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Effective And Safe Use Of Cephalosporins In The Treatment Of Urinary Tract Infection.

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Relevance. The high prevalence of urinary tract infections (UTIs) determines their high significance, not only medical, but also social. Every year, UTIs are the cause of outpatient visits and emergencyя medical care from the hospital[й [1]. Recently, it has been found that причиной UTI is caused уропатогенныеby uropathogenic E. Colistrains. ТакжеAn increase in the frequency of infections caused by gram-negative microorganisms was also noted, and therefore a further search for new drugs among cephalosporin antibiotics was aimed дляat creating drugs with increased activityagainst these microorganisms. New cephalosporin antibiotics are needed because of the huge increase in the number of drug-resistant bacteria

Keywords: antibacterial prevention, antibacterial drugs, urological operations, urinary tract infections.

Relevance. The high prevalence of urinary tract infections (UTIs) determines their high significance, not only medical, but also social. Every year, UTIs are the cause of outpatient visits and emergencyя medical care from the hospital[й [1]. Recently, it has been found that причиной UTI is caused уропатогенныеby uropathogenic E. Colistrains. ТакжеAn increase in the frequency of infections caused by gram-negative microorganisms was also noted, and therefore a further search for new drugs among cephalosporin antibiotics was aimed дляat creating drugs with increased activityagainst these microorganisms. New cephalosporin antibiotics are needed because of the huge increase in the number of drug-resistant bacteria. In this regard, cephalosporins of the second generation appeared in clinical practice in the 70s, and drugs of the third generation appeared in the 80s [5]. The most common causes of bacterial infection are
urinary tract infections and urinary tract infection in
common are E. coli and other gram-negative intestinal infections.
bacteria [6]. About 95% of ascending urinary tract infectionsвосходящего
характерafor example, with reflux of bacteria along the urethra to the bladder, with
pyelonephritis – through the ureter to the kidney. Also urinary tractinfections
they have a hematogenic etiology[4]. About 6.5% of cases
nosocomial bacteremia associated with urinary tract infection
paths. Bacterial infectionsof the urinary tract with
clinical manifestations require the use of
andntibiotic therapy.

Material and methods. Review of literature data and medical history of the urology department of the clinic TasPMI. We reviewed 24 case histories of sick children aged 4 to 10 years with a diagnosis of urinary tract infection, where 11 of them received ceftriaxone, and 13 received cefepime. Sick children received the calculated dose of the studied antibiotics in monotherapy without combination with other antibacterial drugs. The clinical and bacteriological efficacy of treatment was evaluated in patients of two groups after the start of therapy. The condition of patients improved with the use of both ceftriaxoneand cefepime.

Results. Cephalosporin antibiotics are highly effective and safe drugs in the treatment of various bacterial infections. They are highly active against non-hospital E. coli, which is the main causative agent of pyelonephritis in uncomplicated patients [2]. To increase the effectiveness of antibiotic treatment, you need:

an accurate diagnosis that allows you to determine, on the one hand, the localization of the inflammatory process, on the other - the suspected pathogen; the validity of the use of certain antibacterial drugs. In acute viral diseases of the respiratory tract (uncomplicated), antibiotics should not be used, as they do not affect the quality of life.

they have an antiviral effect and do not prevent the development of bacterial complications [11]. At the same time, their use may lead to the appearance of resistant strains and / or cause NLR in patients; selection of the optimal drug in accordance with the infectious and inflammatory process, its localization and severity: use of drugs with a narrow spectrum of action for empirical therapy of mild or moderate diseases, in severe cases - or drugs with a wider spectrum of action or combination therapy; taking into account the pharmacokinetics of drugs (bioavailability, distribution, penetration through physiological barriers, concentration in body fluids and tissues, metabolism, excretion rate); taking into account the patient's body characteristics (age, body weight, anamnesis, concomitant pathology, liver and kidney function, taking other drugs, pregnancy or breast-feedingselection of the optimal dose (taking into account the dosage rules for individual drugs), multiplicity (based on kidney or liver function) and route of administration (taking into account the severity of the condition) [9].

Evaluation of the effectiveness of the chosen therapy, as a rule, consists of an assessment of clinical and microbiological effectiveness both during therapy on the 5th day) and after its completion. The criteria for clinical effectiveness include normalization of body temperature, disappearance of general and local symptoms of infection. From laboratory parameters, effective treatment is indicated by a decrease in the number of white blood cells (primarily neutrophils), a decrease in the level of SRV, and a decrease in the rate of erythrocyte sedimentation. For a number of infections, important information about the effectiveness of treatment can be obtained by X-ray examination of the affected organs or using other methods.

visualizations (ultrasound, computed tomography, endoscopic

research, etc.) [10].

Cephalosporins of the IV generation (cefepime) are more active in comparison with

with cephalosporins of the third generation in relation to strains

Enterobacteriaceae, especially against Enterobacter, Citrobacter,

serrations and providencesthat produce chromosomal P-lactamases

class AmpC; P. aeruginosa and staphylococci. By action on

pneumococci, other streptococci, anaerobes cephalosporins IV

generations are close to generation III cephalosporins.

Despite the long-term use and reduced чsensitivity of some microorganisms to them, cephalosporins, especially drugs of the third and fourth generations, remain important at present in the treatment of hospital infections. Cefepime/sulbactam is a combined antibiotic consisting of an anti-pseudomonas cephalosporin of the IV generation cefepime and a beta-lactamase inhibitor sulbactam in a ratio of 1:1. K Most/сульбактаму clinical strains of ESBL producing Klebsiella pneumoniae, Escherichia coli, and Proteus spp. are sensitive to cefepime/sulbactam, as well as some strains of K. pneumoniae and A. baumanniithat are resistant to carbapenems as a result of the production карбапенемазof Class D carbapenemases. After intravenous and intramuscular administration, high concentrations are detected in the urine, bile, peritoneal fluid, interstitial tissue and fluid, skin, subcutaneous tissue, mucosal secretions of the bronchi, lungs, sputum, prostate gland, appendix and gallbladder wall. Penetrates the cerebrospinal fluid (CSF) in case of inflammation of the meninges. In low concentrations, cefepime penetrates into breast milk (approximately 0.5 mg of cefepime yand 1 liter of mother's milk). The binding of the drug to plasma proteins is 70%. Elimination of the drug from the body is mainly carried out in unchanged form through гепатобитhehepatobiliary system (60%) and kidneys (40%).

The content of the drug in the urine is many times higher than the minimum suppressive concentration for most pathogens of urinary tract infections. In patients withеченохronic insufficiency, the elimination half-life increases 2-4-fold, which requires dose adjustment [12]. The duration of antibacterial therapy is usually 5-10 dayски.

High efficacy of cefipim and after the initial 3–day treatment with ceftriaxone in a multicenter randomized study that included 306 children aged 1 month to 2 years with UTIS that occurredwith febrile syndrome,urinary sterility was achieved 25 and 24 hours after the start of treatment, respectively[13]. 6 monthsяцев after the end of treatment, clinical and microbiological symptoms of recurrent infection were observed in 5.3 and 8.5% of cases, respectively [8]. The Cochrane review presents an analysis of 23 studies that included 3407 children with acute pyelonephritis. Показана эфективностьBoth oral aantibiotic therapy

with cephalosporins and a step-by-step treatment regimen for these patients were shown to be effective [3]. Cephalosporins of the third generation for oral administration have a wide spectrum of antimicrobial activity (including pathogens that produce beta–lactamases) and favorable pharmacokinetic characteristics. Drugsare considered as the first choice for the treatment of uncomplicated UTIs (including pregnant women and children) in outpatient practice, as well as as an alternative tool in the treatment of ENT, respiratory tract infections (in particular COPD) and uncomplicated gonorrhea. The drugs are well tolerated and easy to use, especially in polyclinic settings.

Cephalosporins are well tolerated, but undesirable effects may also occur. The most frequent adverse events associated with the use of cephalosporins are allergic reactions (2-3%), although their frequency is significantly lower than that of other cephalosporins.

penicillins. It should be remembered that approximately 10% of patients with
hypersensitivity to penicillin cross-sectional reactions occur.
reactions to cephalosporins. Recently, the FDA (Food and Drug Administration
Administration) reported finding a link between seizures and
use of cefepime in patients with impaired renal function,
for which the dosage of the specified drug was not corrected.
an antibiotic[12].
Clinical significance of hemorrhagic syndrome on the background of the use of
these cephalosporins are low, but the risk is possible in patients with
renal or hepatic insufficiency, in connection with which in these cases
In some cases следует контролировать , prothrombin time should be monitored.
Cephalosporin antibiotics do not have teratogenic or
embryotoxic properties, so if necessary, they can
use in pregnant women.
Other adverse reactions should include local
pain with intramuscular administration of cephalosporins; phlebitis
with intravenous administration, they are rarely observed (less than 1%). Реакции Co reactions
sides желудочноof the gastrointestinal tract are rarely observed (about 2%),
more often when using oral medications. Parenteral services
cephalosporins that are excreted in the bile (cefoperazone,
ceftriaxone), are more likely to cause diarrhea. Keep in mind,
that when using cephalosporins, as well as other antibiotics,
severe antibiotic-associated diarrhea may occur,
caused by Clostridium difficile, and pseudomembranous colitis, however
the incidence of this complication is low (less than 1%).Diagnostics is based on
on the analysis or culture of urine. The results obtained in this paper are
they indicate that the main target for E. cloacae is indeed
these are tissues associated with the urinary tract (bladder and bladder).
kidneys)

Conclusions. The data provided indicate that cephalosporin antibiotics are highly effective and safe drugs in the treatment of various bacterial infections of the urinary tract. However, antibiotic treatment is dangerous for health not only for the patient himself, but also leads to the development of antibiotic resistance.

In some patients with acute uncomplicated cystitis, the clinical efficacy of cefipim (200 mg 2times a day) was 98.9%, bacteriological-97.9%. Clinical efficacy was observed in 100 and 94% of children, respectively.

The bacteriological efficacy of cefipime in the treatment of pyelonephritis in children showed that in most cases the isolated uropathogens showed high sensitivity to cefepin. Based on the results obtained, this drug was included in the recommendations for empirical antibacterial therapy of pyelonephritis in children.

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