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Abstract (poster session)

**Global trends in frequency and susceptibility of extended-spectrum beta-lactamase positive *E. coli*, *K. pneumoniae*, and *K. oxytoca* isolated from intra-abdominal infections since 2005 – the SMART Study**

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**Objectives:** The Study for Monitoring Antimicrobial Resistance Trends (SMART) program has been monitoring the activity of ertapenem (ETP), amikacin (AK), cefepime (CPE), cefoxitin (CFX), ceftazidime (CAZ), ceftriaxone (CAX), cefotaxime (CFT), ciprofloxacin (CP), imipenem (IMP), levofloxacin (LVX), ampicillin/sulbactam (AS), and piperacillin/tazobactam (PT) against gram-negative bacteria isolated from intra-abdominal infections (IAI) since 2002. This report evaluates changes in frequency of ESBL+ *E. coli* (Ec), *K. pneumoniae* (Kp), and *K. oxytoca* (Ko) since 2005, and their impact on susceptibility levels. **Methods:** 76 (2005) to 155 (2010) labs per year in Asia/Pacific (AP), Latin America (LA), Middle East/Africa (MEA), Europe (EU), and North America (NA) collected 32,605 isolates of Ec/Kp/Ko from IAI. Microdilution minimum inhibitory concentrations (MICs) and extended spectrum beta-lactamase (ESBL) confirmation were done by Clinical and Laboratory Standards Institute (CLSI) methods. % ESBL+ were determined each year, and percent of susceptible strains (%S) to study drugs were compared for ESBL+ vs. ESBL- strains. **Results:** Global % ESBL+ (Ec+Kp+Ko) by year: see table. **Conclusions:** • ESBL+ Ec/Kp/Ko have increased sharply since 2005, with statistically significant trends in Latin America, Middle East/Africa, and Europe and decreased %S to many drugs (incl. CP, LVX). Even the increases in North America (p=0.054) and Asia/Pacific (p=0.06) were almost significant, with the trend in Asia/Pacific being confounded by the availability of isolates from India (where ESBL rates are very high) only in 2007-2009. • ETP and IMP remain the most effective of the study drugs against ESBL+ strains.

Region	2005	2006	2007	2008	2009	2010
AP <sup>1</sup>	23% (782) <sup>2</sup>	27% (1289) <sup>2</sup>	38% (1935)	32% (1871)	35% (2298)	29% (2400) <sup>2</sup>
LA <sup>1</sup>	18% (514)	23% (579)	30% (680)	29% (659)	24% (1175)	33% (1493)
MEA <sup>1</sup>	16% (257)	16% (283)	15% (330)	14% (204)	16% (206)	22% (404)
EU <sup>1</sup>	7% (1635)	8% (1839)	10% (1661)	12% (1938)	12% (2183)	13% (2210)
NA	4% (257)	8% (293)	8% (311)	6% (477)	7% (1240)	8% (1202)

<sup>1</sup> Significant increasing trend (p<0.05, Cochran-Armitage test).

<sup>2</sup> No isolates available from India.