

Presentation Type:

Poster Presentation

Save Carbapenem Campaign: Assessment of Antibiotic Combinations Against Multidrug-Resistant Gram-Negative Bacilli
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Background: Infections caused by multidrug-resistant gram-negative bacilli (MDR GNB) are a therapeutic challenge to clinicians. Combination antimicrobial therapy with empirically selected antibiotics is often used to treat these infections. This approach is ill advised because the antibiotics selected may not be optimal because of different killing activity. We aimed to determine the in vitro efficacy of antibiotic combinations devoid of carbapenems to explore potential synergy between antibiotics of different chemical classes. **Methods:** Prospective, experimental descriptive study of 85 MDR GNB isolated from clinical samples. The minimum inhibitory concentrations (MICs) of ceftazidime, amikacin, imipenem, and ciprofloxacin were determined by broth microdilution. The in-vitro effects of CAZ-AMK, CAZ-CIPRO, IMP-AMK and IMP-CIPRO combinations were studied by checker-board assay. **Results:** ESBL, AmpC, and MBL production was observed among 62.35%, 27.05%, and 44.70% of the MDR GNB, respectively. Moreover, 27.05% coproduced multiple β -lactamases. The MIC₉₀ ranges were 16 to ≥ 1028 $\mu\text{g}/\text{mL}$ for CAZ; 0.25 to ≥ 256 $\mu\text{g}/\text{mL}$ for Amk, 0.25 to 12 $\mu\text{g}/\text{mL}$ for CIPRO; and 0.125 to 512 $\mu\text{g}/\text{mL}$ for IMP. CAZ-AMK and IMP-AMK combinations showed synergistic effects in $>85\%$ of MDR-GNB, with a fractional inhibitory concentration index ≤ 0.5 . Higher rates of indifference and antagonism were observed with combinations including

fluroquinolones. **Conclusions:** The in vitro antimicrobial activity of antibiotic combinations having third- or fourth-generation cephalosporin with aminoglycosides was comparable to that of imipenem alone or in combination therapy. Combinations devoid of carbapenems should be advocated to prolong the clinical usefulness of this antibiotic group

Funding: None**Disclosures:** None

Doi:10.1017/ice.2020.1015

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Scenario-Based, Interactive Infection Prevention and Control and Bloodborne Pathogen Education

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Background: Infection prevention and control (IPAC) and bloodborne pathogen (BBP) education are required for all healthcare workers at least annually by the Occupational Safety and Health Administration and The Joint Commission. An inventory in 2016 at a large health system with $>60,000$ employees identified 46 different training modules used to fulfill this regulatory mandate. **Objective:** Using quality improvement tools and management, we sought to reduce duplication of effort, to enhance education, and to improve employee engagement. **Methods:** A multidisciplinary team that included IPAC, physician, nursing, educational design and occupational safety was formed. The team reviewed regulatory standards, cross checked site-specific practices, and identified gaps in the current



Fig. 1.