

PHAGE THERAPY: A RENEWED HOPE IN INFECTIOUS DISEASE MANAGEMENT UNDER THE THREAT OF ANTI-MICROBIAL RESISTANCE

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Infectious diseases are in limelight since the primitive days, because “Health is Wealth” remained a central theme in the history of human societies. In light of epidemiological landscape and the historical context of diseases, every millennium can be regarded as unique as marked by appearance of deadly diseases and their distinct features. The 21st century appears no longer an exception, the trend continued with fear of viral pandemics. However, beyond all other existing challenges, our world is now facing a novel problem: the primary agents used in the treatment of bacterial infections which are crucial for saving life in the healthcare system begun to exhibit ineffectiveness. This concern has come into attention predominantly over the last two decades, although warning issued shortly after the discovery of such agents, the antibiotics by Alexander Fleming, the inventor of penicillin. Ineffectiveness of antibiotics to treat a disease occurs due to the emergence of multi drug resistance (MDR) bacterial strains which is difficult to manage with the existing antibiotics. MDR bacterial strains are probably the most important concern of Antimicrobial Resistance (AMR). AMR occurs when microorganisms such as bacteria, viruses, fungi, and parasites change when they are exposed to antimicrobial drugs. As a result, the medications become ineffective and infections persist in the body, increasing the risk of spread to others. This can lead to severe health complications, prolonged illnesses, and even death. AMR is a global health issue that affects both humans and animals. Management of AMR is a crucial component of public health initiatives aimed at combating the rise of drug-resistant infections. Under this challenging AMR issues, there is a critical need to investigate and evaluate new treatment strategies. This paper will explore the reasons of AMR in context of bacterial infection and an optional treatment of MDR bacterial infection, the phage therapy.
