



Colistin AST

Something to chew on!

Status quo

1. Increasing use of colistin due to increasing pan-resistance amongst NFs.
2. Pharmacological issues still abound, but $fAUC/MIC$ probably best Pd parameter. (Dudhani et al 2010)
3. Current AST based on CLSI criteria which means that disk diffusion should not be done for *A. baumannii* isolates.
4. EUCAST recommends MIC methods only for *P. aeruginosa* & *A. baumannii*.

AST methods- MIC

1. Automated systems

1. Vitek: 0.5 – 16mg/L
2. MicroScan: Breakpoint readings of 2 & 4mg/L

2. Etest

1. Relies on diffusion of antibiotic into the medium.

256
192
128
96
64
48
32
24
16
12
8
6
4
3
2
1.5
1.0
.75
.50
.38
.25
.19
.125
.094
.064
.047
.032



128
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EXB: 05
KOBТИИИ ПЭЛЛЭИИ
СИНЕРГЕИИ

Current MIC data

Comparative evaluation of *A. baumannii* MICs using different AST methodologies

MIC Analysis	Etest		Mscan	Vitek		BMD
	Jhb	CT	Jhb	CT	Jhb	
MIC50	1	0.5	2	1	0.25	
MIC90	2	8	4	2	1	

EA = 26.3%

Comparative evaluation of *P. aeruginosa* MICs using different AST methodologies

MIC Analysis	Etest		Mscan	Vitek		BMD
	Jhb	CT	Jhb	CT	Jhb	
MIC50	4	4	2	2	1	
MIC90	8	4	2	2	1	

EA = 20.8%

ME = 20.8%

mE = 54.2%

<u>Reference</u>	<u>Comparative AST</u>	<u>Organisms</u>	<u>Findings/ Conclusions</u>	<u>Limitations</u>
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Tan 2006	Agar dilution vs 3 methods DD	GNBs	DD unreliable	
Goldstein 2007	Agar dilution vs Etest	GNBs	Trend lower MICs by Etest Strongly recommend colistin MIC by Etest	58.3% VME Pseudo
Tan 2007	Agar dilution vs Etest vs Vitek	GNBs	CA = 87% (Etest); 82% (Vitek) 83% errors Pseudo 75% Enterobacter resistant Vitek2 unreliable colistin R Etest results require confirmation by std MIC method	No R A.baumannii EUCAST brkpts
Galani 2008	Etest vs DD	GNBs	DD unreliable	No reference
Sinirtas 2009	Etest vs DD	GNBs	No conclusion	No reference
Arroyo 2005	BMD vs Etest	<i>A. baumannii</i>	Good categorical agreement Discrepancies at high & low MICs Recommend Etest confirmed by dilution method	
Lo-Ten-Foe 2007	7 different methods BMD reference	GNBs	DD unreliable Etest, agar, Vitek good agreement	Screening cultures in an SDD study
	Etest & agar dilution x2	10 Pseudo 7 A. baum	HeteroR in Enterobacter & A.baum Vitek unreliable to detect heteroR	EA with Etest only 52 -57%
vd Heijden 2007	BMD vs Etest vs DD	P. aeruginosa (carbapenem R) BSI	Good categorical agreement both methods No resistant isolates thus recommend confirmation with reference method	Very selected group of isolates 29% isolates a single clone

Time to Ruminare

1. Should we be using Etests to confirm colistin MICs?
2. CA appears good so is it necessary to determine MICs?
3. Should we be monitoring colistin MICs by a reference method (surveillance)?