

The Modified Hodge Test: Is it an appropriate method for detection of KPC enzyme or not?

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Dear Editor,

The carbapenemas production is the main mechanisms of resistance to carbapenem antibiotics in Gram-negative bacilli (1). In recent years, prevalence of *Klebsiella pneumoniae* Carbapenemase (Bla_{KPC}) or KPC phenotype has been reported in Gram-negative bacteria isolated from Iranian patients using the Modified Hodge Test (MHT)(2-8). According to CLSI (Clinical Laboratory Standards Institute) and CDC (Centers for Disease Control and Prevention) guideline, MHT is being used for detection of carbapenemases in *Enterobacteriaceae* family and not Bla_{KPC} or KPC phenotype (9-11). Other carbapenemase such as Metallo-Beta-Lactamase (Bla_{NDM}, Bla_{VIM} and Bla_{IMP}), Class A of carbapenemases (Bla_{SME-1}) and OXA type of carbapenemases can also produce a positive results in MHT method (9-12). It should be noted, in some countries such as USA, the most common carbapenemase found in *Enterobacteriaceae* is Bla_{KPC}. Therefore this test has a high sensitivity for detection of Bla_{KPC} in this country (10,11), but in other countries, such as Greece, the most common carbapenemase found in *Enterobacteriaceae* is Bla_{VIM}, so, the Bla_{VIM} produce a positive MHT in this country (12). Considering the facts mentioned, these reports of Iran(2-8) cannot specify the presence of KPC enzymes in the isolates obtained

from Iranian patients and the MHT test does not have a high sensitivity for Bla_{KPC} identification in Iran and other countries unless it is confirmed by molecular methods. The Gram-negative bacilli such as *Enterobacteriaceae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii* are the most important bacteria in nosocomial infection (13). To date, these bacteria are almost multidrug resistant (MDR) and show an outstanding ability to rapidly evolve resistance to newer antibiotics (14). For these isolates, therapeutic options are limited to antibacterial agents such as carbapenems (15), for these reasons, the accurate detection of carbapenemase-producing isolates is the first critical step in limiting and controlling the spread of the carbapenem of resistant isolates and report of a new mechanism of resistance to antibiotic cause a serious problem on the therapeutic choices existing for treatment of infections (12,16). Therefore, attempts to reduce spread of antibiotic resistance are based on a detailed knowledge of the mechanisms of resistance (16).

Conflict of interest

All authors confirm that there are no conflicts of interest.

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