
Abstract:

BACKGROUND & AIMS: Some home parenteral nutrition (HPN) patients develop catheter related bloodstream infections (CRBSI) despite using an anti-microbial catheter lock solution taurolidine. The aim of this study was to assess whether long-term use of taurolidine leads to selective growth of microorganisms with increased taurolidine minimum inhibitory concentrations (MICs).

METHODS: Bloodstream infections among 158 HPN patients with long-term taurolidine catheter locking were analyzed retrospectively. CRBSI-diagnosis was based on clinical symptoms, culture results, and absence of other sources of infections. CRBSIs were classified as definitive, probable or possible and exit site/tunnel/port or luminal infections. MICs were determined by broth microdilution.

RESULTS: Between January 2009 and April 2011, 14 patients developed at least one luminal CRBSI episode during long-term taurolidine catheter locking (median (range) = 451 (78-1394) days). Coagulase-negative Staphylococcus species or Staphylococcus aureus predominated among CRBSI-causing Gram-positive bacteria. Taurolidine MICs were 512 mg/l or less in 50%
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of these isolates (MIC(50)). Taurolidine MIC(50) for Klebsiella pneumoniae and Escherichia coli, the most common CRBSI-causing Gram-negative bacteria, were 256 and 512 mg/l, respectively. Taurolidine MIC(50) among CRBSI-causing Candida albicans were 2048 mg/l.

CONCLUSION: Adaptation of microorganisms to taurolidine has not yet emerged as a factor in the pathogenesis of CRBSI in HPN patients with long-term taurolidine catheter locking.