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A six-year study of non-ICU patients' *Staphylococcus epidermidis* resistance profile against glycopeptides, oxazolidinones and glycylcyclines in a Greek tertiary hospital

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Objectives: *Staphylococcus epidermidis* is the most often isolated species of coagulase negative staphylococci (CNS) which are recognized as one of the often causes of nosocomial infections. In this study we aimed to study the resistance profile of *S. epidermidis* isolates against last line antibiotics (vancomycin [VA], teicoplanin [TEC], linezolid [LZ] and daptomycin [DPT]) for treating CNS infections, during an eight year period.
Methods: From January 2007 till December 2012 we examined n= 445 non duplicated *S. epidermidis* isolates recovered from blood cultures of equal numbered non-ICU patients hospitalized in the medical n_1=140 and the surgical ward n_2=305 of our hospital. Species identification and susceptibility testing were performed using the automated VITEK II system (Biomerieux). Additionally we used the E-test method (Biomerieux, ABI-Biodisk) in order to confirm some isolation resistances against VA, TEC and LZ found by the VITEK II system and to estimate the MIC levels of DPT. Mueller-Hinton agar adjusted to contain physiologic levels of free calcium ions (50μg/mL) was used when testing DPT susceptibility. Isolates with MIC>4 mg/L were considered resistant to VA, TEC and LZ and those with MIC<1 mg/L susceptible to DPT, according to the MIC breakpoints determined by CLSI and EUCAST, respectively.
Results: The percentage resistance rate of the examined *S. epidermidis* isolates is shown in the following table. In the last year of the study period resistance to VA (MIC=16 mg/L) was emerged by two *S. epidermidis* isolates resistant to TEC (MIC=32 mg/L), as well. Methicillin resistance was observed with an overall prevalence of c.a. 84,6%. All the resistant isolates to VA, TEC and LZ were resistant to methicillin, too.
Conclusion: The examined *S. epidermidis* isolates present a scattered resistance to TEC and show a remarkable continuing increase of resistance to LZ during the study period. These findings with the first found two *S. epidermidis* isolates resistant to the both glycopeptides, enforced the necessity to take the appropriate measures in the hospital environment and during the clinical practice to limit the dissemination and the amplification of these resistances. DPT possesses eses an excellent *in vitro* activity against *S. epidermidis* isolates and it could be a very good alternative solution for treating infections caused by this species.

	2007	2008	2009	2010	2011	2012
	n=59	*n=69*	*n=79*	*n=102*	*n=78*	*n=58*
VA	0	0	0	0	0	3,4
TEC	0	1,4	0	0	0	3,4
LZ	0	0	1,3	5,2	6,6	12,5
DPT	no tested	0	0	0	0	0