O311

Abstract (oral session)

In vitro activity of nitroxoline against urine isolates of Escherichia coli from the community: results of a German multicentre study

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Objectives: Eschrichia coli (ECO) is the leading pathogen of community-acquired urinary tract infections (UTI). The management of UTI in the community is empirically in most cases, but acquired antimicrobial resistance (R) in ECO is a growing serious problem that complicates effective treatment of UTI. Against this background, nitroxoline (5-nitro-8-hydoxyquinoline, NIQ) has become an attractive drug for the treatment of acute and recurrent UTI. The purpose of this study was to evaluate the in vitro activity of NIQ against a German collection of 499 ECO urine isolates. Methods: Strains were obtained from patients in an outpatient setting and collected during a R surveillance study conducted by the Paul-Ehrlich-Society between October and December 2010. Twenty-five laboratories across Germany were requested each to collect 20 consecutive non-duplicate urine isolates. Organisms were shipped to a coordinating laboratory for species confirmation and susceptibility testing. MICs of antimicrobial agents were determined by the microdilution method according to the standard ISO 20776-1 and interpreted by EUCAST species-related clinical breakpoints (BP). EUCAST BP for NIQ, however, have not been set yet. Results: From the total of 499 isolates, 71 (14.2%) were obtained from men, 87 (17.4%) from women aged <18 yrs, 166 (33.3%) from women aged 18-65 yrs and 175 (35.1%) from women aged >65 yrs. Single R was most common to frequently used oral antibiotics like amoxicillin (AMX: n=214, 42.9%) co-trimoxazole (SXT: n=154, 30.9%), ciprofloxacin (CIP: n=99, 19.8%), and cefuroxime (CXM: n=50, 10%). The lowest R rates were seen for fosfomycin (FOS: n=6; 1.2%) and nitrofurantoin (NIT: n=4, 0.8%). R to CIP was highest in isolates from men (32.4%) and gradually increased in isolates from women by age group (from 9.2% in the group <18 yrs to 25.7% in the group >65 yrs). 254 (50.9%) isolates were fully susceptible to AMX, SXT, CIP and CXM, while quadruple resistance was seen in 29 (5.8%) isolates. NIQ revealed an unimodal MIC distribution with MICs ranging from 1 to 8 mg/L. MIC-50/90 values were consistently 2/4 mg/L, for the total strain collection as well as for various subgroups of isolates (see Table). All strains with R to FOS or NIT were inhibited by NIQ at 2 mg/L and 4 mg/L, respectively. Conclusion: NIQ showed uniform in vitro activity against ECO urine isolates, irrespective of the R profile. It may thus be a therapeutic option in the treatment of acute and recurrent UTI.

Table: MIC-50/90 values of NIQ (mg/L)

Group (n)	MIC-50	MIC-90
All isolates (499)	2	4
Isolates susceptible to AMX, SXT, CIP, CXM (254)	2	4
Isolates resistant to AMX, SXT, CIP, CXM (29)	2	4
Isolates from men (71)	2	4
Isolates from women aged <18 yrs (87)	2	4
Isolates from women aged 18-65 yrs (166)	2	4
Isolates from women aged >65 yrs (175)	2	4