Bacteriology-2013

OMICS Group Conferences
Accelerating Scientific Discovery

International Congress on
Bacteriology & Infectious Diseases

November 20-22, 2013 DoubleTree by Hilton Baltimore-BWI Airport, USA

Does the Companion Diagnostics approach work for antibiotics?

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Abstract

As a result of cutbacks in big pharma R&D, there will be few new antibiotics available over the next decade.This situation is already challenging the medical community to respond with better management of mostly ageing products.

The worldwide rise of antibiotic resistance is outpacing the development of new antibiotics. In response to this dilemma, antibiotic stewardship programs at some hospitals have been initiated and implemented by the Infectious Disease specialists and Clinical Pharmacists. Some states have made antibiotics stewardship a legal requirement. Rapid molecular detection methods, based on both genomics and proteomics, have been developed by academic labs and in some cases brought to full in vitro diagnostic tests with major investments by diagnostics companies.Progressive improvements in the accuracy and reliability of these emerging platforms, and the suggested broadening of applicability, have been reported by major hospital pathology laboratories in the US and Europe.

In some instances, the two emerging fields of Antibiotic Stewardship and Rapid Diagnostics have been successfully integrated. Hospitals that effectivelyapply both disciplines have reported evidence of measurable improvements in patient quality of care, a result of better utilization of both new antibiotics and older generics. Selected quality improvement programs will be reviewed. These cases can serve as a template for antibiotic developers to consider a Companion Diagnostics approach to antimicrobial therapy.