Children with short bowel syndrome (SBS) receiving home parenteral nutrition (HPN) are predisposed to ambulatory central line-associated bloodstream infection (A-CLABSI). Data describing risk factors of this infection in children are limited” Seddik et al (2019).

Abstract:

BACKGROUND: Children with short bowel syndrome (SBS) receiving home parenteral nutrition (HPN) are predisposed to ambulatory central line-associated bloodstream infection (A-CLABSI). Data describing risk factors of this infection in children are limited.

METHODS: Retrospective cohort, single-center, case-crossover study of children ≤18 years old with SBS receiving HPN from January 2012 to December 2016. Univariate and multivariate mixed effect Poisson regression identified the relative risk (RR) of A-CLABSI with proposed risk factors.

RESULTS: Thirty-five children were identified; median follow-up was 30 months. A-CLABSI rate was 4.2 per 1000 central line (CL) days. Univariate analysis identified younger age (RR: 0.92 per 12-month increase [95% confidence interval {CI}: 0.85-0.99; P = 0.036]), shorter small intestine length (RR: 0.96 per 10-cm increase [95% CI: 0.92-0.99; P = 0.008]), lower citrulline level (RR: 0.86 per 5-nmol/mL increase [95% CI: 0.75-0.99; P = 0.036]), and recent CL break (RR: 1.55 [95% CI: 1.06-2.28; P = 0.024]) as risk factors for A-CLABSI. Multivariate analysis showed increased A-CLABSI with clinical diagnosis of small intestine bacterial overgrowth (SIBO) (RR: 1.87 [95% CI: 1.1-3.17; P = 0.021]) and CL breaks (RR: 1.49 [95% CI: 1-2.22; P = 0.024]).

CONCLUSIONS: Factors influencing gut integrity increase A-CLABSI rate, supporting translocation as an important mechanism and target for prevention. Clinical diagnosis of SIBO increases A-CLABSI rate, but whether dysbiosis or diarrhea is responsible is an area for future research. CL maintenance is crucial, and prevention of breaks would likely decrease A-CLABSI rate.
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