

**MICROBIOLOGICAL PROFILE AND ANTIMICROBIAL SUSCEPTIBILITY PATTERNS OF BACTERIAL ISOLATES FROM POST-CAESAREAN SECTION SURGICAL SITE INFECTIONS**

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KEYWORDS :**INTRODUCTION**

Surgical site infections (SSIs) following caesarean sections represent a significant burden in obstetric care, especially in resource-limited settings. These infections contribute to increased maternal morbidity, prolonged hospitalization, and higher healthcare costs. Identification of causative organisms and their antimicrobial susceptibility patterns is essential for effective empirical therapy and infection control.

OBJECTIVE

This study was conducted to determine the microbiological profile and antimicrobial susceptibility patterns of bacterial isolates from SSIs following C-sections in a tertiary care hospital in East Bihar.

METHOD

This prospective observational study was conducted in the Department of Microbiology, Jawaharlal Nehru Medical College, Bhagalpur, Bihar, over a period of six months, from November 2024 to April 2025. Wound swabs or pus aspirates obtained using a sterile syringe from clinically diagnosed post-Caesarean section surgical site infections (SSIs) were collected under aseptic precautions. The samples were transported promptly to the microbiology laboratory without delay. Inoculation was performed on blood agar and MacConkey agar, and the plates were incubated at 37°C for 24 to 48 hours. Bacterial isolates were identified based on Gram staining and standard biochemical tests. Antimicrobial susceptibility testing was carried out using the Kirby-Bauer disk diffusion method on Mueller-Hinton agar and interpreted according to CLSI guidelines.

RESULTS

Out of 147 post-caesarean section cases presenting with surgical site infections (SSIs), 97 (66.0%) yielded positive cultures, of which 3 (3.09%) showed polymicrobial growth. The most common isolates were *Staphylococcus aureus* 33 (34.0%), of which 14 (42%) were methicillin-resistant *S. aureus* (MRSA) strains, followed by *Escherichia coli* 24 (24.7%), *Klebsiella pneumoniae* 19 (19.6%), and *Pseudomonas aeruginosa* 10 (10.3%). Gram-positive isolates demonstrated high sensitivity to linezolid and vancomycin, while Gram-negative organisms showed variable resistance patterns, with notable sensitivity to carbapenems and amikacin. Multidrug resistance was observed in 22 (41.6%) of the Gram-negative isolates.

CONCLUSION

The study highlights the predominance of *S. aureus* and Gram-negative bacilli in post-C-section SSIs, with an alarming prevalence of multidrug-resistant organisms. Continuous surveillance of local antibiograms is essential to guide empirical therapy. Strengthening infection control practices and antibiotic stewardship programs is critical to reducing the burden of SSIs in obstetric surgical care.