SYNOPSIS

1. TITLE

Restricted Antimicrobial Usage Data Analysis and Compliance of Surgical Antimicrobial Prophylaxis (SAP) under Antimicrobial Stewardship Program (ASP) at EHCC Hospital, Jaipur

2. INTRODUCTION

Antimicrobial resistance (AMR) is one of the most significant threats to global public health. Hospitals are particularly vulnerable to AMR due to high antimicrobial consumption for complex procedures and critically ill patients. Surgical Antimicrobial Prophylaxis (SAP) plays a vital role in preventing surgical site infections (SSIs), but non-compliance with SAP guidelines contributes to unnecessary antimicrobial use and AMR. Antimicrobial Stewardship Programs (ASP) aim to optimize antimicrobial prescribing to combat resistance. This study aims to assess compliance with SAP protocols and analyze restricted antimicrobial usage patterns at EHCC Hospital, Jaipur.

3. RESEARCH QUESTION

What is the compliance rate of SAP protocols and the appropriateness of restricted antimicrobial use under ASP at EHCC Hospital, Jaipur?

4. OBJECTIVES

Primary Objectives:

- To analyze the usage pattern of restricted antimicrobials at EHCC Hospital.
- To assess the compliance of surgical antimicrobial prophylaxis (SAP) protocols as per the institutional and national guidelines.
- To evaluate the appropriateness of antimicrobial prescriptions based on the Antimicrobial Stewardship Program (ASP) guidelines.

Secondary Objectives:

- To identify common deviations from recommended ASP and SAP protocols in clinical practice.
- To assess department-wise or specialty-wise variation in restricted antimicrobial usage.
- To determine the frequency and causes of inappropriate antimicrobial prescribing.
- To examine the documentation practices related to antimicrobial prescriptions and prophylaxis.

5. HYPOTHESIS

To test the objectives of the study statistically and objectively, the following hypotheses have been formulated:

- **Null Hypothesis (H_0):** There is no significant non-compliance or inappropriate use of surgical antimicrobial prophylaxis (SAP) across departments at EHCC Hospital.
- **Alternative Hypothesis (H_1):** There is significant non-compliance and inappropriate use of surgical antimicrobial prophylaxis (SAP), and this varies across departments and surgery types.

6. MATERIAL AND METHODS

STUDY DESIGN

Retrospective, observational, quantitative study.

SETTING

EHCC Hospital, Jaipur, under the Department of Quality.

STUDY POPULATION

Inpatients undergoing surgical procedures where SAP was indicated and cases prescribed restricted antimicrobials.

Inclusion Criteria:

• All surgical cases between March and May 2025.

• Cases receiving restricted antimicrobials.

Exclusion Criteria:

• Patients without complete documentation.

• Cases where antimicrobials were prescribed outside ASP monitoring scope.

STUDY TOOLS

• SAP compliance checklists.

• Restricted antimicrobial audit forms.

• Pharmacy records.

• Patient files and EMR data.

DURATION OF STUDY

3 months.

SAMPLE SIZE

180 surgical cases and restricted antimicrobial prescriptions.

SAMPLING TECHNIQUE

Universal sampling.

DATA COLLECTION PROCEDURE

Review of SAP documentation, antimicrobial prescriptions, pharmacy logs, and audit reports; data entered in a structured tool for analysis.

OPERATIONAL DEFINITIONS

• SAP Compliance: Adherence to timing, drug selection, duration, and documentation guidelines.

• Appropriate Antimicrobial Use: Prescriptions aligning with ASP protocols.

7. DATA ANALYSIS PLAN

Descriptive statistics will be used to calculate SAP compliance rates (%) and appropriateness of restricted antimicrobial use. Departmental comparisons will be presented using bar graphs and pie charts. Data analysis will be done using Microsoft Excel.

8. ETHICAL CONSIDERATIONS

Approval will be obtained from the Institutional Ethics Committee. Confidentiality of patient data will be maintained, and no direct patient interaction will occur.

9. IMPLICATIONS OF RESEARCH

The study will highlight SAP compliance gaps and irrational use of restricted antimicrobials, supporting ASP strengthening and improved surgical safety at EHCC Hospital.

10. REFERENCES

1. World Health Organization. Global Action Plan on Antimicrobial Resistance. 2015.

2. Indian Council of Medical Research. Antimicrobial Stewardship Guidelines. 2022.

3. Bratzler DW, et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. Am J Health Syst Pharm. 2013.