This study aims to investigate the early (≤30 days) and late (>30 days) infectious complications of CVLs placed in pediatric patients with and without neutropenia” Cunningham et al (2019).

Abstract:

BACKGROUND: The infectious risk of central venous line (CVL) placement in children with neutropenia (absolute neutrophil count <500/mm3) is not well defined. This study aims to investigate the early (≤30 days) and late (>30 days) infectious complications of CVLs placed in pediatric patients with and without neutropenia.

METHODS: A retrospective review was conducted of all CVLs placed by pediatric surgeons at two institutions from 2010 to 2017. Multivariable logistic regression was performed to identify risk factors for line infection. Propensity score-matched cohorts of patients with and without neutropenia were compared in a 1:1 ratio. Wilcoxon rank-sum, Chi-square, Fisher’s exact, and log-rank tests were also performed.

RESULTS: Review identified 1,102 CVLs placed in 937 patients. Fifty-four patients were neutropenic at the time of placement. Multivariable analysis demonstrated tunneled catheters and subclavian access as associated with line infection. The propensity score-matched cohort included 94 patients, 47 from each group. Demographic and preoperative data were similar between the groups (p > 0.05). Patients with neutropenia were no more likely to develop early (4.3% vs. 2.1%, p = 1.000) or late (19.1% vs. 17.0%, p = 1.000) infectious complications than patients without neutropenia, with similar median time to infection (141 vs. 222 days, p = 0.370).

CONCLUSION: A policy of selective CVL placement in neutropenic patients with standardized postoperative line maintenance is safe. Future directions include defining criteria by which neutropenic patients could be prospectively selected for safe CVL placement.

LEVEL OF EVIDENCE: II – Retrospective cohort study.
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