

# The Second Nationwide Surveillance of Bacterial Urinary Pathogens for Complicated Urinary Tract Infection Conducted by JSC, JAID and JSCM

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## Purpose of the study

In order to investigate trends in the isolation of various bacterial pathogens and the emergence of antimicrobial resistance in these pathogens, the Japanese Society of Chemotherapy (JSC) established the first nationwide surveillance network in 2008.

We attempted to watch the state of trends of them by the second nationwide surveillance conducted by JSC, Japanese Association of Infectious Disease (JAID) and Japanese Society of Clinical Microbiology (JSCM).

## Material and Methods

The survey was conducted during the period from January to September 2011. With the cooperation of 42 medical institutions throughout Japan, a total of 1036 strains belonging to eight clinically relevant bacterial species were collected from adult patients with well-diagnosed complicated urinary tract infections (C-UTIs). Antimicrobial susceptibility testing of the 1008 evaluable to 42 antibacterial agents was conducted at the Central Laboratory of the Research Center for Anti-infective Drugs of the Kitasato Institute, according to recommendations issued by the Clinical and Laboratory Standards Institute (CLSI).

## Bacterial strains

	MRSA	<i>E. faecalis</i>	<i>E. coli</i>	<i>K. oxytoca</i>	<i>K. pneumoniae</i>	<i>P. mirabilis</i>	<i>S. marcescens</i>	<i>P. aeruginosa</i>	Total
Numbers of collected	58	216	390	42	140	60	28	102	1036
Numbers tested	55	214	383	41	133	59	27	93	1005

## Results and conclusions

### MRSA

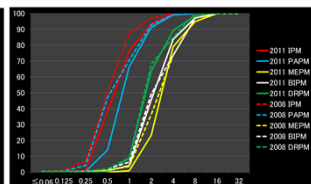
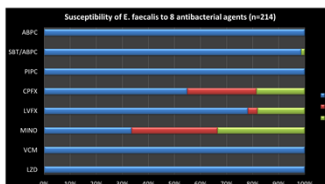
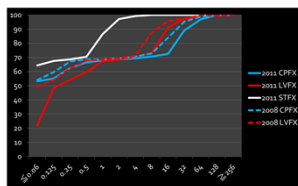
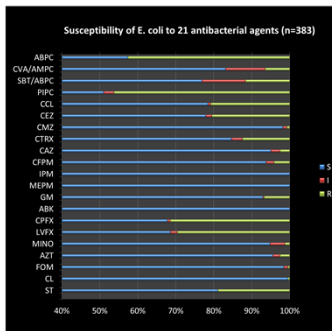
In three strains of 55 MRSA (5.5%), the MIC levels to VCM were 2ng/L. One strain was poor susceptibility to TEIC, which MIC was 8ng/L. One strain was resistant to ABK. No MRSA strain was resistant to VCM, TEIC and LZD.

### Escherichia coli

The susceptible rate of PCs to *E. coli* was about 60%. But the rate of PCs with BLI was about 80~90%. MIC90 of CFPN was >128 in 2011 and 2 in 2008. ESBL-producing strains were 59 of 383(15.4%) in 2011 and 13 of 255(5.1%) in 2008. CMZ and CAZ were relative active. The susceptibility to CTRX was decreased from 94.9% to 84.7%. MIC90 of CPR and LVFX were 30 and 8 in 2011 against 00.125 in 2008. The susceptible rate of CPFX and LVFX were less than 65% in 2011 and the same in 2008. STFX was relative active in FQ.

### Enterococcus faecalis

All of strains were susceptible to ABPC. PIPC and TAZ/PIPC were relative active. The susceptibilities of *E. faecalis* to CBPs were no remarkable change against 2008's strains. IPM and PAMP were better than MEPM, BIPM and DRPM. FQ intermittent strains was increased against 2008's strains. The rate of FQs resistant strain was under 20% and in the decreased tendency. STFX was relative active in FQ. We had no VRE in this study.

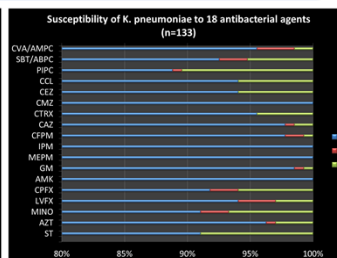
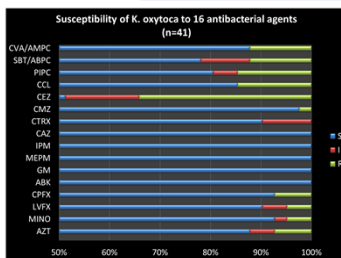


### Klebsiella oxytoca

*K. oxytoca* was relative active to 3-4th CEPs, CBPs, AGs, FQs and TCs, which percentage was more than 90%. ESBL-producing strains were 1 of 41(2.4%) in 2011. Some high-resistant strains was noted in PCs and 1-2th CEPs.

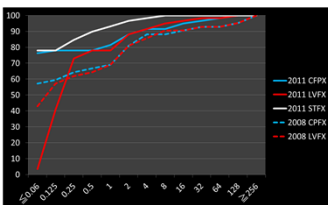
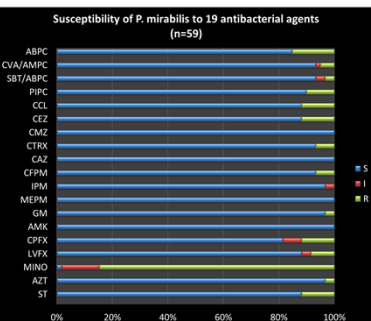
### Klebsiella pneumoniae

*K. pneumoniae* was susceptible to all agents, which percentage was more than 90%. This trend is same as 2008's strains. ESBL-producing strains were 6 of 133(4.5%) in 2011 and 0 in 2008.



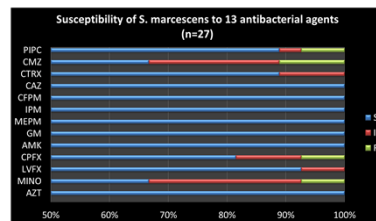
### Proteus mirabilis

*P. mirabilis* was relative active to all agents without MINO, which percentage was more than 80%. This trend is same as 2008's strains. ESBL-producing strains were 4 of 59(6.8%) in 2011 and 5 of 42(11.9%) in 2008. FQs susceptible strains was increased against 2008's strains



### Serratia marcescens

The antimicrobial trend to *S. marcescens* in 2011 was similar to 2008's. No high-resistant strains was noted in FQs in 2011.



### Pseudomonas aeruginosa

More than 10% of all strains were resistant to PIPC and CAZ. DRPM was better susceptible than other CBPs. The susceptibilities of all CBPs were in the decreased tendency. The susceptibilities of FQs were in the increased tendency. STFX was better than other FQs. MDRP were 4 of 93strains (4.3%) in 2011 and 2 of 116(1.7%) in 2008. MBL-produced strains were 6 in 2011 and 1 in 2008.

