WCK 5222 (Cefepime-Zidebactam) Antimicrobial Activity Tested against Gram-negative Organisms Producing Clinically Relevant β-Lactamas

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Background: Zidebactam is a new cephalosporin with a dual mechanism of action involving binding to Gram-negative (LpxC) and Gram-positive (PBP2a) bacteria. Zidebactam (ZID) combined with FEP is used in clinical development. Methods: MIC and E-tests were performed using the CLSI broth microdilution method against 36 clinical isolates of Gram-negative organisms producing different classes of β-lactamas. Results: ZID alone showed limited activity against isolates of P. aeruginosa producing VEB and IMP, the most frequent β-lactamases. Clinical relevant activities against Isolates of E. coli, Klebsiella pneumoniae, Citrobacter freundii, A. baumannii, and S. marcescens were observed (Table 1). ZID showed activity against these isolates when combined with FEP (2:1) (Table 2); ZID 1:1 ratio was slightly higher (two fold more active than FEP 2:1) against ZID and FEP alone. Furthermore, the in vitro activity of ZID alone was similar or slightly lower (two fold less than FEP) against IMP and VEB producing isolates. Conclusions: A. baumannii (2:1), A. baumannii (1:1), and S. marcescens (1:1) were not tested against wild type (type)-susceptible Enterobacteriaceae strains.