To determine which factors confer the greatest risk of central line-associated bloodstream infection (CLABSI) in children with intestinal failure and fever presenting to an emergency department (ED), and to assess whether a low-risk group exists that may not require the standard treatment of admission for 48 hours on intravenous antibiotics pending culture results" Eisenberg et al (2018).

Abstract:

OBJECTIVES: To determine which factors confer the greatest risk of central line-associated bloodstream infection (CLABSI) in children with intestinal failure and fever presenting to an emergency department (ED), and to assess whether a low-risk group exists that may not require the standard treatment of admission for 48 hours on intravenous antibiotics pending culture results.

STUDY DESIGN: This retrospective cohort study included children with intestinal failure and fever presenting to an ED over a 6-year period. Multivariable models were created using risk factors selected a priori to be associated with CLABSI as well as univariate predictors with $P < .2$.

RESULTS: Among 81 patients with 278 ED encounters, 132 (47.5%) CLABSI episodes were identified. Multivariable models showed higher initial temperature in the ED (aOR, 1.99; 95% CI, 1.25-3.17) and low white blood cell count (aOR, 2.65; 95% CI, 1.03-6.79) and platelet count (aOR, 2.65; 95% CI, 1.20-5.87) relative to age-specific reference ranges were strongly associated with CLABSI. Among the 63 encounters in which the patient had none of these risk factors, the rate of CLABSI was 25.4%.

CONCLUSIONS: Children with intestinal failure who present to the ED with fever have high rates of CLABSI. Although higher temperature in the ED, lower white blood cell count, and lower platelet count are strongly associated with CLABSI, patients without these risk factors frequently have positive blood cultures as well. Antibiotics should, therefore, be given to all children with intestinal failure and fever until CLABSI is ruled out.

Reference:

Eisenberg, M., Monuteaux, M.C., Fell, G., Goldberg, V., Puder, M. and Hudgins, J. (2018) Central Line-Associated Bloodstream Infection among Children with Intestinal Failure Presenting to the Emergency Department with Fever. The Journal of Pediatrics. March 14th. .

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