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ePoster Viewing
Resistance surveillance & epidemiology: Gram-negatives

Surveillance of the susceptibility of ESBL-producing Escherichia coli and Klebsiella pneumoniae isolated from patients with intra-abdominal infections in China: data from the SMART study 2012-2014

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Background: The epidemiological susceptibility trends and incidence of ESBL-producing *Escherichia coli* (*E. coli*) and *Klebsiella pneumoniae* (*K. pneumoniae*) causing intra-abdominal infections (IAI) were analyzed using data from the Study for Monitoring Antimicrobial Resistance Trends (SMART).

Material/methods: A total of 2,343 *E. coli* strains (887 strains in 2012, 772 strains in 2013 and 684 strains in 2014), which accounted for 17.2%, 15.0% and 13.3%, respectively, of all collected gram-negative bacilli (GNB), and 1.037 *K. pneumoniae* strains (337 in 2012, 381 in 2013 and 319 in 2014) accounting for 6.6%, 7.4% and 6.2%, respectively, of all collected GNB were isolated from patients with IAI from 2012 through 2014 in 21 centers located in 16 Chinese cities. ESBL status and antimicrobial susceptibilities were determined at a central laboratory using CLSI broth microdilution and interpretive standards.

Results: The relative percentage of *E. coli* from IAI GNB isolates showed a decreasing trend. Similarly, ESBL+ *E. coli* isolates also showed a decreasing trend from 67.5% to 58.9% of total *E. coli* isolates from 2012 through 2014. The percentage of *K. pneumoniae* which were ESBL+ also decreased from 2012 through 2014 (40.4% to 26.7%). Susceptibility of ESBL+ *E.Coli* strains were higher than 80% to imipenem (IPM), ertapenem (ETP), amikacin (AMK) and piperacillin-tazobactam (TZP), while ESBL+ *K. pneumoniae* strains were more than 70% susceptible only to ETP, IPM and AMK within three years

Conclusions: IMP, ETP, AMK and piperacillin-tazobactam (TZP) were the most effective antimicrobials against ESBL+ *E. coli* and *K. pneumoniae* isolates from 2012-2014 compared to other common antimicrobial agents, but the activity of TZP was diminished to less than 70% for ESBL+ *K. pneumoniae* strains. The apparent trend of declining percentages of ESBL+ *E. coli* and *K. pneumoniae* is noteworthy and will be monitored closely.

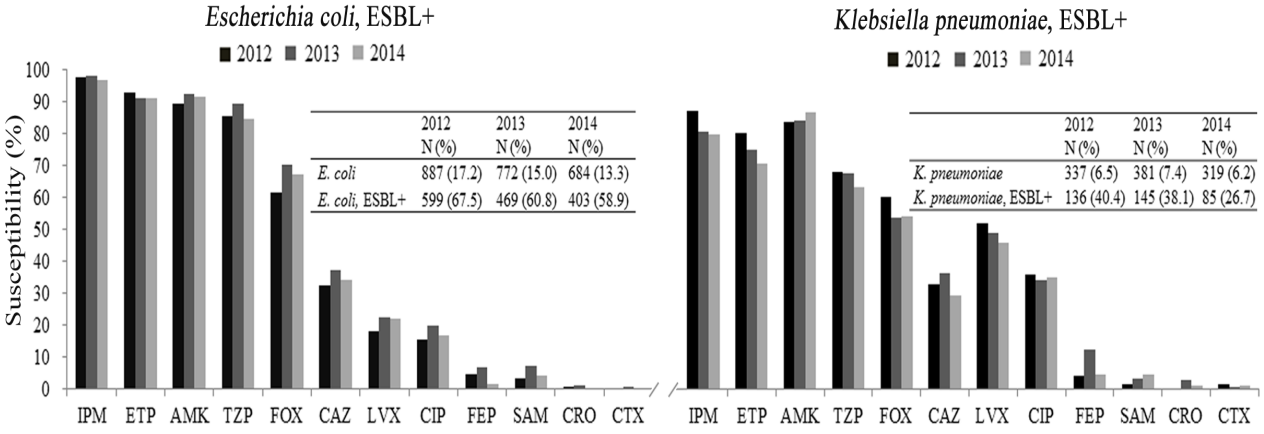

Figure 1. *In vitro* antimicrobial susceptibilities and incidence of ESBL+ *E. coli and K. pneumoniae* causing IAIs from 2012 through 2014.

IPM=imipenem, ETP=ertapenem, AMK:amikacin, TZP=piperacillin-tazobactam, FOX=cefoxitin, CAZ=ceftazidime, LVX=levofloxacin, CIP=ciprofloxacin, FEP=cefepime, SAM=ampicillin-sulbactam, CRO=ceftriaxone, CTX=cefotaxime.