

Insights of antimicrobials and their clinical implications

Letter from editor

Dear Colleagues,

It is my immense honour and privilege being a part of Editorial Board as Associate Editor of “Journal of Bacteriology & Mycology: Open Access (JBMOA)”. This global scientific dais provides a great opportunity for researchers and industry experts to share innovative ideas and scientific knowledge with long-sighted wisdom. To commence a scintillated scientific journey together, I (Dr Kirti Rani) would like to vocalize my vision for the respective journal and our cumulative farsighted mission for uprising intricate advancement of microbiology, mycology, bacteriology, healthcare, therapeutic and metabolomics.

Introduction

Antimicrobials are well known herbal or artificially synthesized substances that proposed to inhibit the growth of microbes as revolutionized novel drugs molecules to reduce ill effects of nosocomial infections and patient colonization. Because these days global crisis has been overarched due to various resilient microbes getting developed resistance very rapidly against various conventional antibiotics that usually prescribed for patient treatments. Hence, we need to combat these global issue by adopting various cost effective and sustainable approaches to prepare antimicrobials agents and herbal antioxidant preparations as effective antimicrobial therapies to boost Antimicrobial stewardship and reduce related de-escalation.¹⁻³ Among these, nanotechnology has been continuing proposed for improving nano-delivery system design for assisted delivery of anticancer agents that used in chemotherapy.⁴⁻⁶

Reconcile connections with proposed metaphysical sustainable approaches

Free radicals and associated antimicrobial prophylaxis are well known for causing various fatal pathogenesis like early aging, diabetes, cancers, atherosclerosis, neurological disorders, respiratory diseases and weak immunity especially in immune compromised HIV infections/AIDS patients. In last decades, many nutraceuticals food and supplements have been studied for their various properties like apoptotic, antioxidant, detoxification to combat cancers and various fatal diseases management.⁷⁻⁹ Herbal extracts and pharmaceutical preparation of *Platanus orientalis* plant leaves, silver mediated *Elettaria cardamomum* seeds (Elaichi seeds) were considered nontoxic and effective antioxidant and antimicrobial agents that can helpful especially in fields of medicine, therapeutics and textile. Herbal extracts of *Elettaria Cardamom* oil was also found to more potent neurotoxic agent against aluminum Induced Neurotoxicity in animal model including good handful spices which have good phytochemicals having radical scavenging properties.¹⁰⁻¹³ Hence, these proposed herbal nano-preparations can be used as more cost-effective and safe

Volume 12 Issue 2 - 2024

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Received: August 29, 2024 | **Published:** August 30, 2024

broad spectrum herbal therapeutic antimicrobial agents against various microbial caused pathogenesis.^{14,15} Medicinal and Microbial dynamism of *Ocimum basilicum* (Basil or Tulsi) was also studied for its effective anti-inflammatory, anti-apoptotic and antimicrobial properties that can be further proposed well to treat many clinical manifestations and complications caused by multidrug resistant infections. Previously, antimicrobial peptides were explored for their respective multifaceted role to treat various multidrug resistant infections including microbial plant pathogenesis as potent antimicrobial to address radical rise of antibiotic resistance threat.^{16,17}

Conclusion & futuristic outlook

Various antioxidants have been subjected to study their antimicrobial properties to be used for first line defense system for maintaining healthy lifestyle. Hence, the combination of several suboptimal concentrations of these safe detoxifying microbial supplements (beta-carotene, vitamin C, Vitamin E, Vitamin D etc) can have effective synergistic role to decrease the risk of multidrug resistant while treating cancers and coronary heart diseases.¹⁸ Next gene medical concern is for clinical threat of giant bacterium named *Epulopiscium fishelsoni* and *Thiomargarita namibiensis* that resulted due to only rise in multidrug resistant infections.¹⁹ Cryptococcosis is a known life threatening mycotic infection caused by *Cryptococcus neoformans* mainly diagnosed in HIV/AIDS patients having cryptococcal meningitis suffering from many multidrug resistant infections.^{19,20} Hence, uses of various antioxidant and antimicrobial agents along with general physician prescription and therapeutic procedures would further lead to help deceasing mortality and morbidity that resulted mostly as a consequence of treatment failures and rise in healthcare economic burden. This ethical clinical nexus includes reluctant use of antibiotics and would be helpful for clinical and healthcare practitioners to combat rise in multidrug resistant infections in future. There is also need to educate general public as well about life threatening health effects due to rise in multidrug resistant microbes.

With closing remark, I express my gratitude to respective and esteemed authors, reviewers, readers and global audience who have contributed to the journal's legacy embarking scientific sky-high. I am pleased to lead this article with zeal and enthusiasm to explore interdisciplinary approach with stunning debate. We work together with great optimistic approach that unwind the microbial and mycotic concepts and find out their insights for improved clinical implementation to be used in betterment of human mankind and environment.

With warm regards,

Dr. Kirti Rani

Associate Editor, Journal of Bacteriology & Mycology: Open Access

Acknowledgments

I would like to express my cordial appreciation to Amity University Uttar Pradesh, Noida (India).

Conflicts of interest

The author declare that there are no conflicts of interest.

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