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IN-VITRO SUSCEPTIBILITY OF ESCHERICHIA COLI ISOLATES TO ANTIMICROBIALS, USED IN THE THERAPY OF URINARY TRACT INFECTIONS IN GYNECOLOGIC PATIENTS

Hypothesis / aims of study

Treatment of urinary tract infections (UTIs) is based on the spectrum of organisms causing infection and their susceptibility to antimicrobial substances. As the major pathogen, *Escherichia coli* accounts for 75% to 90% of UTIs. During the last few years *E. coli* showed an increasing resistance to trimethoprim-sulfamethoxazol, therefore this substance no longer remains drug of choice in the treatment of UTI (1). Moreover, increasing rates of resistance to other common antimicrobials are continously reported. The current resistance pattern of *E. coli* is analyzed in a gynecologic setting over a two year period. Results from our single center survey are compared with data from the European Antimicrobial Resistance Surveillance System (EARSS). Clinical implications for the treatment of UTI are drawn from results.

Study design, materials and methods

Between January 2008 and December 2009 we consecutively collected 162 *E. coli* isolates from urine specimens from clinically confirmed UTIs at our Department of Obstetrics and Gynecology. Resistance testing was carried out by using the VITEK 2 system (bioMérieux, Marcy l'Etoile, France), according to the manufacturer's instructions. All results were evaluated according to the Clinical And Laboratory Standards Institute Guidelines (CLSI 2008).

Results

At our institution we report significantly lower resistance of *E. coli* to aminopenicillin and ciprofloxacin as compared to the EARSS findings. However, *ESBL-E. coli* seems to have a similar prevalence. Results are shown in Table 1.

	our institution	EARSS	*p*-value
aminopenicillin	62.2%, n=97	30.1%, n=710	<0.0001
ciprofloxacin	87.2%, n=136	77.1%, n=1815	0.0005
ESBL-E.coli	3.1%, n=5	5.0%, n=117	0.3468
trimethoprim-sulfamethoxazole	75%, n=117	n/a	n/a
amoxicillin-clavulanic acid	92.1%, n=140	n/a	n/a

Table 1. Rates of *E. coli in-vitro* susceptibility to antimicrobial substances and *ESBL-E. coli* at our institution compared with the report of the European Antimicrobial Resistance Surveillance System (EARSS).

Interpretation of results

- Aminopenicillin as well as trimethoprim-sulfamethoxazole continue to be inadequate antibiotics in the treatment of UTI.
- In the light of the data of our single center survey we continue to use amoxicillin-clavulanic acid as well as ciprofloxacin to treat UTIs.
- There is a wide variance in resistance patterns in different geographical regions.

Concluding message

- It is important not only to rely on pooled data from a large geographical area, but to be aware of local susceptibility patterns in order to give the best medical care.
- We attribute low resistance rates in part to restrictive antibiotic policy.

References

1. Gupta K. Addressing antibiotic resistance. Dis Mon 2003;49:111-28

Specify source of funding or grant	**NONE**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
Is this a Randomised Controlled Trial (RCT)?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**routine laboratory data were used only**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**