

## POSTER ABSTRACTS

**257. In Vitro Activity of Meropenem/RPX7009, a Carbapenem/ $\beta$ -lactamase Inhibitor Combination Tested Against Contemporary Populations of Enterobacteriaceae and KPC-producing Strains**

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**Session:** 40. Antimicrobial Resistance: Novel Agents and Approaches to Gram Negative Infections

Thursday, October 9, 2014: 12:30 PM

**Background.** We evaluated the activity of meropenem (MER)  $\pm$  RPX7009 (RPX), a serine- $\beta$ -lactamase inhibitor (BLI) tested against contemporary isolates of Enterobacteriaceae (ENT), including KPC-producing isolates.

**Methods.** 100 ENT clinical isolates collected during 2012-2013 were tested against MER  $\pm$  RPX at fixed 4 and 8  $\mu$ g/mL using CLSI reference broth microdilution methods. Additionally, 100 KPC-producing ENT were tested.

**Results.** Against all 200 ENT, MER/RPX displayed MIC<sub>50/90</sub> of  $\leq 0.25/1$  and  $\leq 0.25/0.5$   $\mu$ g/mL at fixed 4 and 8  $\mu$ g/mL, respectively when compared to MIC<sub>50/90</sub>  $\leq 0.25/ > 8$   $\mu$ g/mL for MER alone (Table). Overall, 91.5/95.5% and 96.0/99.0% of ENT were inhibited at  $\leq 1/ \leq 4$   $\mu$ g/mL of MER in the presence of 4 or 8  $\mu$ g/mL of RPX, respectively. MER/RPX at fixed 4 and 8  $\mu$ g/mL, inhibited 80.3 and 90.8%, respectively of the *K. pneumoniae* (n = 76) isolates at  $\leq 1$   $\mu$ g/mL (MER CLSI susceptible breakpoint), whereas MER inhibited only 21.1% at the same MIC. Only 32.0% of *E. cloacae* isolates (n = 25) were inhibited at 1  $\mu$ g/mL of MER, but 96.0% of these

isolates were inhibited by MER/RPX (at the same MIC Value) for 4 and 8  $\mu$ g/mL. All *E. coli* (n = 38), *Serratia* spp. (n = 12) and indole-positive Proteae (n = 11) isolates were inhibited by  $\leq 0.25$   $\mu$ g/mL of MER/RPX at fixed 4 or 8  $\mu$ g/mL. MER/RPX inhibited 83.0 and 91.0% and 92 and 98 % of the KPC-producers at  $\leq 1$  and  $\leq 4$   $\mu$ g/mL of MER for both BLI concentrations, compared to only 3.0% or 24.0% for MER alone, respectively.

**Conclusion.** These results demonstrate that MER/RPX is a good candidate for further development that could increase the treatment options against serious infections, including those caused by KPC-producers that are often resistant to most antimicrobial agents.

Organism (no. tested)	Antimicrobial agent <sup>a</sup>	Cumulative % inhibited at MIC ( $\mu$ g/mL) <sup>b</sup> :					
		$\leq 0.25$	0.5	1	2	4	8
ENT (200)	MER	50.0	50.5	51.5	54.5	62.0	71.0
	MER/RPX 4	87.0	89.0	<b>91.5</b>	94.0	96.0	98.0
	MER/RPX 8	89.5	<b>92.5</b>	95.5	98.5	99.0	99.0
<i>K. pneumoniae</i> (76)	MER	19.7	21.1	21.1	22.4	25.0	36.8
	MER/RPX 4	69.7	72.4	73.7	75.0	77.6	85.5
	MER/RPX 8	72.4	75.0	80.3	85.5	89.5	<b>94.7</b>
KPC-producers (100)	MER	0.0	1.0	3.0	9.0	24.0	42.0
	MER/RPX 4	74.0	78.0	83.0	88.0	<b>92.0</b>	96.0
	MER/RPX 8	79.0	85.0	<b>91.0</b>	97.0	98.0	98.0

a. MER/RPX=meropenem/RPX7009; 4=at fixed 4  $\mu$ g/mL; 8=at fixed 4  $\mu$ g/mLb. MIC<sub>90</sub> are bolded

**Disclosures.** M. Castanheira, Rempex Pharmaceuticals: Grant Investigator, Research grant P. R. Rhomberg, Rempex Pharmaceuticals: Grant Investigator, Research grant A. Watters, Rempex Pharmaceuticals: Grant Investigator, Research grant R. N. Jones, Rempex Pharmaceuticals: Grant Investigator, Research grant