Received Date : 27-May-2014
Accepted Date : 09-Jun-2014
Article type : Invited Review

The difficult-to-control spread of carbapenemase producers in *Enterobacteriaceae* worldwide

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Spread of carbapenemase producers in Enterobacteriaceae is now identified worldwide. Three main carbapenemases are reported which belong to three classes of ß-lactamases that are KPC, NDM and OXA-48. The main reservoirs of KPC are Klebsiella pneumoniae in the USA, Israel, Greece and Italy, of NDM are K. pneumoniae and Escherichia coli in the Indian subcontinent, and of OXA-48 are K. pneumoniae and E. coli in North Africa

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/1469-0691.12719

and Turkey. KPC producers remain mostly identified in nosocomial isolates whereas NDM and OXA-48 producers are both nosocomial and community-acquired pathogens. Control of their spread is still possible in hospital settings and relies on the use of rapid diagnostic techniques and strict implemention of hygiene measures.

Although rarely reported a decade ago, carbapenemase-producers in *Enterobacteriaceae*, they are extensively reported nowadays. Different groups of enzymes possessing carbapenemase properties have emerged, and are spreading worldwide concomitantly. Some of those enzymes hydrolyze carbapenems very efficiently whereas others exhibit weak activity against carbapenems. Some include broad-spectrum cephalosporins in their hydrolytic pattern, some do not. Some have an activity that may be inhibited (at least partially) by ß-lactamase inhibitors (such as clavulanic acid, tazobactam) whereas most are not inhibited by clinically-available inhibitors. However, those significant differences do not really explain the success of the spread of specific enzymes in specific countries or areas [1].

The main features related to the epidemiology of those enzymes are as follows;