

**Publication****Secular trend and risk factors for antimicrobial resistance in Escherichia coli isolates in Switzerland 1997-2007****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 1195435**Author(s)** Blaettler, L.; Mertz, D.; Frei, R.; Elzi, L.; Widmer, A. F.; Battegay, M.; Flückiger, U.**Author(s) at UniBasel** [Frei, Reno](#) ; [Battegay, Manuel E.](#) ; [Flückiger, Ursula M.](#) ; [Widmer, Andreas F.-X.](#) ;**Year** 2009**Title** Secular trend and risk factors for antimicrobial resistance in Escherichia coli isolates in Switzerland 1997-2007**Journal** Infection**Volume** 37**Number** 6**Pages / Article-Number** 534-9

**BACKGROUND:** : Antibacterial resistance in Escherichia coli isolates of urinary infections, mainly to fluoroquinolones, is emerging. The aim of our study was to identify the secular trend of resistant E. coli isolates and to characterize the population at risk for colonization or infections with these organisms. **PATIENTS AND METHODS:** : Retrospective analysis of 3,430 E.coli first isolates of urine specimens from patients admitted to the University Hospital Basel in 1997, 2000, 2003, and 2007. **RESULTS:** : Resistance to ciprofloxacin, trimethoprim/sulfamethoxazole, and amoxicillin/clavulanate has increased over the 10-year study period (from 1.8% to 15.9%, 17.4% to 21.3%, and 9.5% to 14.5%, respectively). A detailed analysis of the 2007 data revealed that independent risk factors for ciprofloxacin resistance were age (5.3% > 35 years of age to 21.9% in patients < 75 years; odds ratio [OR] 1.29 per 10 years, 95% confidence interval [CI] 1.15-1.45,  $p > 0.001$ ) and male gender (OR 1.59, 95% CI 1.05-2.41,  $p = 0.04$ ). In contrast, nosocomial E. coli isolates were associated with lower odds of ciprofloxacin resistance (OR 0.51, 95% CI 0.28-0.67,  $p > 0.001$ ). The frequency of resistant isolate rates was not influenced by the clinical significance (i.e., colonization vs urinary tract infection, UTI) or by whether the urine was taken from a urinary catheter. Importantly, the increase in ciprofloxacin resistance paralleled the increase in ciprofloxacin consumption in Switzerland (Pearson's correlation test  $R(2) = 0.998$ ,  $p = 0.002$ ). Of note, resistance was less frequent in isolates sent in by general practitioners. However, after adjustment for age and gender, only resistance against amoxicillin/clavulanate was found to be less frequent (OR 0.34, 95% CI 0.16-0.92,  $p = 0.03$ ). **CONCLUSION:** : Our study reveals that resistance rates have been increasing during the last decade. Published resistance rates may lack information due to important differences regarding age, gender, and probable origin of the isolates. Empirical therapy for UTI should be guided more on individual risk profile and local resistance data than on resistance data banks.

**Publisher** Urban & Vogel**ISSN/ISBN** 0300-8126 ; 1439-0973**edoc-URL** <http://edoc.unibas.ch/dok/A6005617>**Full Text on edoc** Available;**Digital Object Identifier DOI** 10.1007/s15010-009-8457-0**PubMed ID** <http://www.ncbi.nlm.nih.gov/pubmed/20013094>**ISI-Number** WOS:000272555100008**Document type (ISI)** Journal Article