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НАВЧАЛЬНО-НАУКОВИЙ ІНСТИТУТ ГРОМАДСЬКОГО ЗДОРОВ'Я ТА ПРОФІЛАКТИЧНОЇ МЕДИЦИНИ

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Інноваційні підходи у наукових дослідженнях у сфері громадського здоров'я та профілактичної медицини: досягнення та перспективи

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Епідемічна ситуація в Україні в умовах пандемії та збройного конфлікту

RATIONAL APPROACH TO ANTIVIOTIC THERAPY OF *K. PNEUMONIAE* AMONG PATHOGENS OF HEALTHCARE-ASSOTIATED INFECTIONS

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Antibiotic resistance threatens to become one of the biggest health challenges of the 21st century. In 2019 WHO stated that 1.27 million deaths in 2019 are directly attributed to drug-resistant infection around the globe, in 2021 1.14 million deaths were attributable to bacterial AMR, and 4·71 million were associated with AMR. The GBD 2021 Antimicrobial Resistance Collaborators forecasted a 70% increase in the number of AMRs by 2050; however, the 2024 rate indicates that growth is occurring even more rapidly.

Klebsiella pneumoniae has been rated among the major causes of several opportunistic and fatal hospital-acquired infections (HAIs) and community-acquired infections, including neonatal septicemia, wound infections, nasopharyngeal infections, pneumonia, meningitis, gastrointestinal tract infections, and urinary tract infections. *Klebsiella pneumoniae*, known as a major threat to public health, is the most common factor of nosocomial and community-acquired infections. In this study, 50 *K. pneumoniae* clinical specimens isolated from bronchial, urea, blood, catheter, rectal, bile, tracheal, and wound cultures were collected. *K. pneumoniae* is a Gram-negative pathogen that has a large accessory genome of plasmids which divides strains into opportunistic, hypervirulent, and multidrug-resistant groups.

The implementation of the One Health approach to understand AMR and its drivers has led to increased research on the ecology of *K. pneumoniae*. Ecological studies and cross-niche surveillance have shed light on major animal, food, and environmental reservoirs of *K. pneumoniae*. On animal sampling in

Africa were isolated, and they showed resistance to imipenem, meropenem, aztreonam, ceftriaxone, cefotaxime, ceftazidime, levofloxacin, ciprofloxacin, amikacin, gentamicin, piperacillin–tazobactam, fosfomycin–D-glucose-6, chloramphenicol, amoxicillin–clavulanate, cefepime, omadacycline, and eravacycline but not to ceftazidime–avibactam, polymyxin B, and tigecycline.

In early 2024, the Global Antimicrobial Resistance and Surveillance System on Emerging Antimicrobial Resistance Reporting (GLASS-EAR) issued a request for information to assess the current global situation given the increased identification of isolates of hypervirulent Klebsiella pneumoniae (hvKp)

New protocols should be implemented in hospitals around the world to combat ventilator-associated and other hospital-acquired pneumonia according to WHO AWaRe (Access, Watch, Reserve) lists but in practical health care, there are many difficulties.

Lancet's series Sustainable Access to Effective Antibiotics claims antibiotics, if used as indicated, can avert many deaths from bacterial infections, and access to second-line antibiotics can even prevent deaths from some drug-resistant infections Current targets og series is: 1) 10% reduction in deaths from antibiotic resistance; 2) 20% reduction in inappropriate human antibiotic use, with two associated aims; 3) 30% reduction in inappropriate animal antibiotic use.

In 2017, 4 Ukraine laboratories reported 50 positive results from intensive care and 30 from other departments on laboratory diagnostics of Klebsiella infections in Ukraine. In 2021, 24 laboratories reported 229 positive results in intensive care and 69 from other departments. Diagnostics and treatment according to the antibiogram increase the likelihood of a favorable treatment outcome and reduce the chances of resistance development.

Conclusion. The increase in multidrug-resistant K. pneumoniae in wildlife suggests that wild animals might play a role in disseminating resistance genes. The rationalization of antibiotic prescription in medical institutions in Ukraine is hampered by insufficient provision of laboratories, frequent unauthorized use of antibiotics by patients before seeing a doctor, and frequent non-standard situations

to which general schemes are not applicable. However, the study of the antibiogram before prescribing antimicrobial drugs is becoming more widespread.

VACCINATION AGAINST HUMAN PAPILLOMAVIRUS IN EUROPE

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Relevance. Human papillomavirus (HPV) is a common pathogen belonging to the Papillomaviridae family. It is primarily transmitted through direct skin-to-skin contact, often during sexual activities, and can lead to various health issues, including genital warts and several types of cancer. Most notably, HPV is responsible for nearly all cases of cervical cancer, with types 16 and 18 accounting for approximately 70% of these cases.

In Ukraine, plans are underway to initiate a national vaccination program against HPV next year. The introduction of this vaccination program is crucial given that many individuals may be asymptomatic carriers of the virus, leading to potential long-term health complications.

The goal of the work. This work aims to study the experiences of various European countries in implementing human papillomavirus (HPV) vaccination programs.

Result. Vaccination against HPV in Europe is a critical public health initiative. HPV vaccination programs are implemented across almost all European Union (EU). By 2019, 30 out of 31 EU countries had introduced HPV vaccinations into their national universal vaccination programs, with Poland being the exception until June 2023 when it launched its National Public HPV Vaccination Program [1]. High coverage rates in Belgium-90%, in Portugal-84%,