Combination Therapy

Combination Therapy is an effective strategy to combat multidrug resistance. Combinations of drugs increase the spectrum of activity for individual drugs, decrease bacterial resistance, and improve therapeutic efficacy. The combination of antibacterial agents can be synergistic (i.e., the combination has a greater effect than the sum of the individual agents), additive (i.e., the combination has an effect equivalent to the sum of the individual agents), or antagonistic (i.e., the combination has a lesser effect than the sum of the individual agents). The choice of combination therapy should be guided by the bacteriological results of susceptibility tests, clinical evaluation, and pharmacokinetic considerations.

Antimicrobial Stewardship & Healthcare Epidemiology

Antimicrobial Stewardship is the responsible use of antimicrobial agents to optimize patient care and minimize the development of antimicrobial resistance. It involves the selection of the most appropriate antimicrobial agent for a particular infection, the duration of therapy, and the appropriate use of prophylactic antimicrobials. Antimicrobial stewardship programs aim to reduce unnecessary use, improve clinical outcomes, and reduce drug costs. The implementation of antimicrobial stewardship programs has been shown to decrease antimicrobial resistance rates, improve patient outcomes, and reduce healthcare costs.

Antimicrobial Therapy in Veterinary Medicine

Antimicrobial Therapy in Veterinary Medicine provides comprehensive information on the use of antimicrobial agents in veterinary medicine. The book covers the principles of antimicrobial therapy, antimicrobial susceptibility testing, and the use of antimicrobial agents in various animal species, including small animals, large animals, and companion animals. The book also discusses the importance of antimicrobial stewardship in veterinary medicine and the role of the veterinarian in the treatment of infections.

Insights on the Molecular Diagnostics Global Market to 2026 - Featuring Agilent Technologies, bioMerieux and Immucor Among Others

The global market for molecular diagnostics is expected to grow at a CAGR of 6.1% from 2019 to 2026. The increasing adoption of molecular tests in various clinical applications, such as infectious disease testing, genetic testing, and cancer diagnostics, is driving the market growth. The market is segmented by application, technology, end-user, and region. The North American region is expected to dominate the market during the forecast period, followed by the European region.

Enterically derived high-density lipoprotein restrains liver injury through the portal vein

High-density lipoprotein (HDL) is important for cholesterol metabolism and may have anti-inflammatory and antimicrobial properties. Although HDL is mainly produced in the peripheral tissues, it can also be derived from enteric bacteria. In a recent study, researchers investigated the effects of enterically derived HDL on liver injury in a murine model of liver injury. They found that enterically derived HDL was able to suppress liver injury by inhibiting the production of pro-inflammatory cytokines and activating the anti-inflammatory pathway.

Antimicrobial (AM) agents (e.g. antibiotics, antiseptics, and disinfectants) are widely used in hospitals and other healthcare settings to control infections. However, the overuse of AMs has contributed to the emergence and spread of AM-resistant (AMR) bacteria. The development of new AMs is urgently needed to address the growing AMR problem. The use of combination AM therapy has been shown to be effective in treating infections caused by AM-resistant bacteria. Combination AM therapy involves the use of two or more AMs with different mechanisms of action, which can help to prevent the emergence of AM-resistant strains.

Antimicrobial Therapy in Veterinary Medicine offers a comprehensive overview of the use of AMs in veterinary medicine. The book covers the principles of AM therapy, AM susceptibility testing, and the use of AMs in various animal species, including small animals, large animals, and companion animals. The book also discusses the importance of AM stewardship in veterinary medicine and the role of the veterinarian in the treatment of infections.

Implementing a multidisciplinary approach to antimicrobial stewardship is crucial to prevent the spread of AMR. This approach involves the collaboration of healthcare professionals, such as physicians, pharmacists, and nurses, to develop and implement effective AM stewardship programs. The key components of a multidisciplinary approach include education and training, antimicrobial formulary management, and antimicrobial use surveillance. The implementation of a multidisciplinary approach can result in a reduction in AM use, improved patient outcomes, and decreased AMR rates.

In order to help clinicians decide which would be the best combination therapy, we propose an algorithm for the choice of the antimicrobial drugs (Figure 2). The primary aim of the therapy is to enhance the antibacterial activity and decrease the emergence of AMR by using drugs with different mechanism of action. The algorithm is based on the bacteriological results of susceptibility tests, clinical evaluation, and pharmacokinetic considerations. The choice of combination therapy should be guided by the bacteriological results of susceptibility tests, clinical evaluation, and pharmacokinetic considerations.