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MIC (ESBLs)

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MIC

MIC

:

MIC ESBLs

MIC

CLSI

ESBLs

$\mu\text{m}/\text{ml}$

$\mu\text{m}/\text{ml}$

MIC

MIC

ESBL

(n=) / ESBLs

:

ESBLs

(n=) /

(n=) /

MIC

MIC

MIC

/

ESBLs

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*ESBLs**ESBLs**ESBLs*:

CLSI

ESBLs

(ESBL)

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ESBLs .()

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ESBLs

ESBL

MIC

MIC

ESBL

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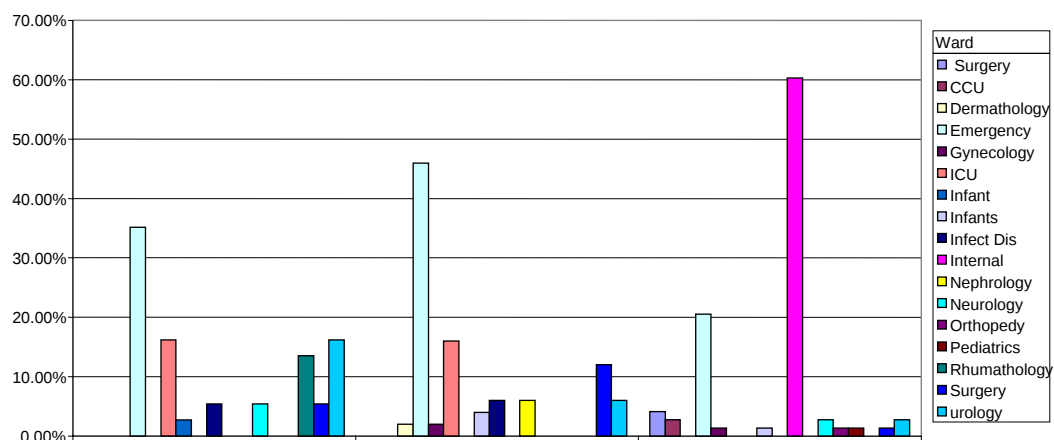
.()

ESBLs

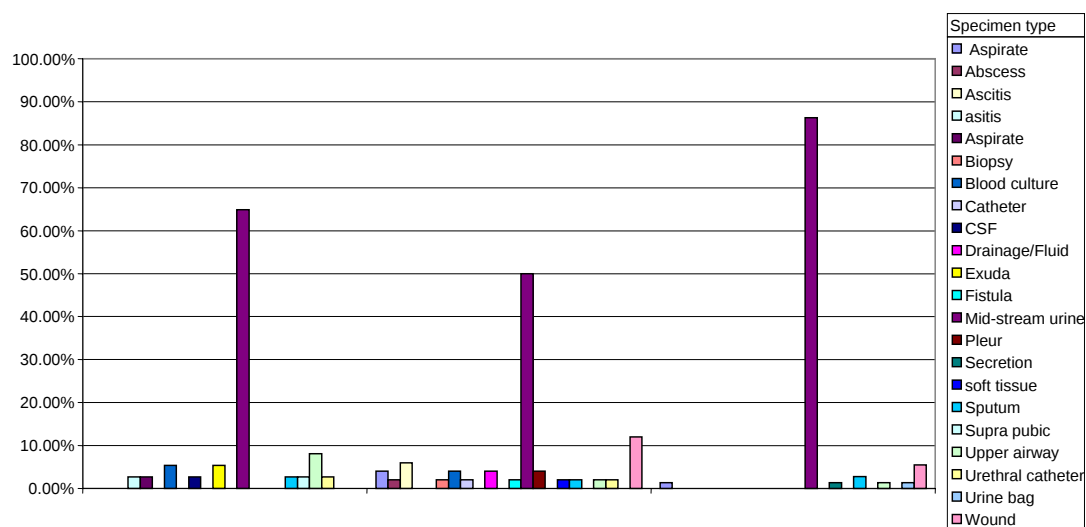
ESBLs

/			
°C			
)	(	(ESBLs)	
MIC			
MIC		() (CLSI)	
μm/ml		)	(
ESBLs			
	()		
ESBL		/	
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			°C
μg/ml			
MIC		°C _ °C	
ESBL	MIC	/ / / / / / /	
	()	)	(
()	)	/	
(		/	
ICU		<i>Klebsiella pneumonia</i> (ATCC 700603)	
		<i>E.coli</i> (ATCC 25922)	

(n=) .

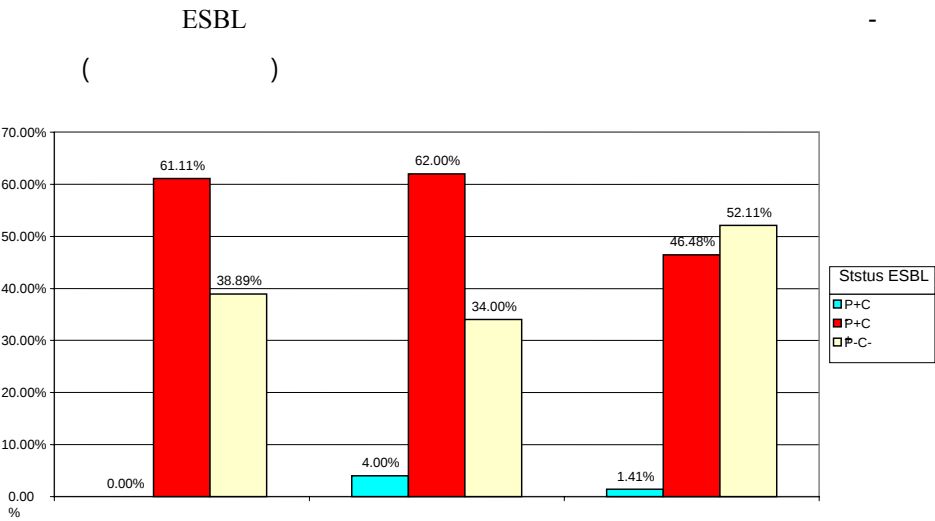
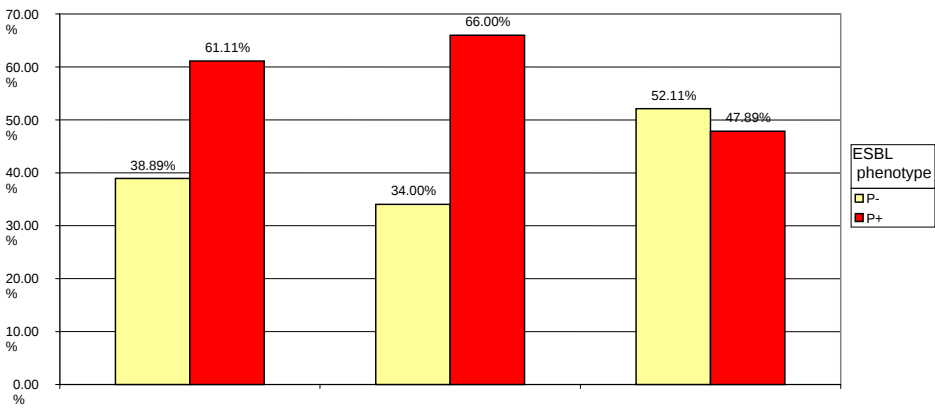


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()

(n=)
MIC /
(P⁺C⁻) (n=)
ESBL ESBL
ESBL *E.coli* ESBL
(/) / ESBL
E.coli (n=)
(P⁺C⁺)



ESBL -
()

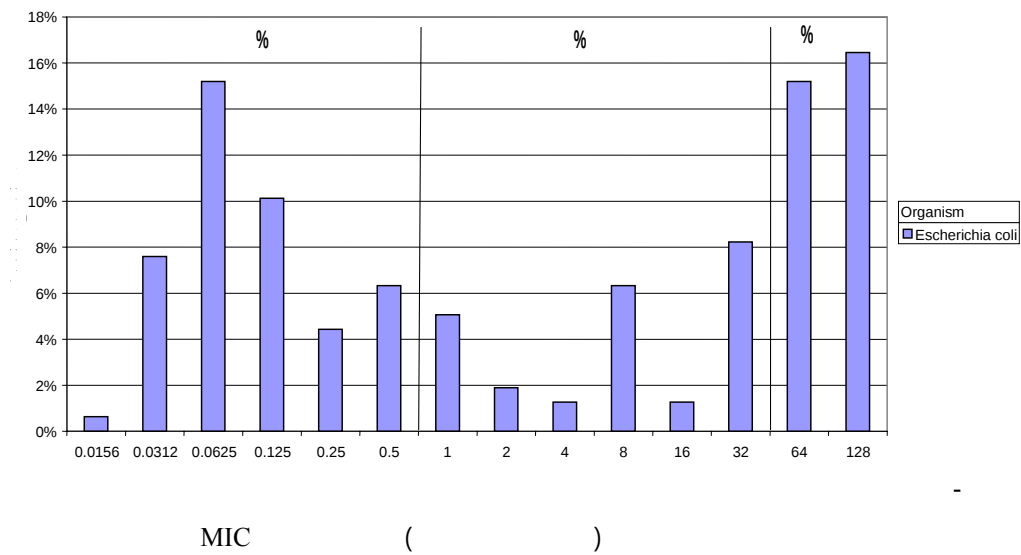
MIC ()



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ESBL

(ESBLs)

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ESBL ()

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(ESBLs)

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ESBL

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(n=) / ESBLs

ESBL

/

CT E-Test DDT

DDT

E-Test % / CT % /

% / ESBLs % / ESBL

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MICs

(n=) / (P⁺C⁻)

MIC

%

mcg/ml

MIC

AmpC

mcg/ml

MIC

AmpC

.()

% %

mcg/ml

MIC

mcg/ml

()

- α -

ESBL

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ESBL

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(Breakpoint)

ESBL

ESBL

ESBLs

MIC

.()

MIC

% /

ESBL

ESBLs

MIC

.()

MIC_≥

%

≥ mcg/ml

≥ mcg/ml

ESBLs

- Cefuroxim in clinical isolates of *Klebsiella pneumoniae* and *Serratia marcescens*. Infection 1983; 11: 315-17.
3. Philippon A, Labia R, Jacoby G. Extended-spectrum beta-lactamases. Antimicrob Agents Chemother 1989; 33: 1131-6.
 4. Lautenbach E, Patel JB, Bilker WB, Edelstein PH, Fishman NO. Extended-spectrum beta-lactamase-producing *Escherichia coli* and *Klebsiella pneumoniae*: risk factors for infection and impact of resistance on outcomes. Clin Infect Dis 2001; 32: 1162-71.
 5. Blondeau JM. Extended-spectrum beta-lactamases. Semin Respir Infect 2001; 16: 169-76.
 6. Clinical and laboratory standards Institute: Performance Standards for Antimicrobial Susceptibility testing: Fifteenth Informational supplement 2005; 25(1): 100-15.
 7. Queenan AM, Foleno B, Gownloy C. Effect of inoculum and β -lactamase activity in AmpC and Extended-spectrum β -lactamases(ESBLs)-producing *Escherichia coli* and *Klebsiella pneumoniae* clinical isolates tested by NCCLS ESBL methodology. J Clin Microbial 2004; 42(1): 269-75.
 8. Pterson DL, Bonomo RA. Extended-spectrum β -lactamases: a clinical update. Clin Microbiol Rev 2005; 18 (4):657-86.
 9. Stobberingh EE, Arends J, Hoogkamp-Korstanje JA, Goessens WH, Visser MR, Buiting AG, et al. Occurrence of extended-spectrum beta-lactamases in Dutch hospitals. Infection 1999; 27: 348-54.
 10. Branger C, Lesimple AL, Bruneu B, Berry, Lambert-Zechovsky N. Long-term investigation of the clonal dissemination of *Klebsiella pneumoniae* isolates producing extended-spectrum beta-lactamases in a university hospital. J Med Microbiol 1998; 47: 209-10.
 11. Bradford PA. Extended-spectrum β -lactamases in the 21st century: characterisation, epidemiology and detection of this important resistance threat. Clin Microbiol Rev 2001; 14 (4): 933-51.
 12. Yagi T, Kruokawa H, Shibata N, Shibayama K, Arakawa Y. A preliminary survey of extended-spectrum β - lactamases in clinical isolates of *Klebsiella pneumoniae* and *Escherichia coli* in Japan. FEMS Microbiol Lett 2000; 184: 53-6.
 13. European Antimicrobial Resistance Surveillance System Annual Report 2005, On-going surveillance of *S.pneumoniae*, *S. aureus*, *E. coli*, *E. faecalis*, *K. pneumoniae* and *P. aeruginosa*, EARSS, Bilthoven, The Netherlands, October 2006.
 14. Shah AA, Hasan F, Ahmad S, Hameed A. Characteristic epidemiology and clinical importance of emerging strains of Gram-negative bacilli producing extended-spectrum β -lactamases. Research in Microbiology 2004; 155: 409-21.
 15. Philipon A, Arlet G, Jacoby AG. Plasmid-determined AmpC-Type β -lactamases. Antimicrob Agents Chemother 2002; 46(1): 1-11.
 16. Bell JM, Chitsaz M, Turnidge JD, Barton M, Walters LJ, Jones RN. Prevalence and significance of a negative extended-spectrum beta-lactamase (ESBL) confirmation test result after a positive ESBL screening test result for isolates of *Escherichia coli* and *Klebsiella pneumoniae*: results from the SENTRY Asia-Pacific Surveillance Program. J Clin Microbiol 2007; 45(5): 1478-82.

18. Mobaiyen H, Nahaei MR, Amirmizafari N, Moaddab SR, Hoseni F. First report of CTX-M type β -lactamases-production in clinical *Escherichia coli* isolates from intensive care units in Tabriz. 1st Iranian Congress of Clinical Microbiology. Shiraz 2007; P: 66.
19. Paterson DL, Ko WC, Von Gottberg A, Casellas JM, Mulazimoglu L, Klugman KP, et al. Outcome of cephalosporin treatment for serious infections due to apparently susceptible organisms producing extended-spectrum beta-lactamases: implications for the clinical microbiology laboratory. J Clin Microbiol 2001; 39: 2206-12.