

# Management of Antimicrobials in Infectious Diseases: Impact of Antibiotic Resistance / 399 pages / Humana Press, 2011 / 9781607615835 / Arch G. Mainous III, Claire Pomeroy / 2011

Optimal antimicrobial use is essential in this era of escalating antibiotic resistance. Clinicians, particularly those on the frontlines of care, need an understanding of the management of common infectious diseases and the appropriate use of antimicrobials in the context of resistant pathogens. At the forefront of this book is the clinical impact of appropriate diagnosis and treatment, as well as an emphasis on the newer aspects of infectious disease management necessitated by the increasing problem of resistant pathogens. Further, the book provides useful information on major pathogens to help practicing clinicians not only diagnose but treat effectively infections and their concomitant complications. Thus, many infectious diseases can be prevented and treated by isolating new strains of lactic acid microorganisms that produce bacteriocins with antibacterial action [27, 28]. Unlike Lactobacillus strains, the antimicrobial activity of Lactococcus strains has not been well studied [2, 14]. For further studies of antibiotic resistance, we selected four isolates with maximum antimicrobial activity against pathogenic and opportunistic test strains, namely Bacillus subtilis, Leuconostoc lactis, Lactobacillus plantarum, and Leuconostoc mesenteroides. These isolates were tested for antibiotic resistance, i.e. resistance of a strain to one or more antibacterial drugs, or decreased sensitivity (immunity) of a culture to the action of an antibacterial substance. The antimicrobial resistance (AMR) crisis is the increasing global incidence of infectious diseases affecting the human population, which are untreatable with any known antimicrobial agent. This crisis will have a devastating cost on human society as both debilitating and lethal diseases increase in frequency and scope. Current management measures to legislate the use of antimicrobials and to educate the healthcare world in the issues, while useful, have not comprehensively addressed the problem of achieving an overall reduction in the human use of antimicrobials. We propose that in addition Antimicrobial-resistant infections currently claim at least 50,000 lives each year across Europe and the US alone, with many hundreds of thousands more dying in other areas of the world. But reliable estimates of the true burden are scarce. Global consumption of antibiotics in human medicine rose by nearly 40% between 2000 and 2010, but this figure masks patterns of declining usage in some countries and rapid growth in others. The BRIC countries plus South Africa accounted for three quarters of this growth, while annual per-person consumption of antibiotics varies by more than a factor of 10 across all middle and high-income countries. Antimicrobial resistance will have a different impact in different parts of the world.