Tipo	Periódico
Título	Emergence of polymyxin B resistance in a polymyxin B-susceptible KPC producing *Klebsiella pneumoniae* causing bloodstream infection in a neutropenic patient during polymyxin B therapy
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Resumo	The emergence of resistance to polymyxins in KPC-producing *Klebsiella pneumoniae* isolates has been a major clinical problem. This study evaluated the molecular mechanisms associated with polymyxin B (PMB) resistance that emerged in a previously PMB-susceptible KPC-2-producing *K. pneumoniae* during PMB therapy for a bloodstream infection in a neutropenic patient. The first isolate (PMB-susceptible) was obtained while the patient was receiving meropenem and other isolates were recovered from 2 sets of blood cultures in different dates while the patient was receiving PMB therapy (4 of 6 blood cultures bottles yielded isolates with full PMB resistance). The population analysis profile of the first isolate revealed the growth of resistant subpopulations with PFGE profile distinct from the parental isolate but undistinguishable from those obtained in subsequent days under PMB exposure. Resistant subpopulations were obtained from all parental PMB-susceptible and in one PMB-resistant isolate recovered from the patient. The molecular mechanism observed in the hetero-resistant subpopulations (IS*1-like* in *mgrB*-promoter region, increased *rstB* transcription with no mutation and non-identified mechanism) differed from those found in the PMB-resistant isolates, in which no mutation or transcriptional alterations were detected. This study showed that the mechanism of resistance to PMB that emerged during PMB therapy was not related to those observed in subpopulations selected *in vitro* from PMB-susceptible isolates recovered from the patient. The absence

	of mutations in the former isolates may be due to adaptive resistance occurred because of sub-optimal PMB levels as well as amikacin and meropenem used in combination.
Fomento	