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Susceptibility among pathogens isolated from complicated skin and skin-structure infections in Europe; TEST programme 2014-2016

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Background: Complicated skin and skin-structure infections (cSSSI) including diabetic foot, surgical site infections, deep soft tissue abscesses and cellulitis are difficult to manage therapeutically. Active antimicrobial agents are required to treat these infections which may be polymicrobial in some cases. Tigecycline (TGC) and other broad spectrum agents may be useful in cSSSI and continued monitoring of susceptibility rates to commonly used antimicrobials is critical. The TEST (Tigecycline European Surveillance Study) program has provided surveillance on SSSI over the last 12 years in European (EU) hospitals.

Material/methods: The TEST program 2014-2016 tested 7630 isolates of gram-positive (GP) and – negative (GN) isolates from species listed in the table. These were collected from patients with SSSI in EU hospitals. Susceptibility was determined against TGC and comparators locally using supplied broth micro dilution panels following CLSI guidelines and applying EUCAST breakpoint criteria. Phenotypic confirmation testing according to CLSI was performed to confirm ESBL-producing isolates at a central laboratory.

Results: In this collection, the MRSA rate was 29.3%, the VRE rate was 4.3% and ESBL rates were 14.8% and 24.0% for *E. coli* and *K. pneumoniae*, respectively.

Organism (n)	Antimicrobial ^a : % Susceptible							
	AMK	AMC	CRO	LVX	MEM	TZP	TGC	VAN
<i>S. aureus</i> , MSSA (1530)	na	na	na	89.9	na	na	100	100

<i>S. aureus</i> , MRSA (635)	na	na	na	21.6	na	na	100	100
<i>Enterococcus spp.</i> (733)	na	72.9	na	56.1	na	na	99.6	94.0
<i>S. agalactiae</i> (461)	na	na	na	95.4	na	na	95.0	100
<i>E. coli</i> (974)	97.7	32	77.5	65.5	99.7	90.5	99.5	na
<i>K. pneumoniae</i> (599)	92.0	3.5	58.6	65.3	89.5	67.3	82.6	na
<i>Enterobacter spp.</i> (1195)	98.5	6.5	68.4	91.6	98.7	78.7	93.6	na
<i>Serratia spp.</i> (453)	99.1	11.3	85.9	93.2	99.6	94.0	81.7	na
<i>P. aeruginosa</i> (1050)	92.0	na	na	61.2	74.2	81.6	na	na

^aAMK=amikacin, AMC=ampicillin, CRO=ceftriaxone, LVX=levofloxacin, MEM=meropenem, TZP=piperacillin-tazobactam, TGC=tigecycline, VAN=vancomycin. na =no breakpoints.

Conclusions: Among this large collection of EU SSSI isolates, *S. aureus* was the most common GP species and *Enterobacter spp.* were the most common GN pathogens. Susceptibility to TGC among all of the isolates in this study ranged from 81-100% using EUCAST breakpoint criteria. Considering that cSSSI is a very common cause of morbidity, diligent efforts are needed to monitor antimicrobial agents used in the treatment of these infections.