

сільськогосподарських тварин та утриманням їх в покращених умовах, можна значно зменшити рівень захворюваності і, відповідно, навантаження ліками.

За більш ніж 80 річну історію використання антимікробних препаратів мікробіологи наголошують на забороні використання антибіотиків як харчових добавок або профілактичних засобів, обмеженні терапевтичного застосування таких препаратів та їх використання лише у випадках, коли вони були б виправдані за бактеріологічними даними. Також необхідно прийняти рішення щодо того, які ліки можна було б з користю продовжувати використовувати у ветеринарній медицині. Немає лікарських засобів, які, ймовірно, будуть корисними в медицині для використання у тваринництві. Жоден препарат не буде корисним у ветеринарії для використання в якості кормової добавки.

THE IMPORTANCE OF ENTEROCOCCI IN THE OCCURRENCE OF PATHOLOGICAL CONDITIONS OF THE UROGENITAL SYSTEM

Shmatko V. I.

Scientific supervisor: Filimonova N. I.

National University of Pharmacy, Kharkiv, Ukraine

megiddo@ukr.net

Introduction. Modern infectology is characterized primarily by the predominance of opportunistic infections among pathogens. Of particular interest are microorganisms of the genus *Enterococcus*, which are representatives of the normal microflora of humans and animals, found in food, water, plants, animals, birds and insects. In humans, as in animals, they live in the intestines, female genital tract, less often in the urethra of men and in hospital conditions. Enterococci were originally classified as group D streptococci, but are now considered a separate genus. The genus *Enterococcus* includes >17 species, of which the most common are *E. faecalis* and *E. faecium*. In clinical material from humans, *E. faecalis*, *E. faecium*, *E. gilvus* and *E. pallens* are more common than other species. These microorganisms are the most common etiological causes of infection in humans, including endocarditis, urinary tract infection, prostatitis, intra-abdominal infection, cellulitis and wound infection with concomitant bacteremia. Most infections caused by enterococci are endogenous in nature and are caused by the invasion of microorganisms with excessive colonization of these bacteria of attachment sites. Studies have convincingly shown the possibility of nosocomial infection, especially with a high frequency of use of broad-spectrum cephalosporins. It should be noted that the proliferation of multidrug-resistant species of *Enterococcus faecium* and *Enterococcus faecalis* is particularly dangerous. These microorganisms have the ability to quickly acquire resistance to many antibacterial drugs and transmit it to other bacteria..

The aim. Study of the etiological structure and antibiotic resistance of opportunistic infections isolated in patients with genitourinary pathology.

Materials and methods. It was examined 50 patients aged 16 to 72 years who were on inpatient treatment in the state institution "Institute of Dermatology and Venereology of NAMSU". Identification of microorganisms was carried out using microbiological methods: bacteriological – identification of microorganisms according to generally accepted microbiological schemes of isolation and identification of microorganisms.

Research results. As a result of the study, 15 strains of enterococci were isolated from the clinical material of 50 patients: 7 strains from the vagina of women with nonspecific inflammatory diseases of the urogenital tract, 3 strains from the urine of patients with urinary tract infections, 5 strains from the urethral discharge of men with nonspecific infections of the urogenital tract. Due to the identification carried out, the isolated enterococci were assigned to the following species: *E. faecalis* – 13 strains (88.9%), *E. faecium* – 2 strains (or 11.1%). It was found that all clinical strains of *E. faecalis* lysed erythrocytes, in contrast to *E. faecium* isolates, in which this feature was absent. Gelatinase activity was present in 8 strains (58.33%) of enterococci, of which 7 strains (95.24%) were *E. faecalis* and 1 strain (4.76%) was *E. faecium*.

Recently, the world has seen an increase in antimicrobial resistance of enterococci, in particular *E. faecalis*, which negatively affects the results of treatment of patients. According to the literature, the frequency of resistance to different groups and classes of antimicrobial drugs has significant fluctuations in different countries. It is known that the success of initial antibiotic therapy of nosocomial purulent-inflammatory infection caused by *Enterococcus* strains depends on the correct choice of antibiotic, which is possible in the presence of data on its resistance. Given the latter, it was advisable to determine the sensitivity of the isolated strains to antibiotics. The lowest activity against *E. faecalis* strains showed natural penicillins, resistance to which was $58.8 \pm 1.19\%$. Semi-synthetic penicillins (ampicillin and amoxicillin) also showed low activity – 27.4 ± 0.88 and $32.5 \pm 1.86\%$ of *E. faecalis*. Insensitivity to oxacillin was shown by $34.3 \pm 1.22\%$ of the tested strains. Resistance to gentamicin, amikacin and netilmicin was almost at the same level and was 35.9 ± 0.96 ; 35.6 ± 1.16 and $35.1 \pm 1\%$, respectively. Tetracyclines (tetracycline and doxycycline) had low activity against the studied strains of *E. faecalis*. Resistance to these drugs was $30.0 \pm 1.0\%$ and ranged from ($P \pm tm$) 29.0-31.0% (16.0 ± 1.0 and $44.0 \pm 1.64\%$, respectively). At the same time, when determining the sensitivity to antibiotics of the isolated strains of *E. faecium*, sensitivity was established only to tetracycline (MIC 1-2 $\mu\text{g/ml}$).

Conclusions. *Enterococcus* is a group of opportunistic bacteria capable of causing autoinfection or exogenous infection when accumulated in the environment. Therefore, the role of the genus *Enterococcus* in the pathogenesis of human pyo-inflammatory diseases is beyond doubt, but remains poorly understood.

In the last decade, the role of two species of enterococci – *E. faecalis* and *E. faecium* – as pathogens, including nosocomial, in inflammatory diseases of the genitourinary system.

A high level of antibiotic resistance was found in the isolated enterococci.