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Abstract (poster session)

Activity of ceftobiprole tested against clinical isolates of staphylococci and streptococci from European surveillance (2008-2010)

R.K. Flamm*, H.S. Sader, J.M. Streit, R.N. Jones (North Liberty, US)

Objective: To monitor the spectrum and potency of ceftobiprole (BPR), the microbiologically active component of ceftobiprole medocaril was susceptibility (S) tested against staphylococci and streptococci from throughout Europe. Ceftobiprole medocaril is a broad-spectrum, anti-MRSA cephalosporin with activity against Gram-negative pathogens including Pseudomonas aeruginosa. It has been studied in hospitalized community-acquired bacterial pneumonia, hospital-acquired bacterial pneumonia, and acute bacterial skin and skin structure infections. Methods: More than 19,000 clinically relevant isolates of Staphylococcus aureus (SA), coagulase-negative-staphylococci (CoNS), Enterococcus spp. (ESP), Beta-haemolytic streptococci (BHS), S. pneumoniae (SPN), and viridans group streptococci (VGS) were prospectively collected from 33 Europe medical centres (2008-2010). S profiles for BPR and comparator agents were generated using the CLSI broth microdilution method. Interpretations were as published in CLSI and EUCAST guidelines. Results: BPR was highly potent against SA overall with a MIC range of <=0.06-4 mg/L and MIC50/90 at 0.5/1 mg/L. 99.7% of all SA were inhibited at <= 2mg/L. BPR was two- to four-fold more active against MSSA (MIC50/90 at 0.5/0.5 mg/L) than MRSA (MIC50/90 at 1/2 mg/L). Against MSSA, BPR was eight-fold more active than ceftriaxone. BPR was also highly active against CoNS with a MIC50/90 for methicillin-susceptible and-resistant CoNS of 0.12/0.25 and 1/2 mg/L, respectively. BPR was more active against E. faecalis (MIC50/90 at 0.5/4 mg/L) than E. faecium (MIC50/90 at >8/>8 mg/L). Potent activity was demonstrated against BHS and VGS with MIC50/90 values of <=0.06/<=0.06 and <=0.06/0.25 mg/L, respectively. BPR was highly active against penicillin-resistant (Pen-R; MIC >= 2 mg/L) and –intermediate (Pen-I; MIC 0.12-1 mg/L) SPN with a MIC50/90 at 0.5/0.5 and <=0.06/0.25 mg/L, respectively; BPR MICs were lower against Pen-S isolates. BPR was at least two-fold more active than ceftriaxone (MIC50/90, <=0.25/1 mg/L) and cefepime (MIC50/90, <=0.12/1 mg/L). 38.0% of Pen-R SPN strains and 6.9% of all SPN were non-S to ceftriaxone. Conclusions: BPR demonstrated potent activity against clinically relevant isolates of staphylococcal streptococcal, and enterococcal species from European patients. Importantly, BPR was also active against strains resistant to other commonly used antibiotics, such as MRSA and penicillin- and ceftriaxone-resistant pneumococci.

Organism (No.)	cumulative % inhibited at ceftobiprole MIC (mg/L) of:								$MIC_{50/90}$
	<= 0.06	0.12	0.25	0.5	1	2	4	>=8	
S. aureus (8271)	0.2	0.9	35.7	76.4	92.2	99.7	100.0	--	0.5/1
MRSA (2,172)	--	--	0.3	11.3	70.5	98.7	100.0		1/2
CoNS (2,617)	3.2	13.8	25.4	42.5	76.4	92.2	100.0	--	1/2
MRCoNS (2,032)	0.7	1.7	5.0	26.1	69.6	90.0	100.0		1/2
Enterococcus spp. (3489)	0.5	8.1	21.6	42.1	47.5	56.5	63.7	100.0	2/>8
E. faecalis (2142)	0.7	12.7	34.3	66.2	74.0	86.2	96.6	100.0	0.5/4
E. faecium (1243)	0.0	0.4	0.6	0.7	1.1	3.9	6.0	100.0	>8/>8
Beta-haem strep (1822)	99.2	100.0	100.0	--	--	--	--	--	<=0.06/<=0.06
S. pneumoniae (2387)	76.9	79.1	84.7	99.0	99.8	100.0	--	--	<=0.06/0.5
Penicillin-intermediate (254)	52.4	67.3	92.9	100.0					<=0.06/0.25
Penicillin-resistant (416)	0.2	0.2	16.3	94.0	98.8	100.0			0.5/0.5
Viridans gr streptococci (662)	69.0	87.3	93.4	95.5	97.1	98.8	99.5	100.0	<=0.06/0.25