We were able to identify risk factors and develop a clinical prediction model for CLABSI in children presenting to the emergency department” Figueroa-Phillips et al (2019).

Abstract:

OBJECTIVE: The majority of the children with a central line who present to the emergency department with fever or other signs of bacteremia do not have a central line-associated bloodstream infection (CLABSI). Our objective was to develop a clinical prediction model for CLABSI among this group of children in order to ultimately limit unnecessary hospital admissions and antibiotic use.

METHODS: We performed a nested case-control study of children with a central line who presented to the emergency department of an urban, tertiary care children’s hospital between January 2010 and March 2015 and were evaluated for CLABSI with a blood culture.

RESULTS: The final multivariable model developed to predict CLABSI consisted of 12 factors: age younger than 5 years, black race, use of total parenteral nutrition, tunneled central venous catheter, double-lumen catheter, absence of other bacterial infection, absence of viral upper respiratory tract infection symptoms, diarrhea, emergency department temperature greater than 39.5°C, fever prior to presentation, neutropenia, and spring/summer season. The clinical prediction score had good discrimination for CLABSI with a c-statistic of 0.81 (confidence interval, 0.77-0.85). A cut point less than 6 was associated with a sensitivity of 98.5% and a negative predictive value of 99.2% for CLABSI.

CONCLUSIONS: We were able to identify risk factors and develop a clinical prediction model for CLABSI in children presenting to the emergency department. Once validated in future study, this clinical prediction model could be used to assess the need for hospitalization and/or antibiotics among this group of patients.

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