

ANTIBIOTICS IN PREGNANCY: PHARMACOEPIDEMOLOGY

STUDY OF THE ANTIBIOTIC PRESCRIPTION IN RUSSIA

Raisa A. Tchilova, Anatoly I. Ischenko, Vladimir V. Rafalskiy

Moscow Medical Academy, Moscow; Institute of Antimicrobial Chemotherapy, Smolensk

Purpose

To evaluate the current clinical practice of prescription of antimicrobials in pregnancy women with infection diseases in Russia and estimate the safety of their use.

Methods

We conducted multicenter retrospective pharmaco-epidemiological study based in 7 centers (Moscow, Smolensk, Vladivostok, Petropavlovsk, Yakutsk, Tjumen, Krasnodar). During first phase of the study the data from 1464 cases of infections in pregnant women were analyzed. The data were taking from obstetrics and gynecology clinics in 2003-04 years.

Results

Mean age of the patients was 25.6 ± 6.0 (min -14, max - 52) years, mean gestational ages at admission to hospital was 27.0 ± 10.8 (3 to 42) weeks.

Table 1. Infection during pregnancy in Russia (n=1464)

Infection	%
UTI	39,9
STD	19,3
Candidiasis	17,4
Viral infections	11,2
RTI	6,6
Sepsis	0,2
Endometritis and uterine appendages infections	1,4
No data	1,97
Other	2,6

Most often (77.5%) infection was community acquired and 2,1% - nosocomial, in 20% patients there was not to estimate origin of the infection. The most prevalent infections during pregnancy in Russia was urinary tract infections - 39,9%, STD - 19,3, candidiasis - 17,4%, RTI - 6,6% (Tab 1). Therefore the most interest was analyzing the antibiotic prescription for UTI in pregnancy (tab. 2).

In 28% cases were used topical (intravaginal) antimicrobial administration. Most often of topically administrated antimicrobials (19.02% of all prescriptions) were prescribed combined drugs included antibacterials and antimycotics. In 80.98% cases antimicrobials were

prescribed systemically. Most often were prescribed beta-lactams (16,2% for outpatients and 57,7% for inpatients). More often were prescribed ampicillin (4,6% for outpatients and 31,5% for inpatients). Amoxicillin + clavulanic acid was prescribed in 6,4% of outpatients and 5,6% inpatients pregnant women with UTI. Cephalosporins were prescribed in 5,2% and 20,6% for outpatient and inpatient UTI (mainly III- and I-st generations). Quite often were prescribed nitroimidazoles - 1,8-7,4% (in general metronidasole), nitrofurans - 8.2-15,0%, aminoglycosides - 4,6-3,8%. Other antimicrobials (fluoroquinolones, doxycycline, antiviral drugs, antifungals) were prescribed rarely. Despite the fact that most prescribed drugs were class B by FDA, 5.8% all antimicrobials prescribed to pregnancy were class C, 0.8% class D and 9.1% were unclassified.

Table 2. Systemic antimicrobials prescription for UTI in pregnancy

Antimicrobials	Outpatient (acute cystitis and bacteriuria), n=220	Inpatient (pyelonephritis), n=360
Ampicillin	4,6	31,5
Amoxicillin/clavulanate	6,4	5,6
Cephalosporins I	1,9	9,7
Cephalosporins II	2,3	0,9
Cephalosporins III	1,0	10
Aminoglycosides	4,6	3,8
Quinolones	6,8	1,5
Nitrofurans	8,2	15,0
Co-trimoxazole	2,7	0,3
Tetracyclines	2,7	0
Nitroxolone	8,6	4,7
Chloramphenicol	2,7	0
Nitroimidazoles	1,8	7,4
Fosfomycin	11,8	0
Antifungals	0	6,8
Other	0	2,7

Conclusions

Most often prescribed antimicrobials for UTI (the most prevalent infections during pregnancy in Russia) are beta-lactams and combined topical antibacterials. In 15.7% cases were prescribed antimicrobials of class C, D or unclassified by FDA. In 25% outpatient and 53,6% inpatient were used antibiotics with low in vitro activity for uropathogens.