

Epidemiology of integrons among multidrug-resistant pathogens; an Asian update

Najafi Maryam, Omidvar-Panah Maryam, Nikkhahi Farhad, Peymani Amir

Medical Microbiology Research Center, Qazvin University of Medical Sciences, Qazvin, Iran.

Abstract

Integrons are mobile genetic elements commonly found in the genome of bacteria, within plasmids, chromosomes, and transposons. They are recognized as important factors involved in genetic complexities, the formation of various phenotypes, and the emergence of bacterial adaptation. Integrons play a major role in capturing, expression, and transmission of antibiotic resistance genes and the resistance genes located on integrons can transmit from a strain to another one. Horizontal transmission of integrons is considered as the most important path of resistance genes transmission that leads to the emergence of multidrug resistance species. The genes carrying integrons are found in most Gram-negative pathogens. This review focuses on the epidemiology of classes 1, 2, and 3 integrons among clinically important bacteria in Asian countries.