P1531

Abstract (poster session)

Susceptibilities of Gram-negative pathogens from hospitalised patients to colistin and fosfomycin in Germany, 2010

M. Kresken*, B. Körber-Irrgang, D. Hafner on behalf of the Working Party

Objectives: The treatment of infectious diseases caused by Gram-negative bacteria (GNB) has increasingly been threatened by the emergence and dissemination of multidrug resistant [MDR] strains. Colistin (COL) and fosfomycin (FOS) have been shown to be effective against MDR GNB. The objective of this study was to evaluate the susceptibilities (S) of clinical isolates of Enterobacter spp. (ENS), Escherichia coli (ECO), Klebsiella oxytoca (KOX), K. pneumoniae (KPN), Proteus mirabilis (PMI), Pseudomonas aeruginosa (PAE) and the Acinetobacter-baumannii-group (ABA) to COL, FOS and comparators. Methods: A total of 1,888 isolates were prospectively collected from 21 laboratories across Germany, which participated in the surveillance study conducted by the Paul-Ehrlich-Society in 2010. MICs of COL, FOS, ciprofloxacin (CIP), ceftazidime (CAZ), gentamicin (GEN) and meropenem (MEM) were determined by the microdilution method according to the standard ISO 20776-1 and interpreted by EUCAST species-related clinical breakpoints, if applicable. The CLSI MIC method was employed as screening test for ESBL-producing isolates. Results: Isolates were primarily recovered from wounds (23%), respiratory specimens (20%) and urine (19%). There were 544 ICU isolates and 1,344 non-ICU isolates. Of the ECO, KPN, KOX and PMI isolates, 18%, 17%, 14% and <1% showed an ESBL-phenotype. 4 KPN (2%) harboured a carbapenemase. MIC-50/90 values are displayed in the Table. Of the ECO isolates, 100% were S to COL and 99% to FOS, while 100% were S to MEM, 89% to GEN and 65% to CIP. S rates of ENS were 91% for COL and 62% for FOS compared to 68%, 91%, 97%, and >99% for CAZ, CIP, GEN and MEM, respectively. Among KPN and KOX, S rates were 98-100% and 78-82% for COL and FOS, respectively, and 78-88%, 89-97% and 98-100% for CIP, GEN and MEM, respectively. COL was not active against PMI, as expected. S in PMI to FOS was 81%, while S rates for MEM, GEN, and CIP were 100%, 87%, and 80%, respectively. COL was the most active drug against ABA and PAE, with S rates of >99% and 100%, respectively. For ABA, S of comparators varied between 79% (CIP) and 89% (MEM), and for PAE between 73% (CIP) and 91% (GEN). 10% and 3.5% of the ABA and PAE isolates, respectively, harboured a carbapenemase. Conclusion: S to COL was high (90%) among all GNB, except PMI, while S to FOS was seen in 99% of ECO and ca. 80% of the other enterobacterial isolates. Both drugs may thus play role as therapeutic options against MDR GNB.

Table: MIC-50/90 values of COL and FOS (mg/L)

Species / group (n)	COL		FOS	
	MIC-50	MIC-90	MIC-50	MIC-90
Enterobacter spp. (231)	≤1	2	32	≥256
Escherichia coli (465)	≤1	≤1	≤1	8
Klebsiella oxytoca (117)	≤1	≤1	16	128
Klebsiella pneumoniae (240)	≤1	≤1	16	64
Proteus mirabilis (128)	≥16	≥16	8	128
Acinetobacter-baumannii-group (167)	≤1	≤1	128	128
Pseudomonas aeruginosa (540)	≤1	≤1	128	≥256