P0805
Poster Session III
C. difficile: antimicrobial susceptibility and treatment

IN VITRO ACTIVITY OF SUROTOMYCIN (FORMERLY CB-183,315) AGAINST 126 CLINICAL ISOLATES OF CLOSTRIDIUM DIFFICILE

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Objectives. The objective of the present study was to assess the antimicrobial susceptibility of *C. difficile* strains isolated in a period of time spanning from 2005 to 2013 to surotomycin, metronidazole, vancomycin, rifampin, clindamycin and fidaxomixin.

Methods. One hundred and sixteen epidemiologically unrelated and non repetitive toxigenic strains of *C. difficile* isolated from patients with *C. difficile* infection (CDI) were selected in order to be representative of the genotypes circulating in France. In addition, 10 non-toxigenic isolates with decreased susceptibility to metronidazole were also included. Strains were characterized by PCR ribotyping and susceptibility testing was performed by agar dilution method following CLSI recommendations. *Clostridium difficile* ATCC 700057, *Bacteroides thetaiotamicron* ATCC 29741, *Eubacterium lentum* ATCC 43055 were used as QC strains.

Results. Toxigenic strains of *C. difficile* belonged to the following PCR-ribotypes: 014/020/077 (n=14), 078/126 (n=12), 027 (n=12), 002 (n=11), 015 (n=10), 005 (n=10), 023 (n=10), 001 (=10), 003 (n=10), 017 (n=10), and 106 (n=7). All isolates with decreased susceptibility to metronidazole were from PCR-ribotype 010.

MIC_{50}, MIC_{90} and MIC range of each antimicrobial agent were as follows:

Antimicrobial agent	MIC_{50} (µg/mL)	MIC_{90} (µg/mL)	Range (µg/mL)
Metronidazole	0,5	1	0,062 – 8
Vancomycin	0.25	1	0,062 – 2
Surotomycin	0.5	1	0,125 – 2
Fidaxomicin	0.5	0.5	0,062 – 1
Rifampin	≤0,002	0,0078	≤0,002 - ≥32
Clindamycin	≥256	≥256	8- ≥256

All clinical toxigenic *C. difficile* isolates, were highly susceptible to surotomycin and the MIC distribution was unimodal. Isolates belonging to PCR-ribotypes 106 and 078 had two to four folds higher surotomycin MIC_{90} values than isolates belonging to ribotypes 017 and 023. Overall, 1.8 % of isolates exhibited a decreased susceptibility to metronidazole(MIC >2 µg/mL), all from ribotypes 027 or 001. All isolates were resistant to clindamycin and 3.7% were resistant to rifampin (from ribotypes 001 and 017).
Non toxigenic isolates with reduced susceptibility to metroninazole had MICs ranging from 4 to 16 µg/mL. The activity of surotomycin against these isolates was the same as against any of the other isolates tested with a MIC_{50} and a MIC_{90} of 0.5 µg/ml and 1 µg/ml, respectively.

Conclusion. There was no evidence of *in vitro* resistance of *Clostridium difficile* to surotomycin tested against 116 clinical isolates in this study. Surotomycin maintained low MICs (including on strains with decreased susceptibility to metronidazole) regardless of the PCR-ribotype.