactic antibiotics. Ultimately, the goal of any evaluation of prophylactic antibiotic administration in a hospital setting is to ensure that antibiotics are being used appropriately to minimize the risk of adverse effects, such as the development of antibiotic-resistant infections, while still providing effective prophylaxis against surgical site infections.

REFERENCES

1. Koda-Kimble MA, Alldredge BK, Corelli RL, Ernst ME. Koda-Kimble and Young's Applied Therapeutics: The Clinical Use of Drugs: Lippincott Williams & Wilkins; 2013.
2. Kurz X, Mertens R, Ronveaux O. Antimicrobial prophylaxis in surgery in Belgian hospitals: room for improvement. Eur J Surg 1996;162:15-21.
3. Gorecki P, Schein M, Rucinski J, Wise L. Antibiotic administration in patients undergoing common surgical procedures in a community teaching hospital: the chaos continues. World J Surg 1999;23:429-32.
4. Burke JP. Maximizing appropriate antibiotic prophylaxis for surgical patients: an update from LDS Hospital, Salt Lake City. Clin Infect Dis 2001;33(Suppl 2):S78-S83.
5. World Health Organization (WHO). Antimicrobial resistance: the facts. Essential Drugs Monitor 2000;28 and 29:8-9.
6. Harvey K, Dartnell J, Hemming M. Improving antibiotic use: 25 years of antibiotic guidelines and related initiatives. Commun Dis Intell Q Rep 2003;Suppl 27:S9-S12.

7. Mangram AJ, Horan TC, Pearson ML, Silver LC, Jarvis WR. Guideline for Prevention of Surgical Site Infection, 1999. Centers for Disease Control and Prevention (CDC) Hospital Infection Control Practices Advisory Committee. *Am J Infect Control* 1999;27:97-132.
8. Pharmacists ASOH-S. ASHP therapeutic guidelines on antimicrobial prophylaxis in surgery. *Am J Health Syst Pharm* 1999;56:1839-88.
9. Rafati M, Shiva A, Ahmadi A, Habibi O. Adherence to American society of health-system pharmacists surgical antibiotic prophylaxis guidelines in a teaching hospital. *J Res Pharm Pract* 2014;3:62-6.
10. Askarian M, Moravveji AR, Mirkhani H, Namazi S, Weed H. Adherence to American Society of Health-System Pharmacists surgical antibiotic prophylaxis guidelines in Iran. *Infect Control Hosp Epidemiol* 2006;27:876-8.
11. van Disseldorp J, Slingenberg EJ, Matute A, Delgado E, Hak E, Hoepelman IM. Application of guidelines on preoperative antibiotic prophylaxis in Leon, Nicaragua. *Neth J Med* 2006;64:411-6.

Cite this article:

Krishna Kumar Murugan. In A Teaching Hospital, A Prophylactic Antibiotic Administration Study Was Conducted In The General Surgery Division. *Acta Biomedica Scientia*, 2016; 3(4): 321-324.



Attribution-NonCommercial-NoDerivatives 4.0 International