CHARACTERIZATION OF KPC-PRODUCING KLEBSIELLA PNEUMONIAE WITH DECREASED CEFEPIME SUSCEPTIBILITY

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INTRODUCTION

Klebsiella pneumoniae ceftazidime-resistant isolates have been described worldwide and this carbapenem-hydrolyzing β-lactamase, KPC, is commonly identified in K. pneumoniae strains (1). KPC is an AmpC hyper-producing β-lactamase (2) and is known to evolve as a consequence of an integron-containing Tn4401b element. Isolates lacking KPC enzymes are intermediate or resistant to cefepime (3). Other β-lactamase-encoding genes including SHV, TEM, OXA-2, OXA-30, ACT, DHA, SHV-30, DHA4, and OOXA-51 can encode β-lactamases with reduced activity against cefepime (4). For this reason, KPC expression was observed when compared to the ATCC control strain.

RESULTS

None of the isolates had hyperexpression of AcrAB-TolC efflux pump when compared to the ATCC control strain.

CONCLUSIONS

• Cefepime MIC values seemed not affected by the presence of the KPC enzyme and the genetic location of the KPC gene.
• The findings of strains having KPC enzymes and low cefepime or carbapenem MIC results require further investigation to clarify the role of other mechanisms responsible for decreased β-lactam susceptibility.

REFERENCES


