Antimicrobial Activity of BAL30072, Alone and in Combination with Meropenem Tested Against Gram-Negative Bacteria Causing Serious Infections from China, India, Latin America and Southeast Asia-Pacific

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ABSTRACT

Background: BAL30072 (BAL), a novel late-stage clinical siderophore monosulfactam, is currently in Phase I clinical testing. BAL30072 belongs to a new class of siderophores and has shown in vitro activity against non-fermentative Gram-negative bacilli. Similar to aztreonam, BAL30072 is stable to β-lactamases and acts as an acylase inhibitor of class C β-lactamases. BAL30072 appears to be in clinical development for its activity against a broad range of Gram-negative pathogenic bacteria, including multiple-resistant Achromobacter baumannii.

Methods: BAL, MER, BAL+MER and comparator agents were tested against pathogens isolated from medical centers in China, India, Latin America (LA, 508/15), South Africa (SA, 1), and Southeast Asia-Pacific: BAL alone was active against ENT species (MIC50/90, ≤0.015/0.03 μg/ml) but better than MER (MIC50/90, >32/>32 μg/ml). BAL30072/meropenem was the most active combination against pathogens isolated from medical centers located in selected geographic regions.

Materials and Methods: A total of 57 medical centers were included: 11 sites in China, 13 sites in Latin America (LA, 508/15) and Southeast Asia-Pacific, 14 sites in Southeast Asia and South Africa (South Africa, 52/1), 15 sites in South Africa and South Asia, India (3), 5 sites in the Middle East, 5 sites in Latin America (LA, 508/15) and Southeast Asia-Pacific. Microdilution method as described in the CLSI M07-A9 (2012) with meropenem (1:1 ratio) and comparator agents by the broth microdilution method as described in the CLSI M07-A9 (2012). The susceptibility status of isolates was determined (MIC50/90, ≤0.06/≤0.5 μg/ml). The CLSI breakpoint was used for β-lactams.

Results: BAL was active against ENT species (MIC50/90, ≤0.015/0.03 μg/ml) but better than MER (MIC50/90, >32/>32 μg/ml). BAL30072/meropenem was the most active combination against pathogens isolated from medical centers located in selected geographic regions.

Discussion: BAL30072 was very active against Enterobacteriaceae species with MIC50/90 values of ≤0.015/0.03 μg/ml. BAL30072/meropenem was the most active combination against pathogens isolated from medical centers located in selected geographic regions.

Conclusions: BAL30072 was very active against ENT species with MIC50/90 values of ≤0.015/0.03 μg/ml. BAL30072/meropenem was the most active combination against pathogens isolated from medical centers located in selected geographic regions.