

This study aimed to (1) characterize the incidence, clinical presentation, and epidemiology of CRBSIs and (2) identify risk factors for CRBSIs in children receiving home parenteral nutrition” Wozniak et al (2018).

Abstract:

BACKGROUND: Few studies have examined the epidemiology and risk factors for the development of outpatient-acquired catheter-related bloodstream infections (CRBSIs) in children receiving home parenteral nutrition. This study aimed to (1) characterize the incidence, clinical presentation, and epidemiology of CRBSIs and (2) identify risk factors for CRBSIs in children receiving home parenteral nutrition.

METHODS: A longitudinal database approved by our Institutional Review Board was created to prospectively track CRBSIs in the UCLA pediatric population from January to December 2012. Eligible patients included those < 18 years old receiving home parenteral nutrition.

RESULTS: Thirty of 60 patients (50%) were diagnosed with 66 CRBSIs, for an overall CRBSI rate of 3.6 per 1000 catheter days. Of the CRBSIs, 73% were due to single microorganisms and 27% were polymicrobial. There was a significant difference in median (range) time for blood cultures to turn positive depending on type of CRBSIs ($p = 0.03$), with polymicrobial infections detected at 13.4 (8.7-24.3) hours, gram-negative infections at 16.5 (9-30.8) hours, and gram-positive infections at 18.9 (8.4-37.1) hours. The most common presenting symptom was fever (82%), followed by gastrointestinal symptoms (42%) and chills (29%). The only significant multivariate risk factor for CRBSIs was presence of a feeding tube (2.3-fold increase in CRBSI risk, $p = 0.04$).

DISCUSSION: Outpatient-acquired CRBSIs are common in children receiving home parenteral nutrition. CRBSIs typically present with fever, but are also associated with gastrointestinal and/or respiratory symptoms. The presence of feeding tubes may predispose children on home parenteral nutrition to developing CRBSIs.

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Reference:

Wozniak, L.J., Bechtold, H.M., Reyen, L.E., Chan, A.P., Marcus, E.A. and Vargas, J.H. (2018) Epidemiology and Risk Factors for Outpatient-Acquired Catheter-Related Bloodstream Infections in Children Receiving Home Parenteral Nutrition. JPEN Journal of Parenteral and Enteral Nutrition. February 15th. .

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