

2nd World Congress and Exhibition on

Antibiotics and Antibiotic Resistance

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Overcoming antimicrobial resistance

The introduction of antibiotics to clinical medicine in the 20th century worked like a miracle for many infections. However, antibiotic resistance began emerging soon afterwards and it continued to expand with resistance emerging to all classes of antibiotics, threatening the end of the antibiotic era. Development of Antimicrobial Resistance (AR) appeared at first to be a new phenomenon. However, recent scientific investigation firmly established that AR genes, which are intrinsically the basis for resistance, predate the clinical use of antibiotics by >4 million years. Therefore, AR is an ancient and natural phenomenon. However ancient it may be, AR currently is clearly seen as a major catastrophe and necessitates innovative and wise tactics to overcome the problem. Many efforts have been made to control the spread of AR. Among them, infection control programs and antibiotic stewardship have shown positive effects. Possibilities for the discovery of new antibiotics appear rather small. Other innovative approaches must be studied to minimize and/or reverse AR, so that the effective life span of existing antibiotics can be extended maximally. These include, but are not limited to: combinations of antibiotics and other compounds to selectively enhance the activity of antibiotics while reversing AR (i.e., carbapenem and aspergillomarasmine A (NMD or VIM inhibitor)), tet gene added gentamicin. In addition, for multidrug and pandrug-resistant organisms, non-antibiotic regimens will need to be explored. Some examples are monoclonal antibodies, vaccines and bacteriophages. These might provide benefit while keeping the microbiome intact. To be successful all these efforts would require strong support from the WHO, the Food and Agricultural Organization, the World Organization for Animal Health, and other national/international health related organizations.

Biography

Byungse Suh has completed his BS in Pharmacy in 1962 from Chung-Ang University, Korea, MA and PhD in Microbiology in 1967 and 1969 respectively from the University of Kansas, Postdoctoral studies from the University of Iowa and his MD from the University of Miami in 1973. He has completed his Internal Medicine Residency Training and an Infectious Disease Fellowship at the University of Wisconsin. He has published more than 110 papers and is a Professor at Temple University School of Medicine.

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