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Introduction:
Most septic patients managed by critical care response teams (CCRT) are prescribed antimicrobials. Nevertheless, data evaluating their appropriateness are lacking both locally and internationally. The objective was to assess antimicrobial use among septic and non-septic patients managed by CCRT.

Methods:
Case-control design was used to compare septic (cases) and non-septic (controls) CCRT patients at tertiary care setting. The frequency of antimicrobial use was assessed before and after CCRT activation. The appropriateness of antimicrobial use was assessed at day four post-CCRT, based on standard recommendations, clinical assessment, and culture results.

Results:
A total of 157 cases and 158 controls were included. The average age was 61.1±20.4 years, and 54.6% were males, with minor differences between groups. The use of any antimicrobial was 100.0% in cases and 87.3% in controls (p<0.001). The use of meropenem (68.2% versus 34.8%, p<0.001) and vancomycin (56.7% versus 25.9%, p<0.001) were markedly higher in cases than controls. The overall appropriateness was significantly lower in cases than controls (50.7% versus 59.6%, p=0.047). Individual appropriateness was lowest with meropenem (16.7%) and imipenem (25.0%), and highest with piperacillin/tazobactam (87.1%) and colistin (78.3%). Only 48.5% of antimicrobials prescribed by CCRT were de-escalated by a primary team within four days.

Conclusion:
Empiric use and inadequate de-escalation of broad-spectrum antimicrobials were major causes for inappropriate antimicrobial use in CCRT patients. Our findings highlight the necessity of urgent implementation of an antimicrobial stewardship program, including training and auditing of antimicrobial prescriptions.