The reason for the prevalence of non-toxigenic isolates of *Clostridium difficile* in the clinical samples

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Abstract

Introduction: The non-toxin production variant *C. difficile* $A^-/B^-/CDT^-$ are prevalent in clinical samples. But the reason for their high prevalence of these strains in the clinical diarrhea specimens has not yet been performed.

Materials & Methods: Minimum inhibitory concentration bacteria were performed by micro-dilution technique. About ~10^6 bacteria from 18-hour culture were inoculated to pre-reduced media containing ½×MIC of each antibiotic. After 24, 48 and 96 hours, 1/mL of culture was excluded and heated to killing vegetative forms and pre-activated the spores. The 100 of appropriate dilution are cultured on Columbia blood agar in the form of triplicates. After 72 hours the number of spore were counted based on the colony forming unit.

Results: The results showed that non-toxigenic isolates and historically strain of *C. difficile (*ATCC 9689) and the clinically isolates A+/B+/CDT- produced spore in free antibiotic and ½×MIC media. The spore production non-toxigenic isolates in free antibiotic media was like toxigenic (clinically and ATCC 9689 strain). The VAN, CLI and CAZ inhibited spore production in toxigenic as the same as non-toxigenic isolates ($A^-/B^-/CDT^-$) of *C. difficile* in the similar manner.

Discussion: Since non-toxigenic isolates are common in the clinical samples. Our research showed these isolates capable to produce spore in absence and the presence of antibiotic in similar manner to toxigenic strain. In total, they have lost toxin production ability but they kept the power sporulation and survival in the hospitalized patients who receive antibiotics.

Biography

Mohammad Moradi completed his Ph. D in Medical Microbiology, University of Manchester. He is currently working as a Assistance Professor of Medical Microbiology in the Department of Medical Microbiology Medical School, Kerman University of Medical Sciences, Kerman, Iran. He has published numerous research papers and articles in reputed journals and has various other achievements in Molecular diagnosis and anti-microbial resistance patterns. He has extended his valuable service towards the scientific community with his extensive research work.

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