The incidence of venous thromboembolism (VTE) is rising among inpatients in US hospitals, especially among kids with central venous catheters (CVCs) in the pediatric intensive care unit (PICU)” Tran et al (2017).

Abstract

BACKGROUND: The incidence of venous thromboembolism (VTE) is rising among inpatients in US hospitals, especially among kids with central venous catheters (CVCs) in the pediatric intensive care unit (PICU).

OBJECTIVES: To identify a sub-group of “VTE-rich” population among PICU children, and to assess the effect of VTE on morbidity and mortality.

METHODS: Data was extracted from a multicenter Virtual PICU Database, or VPS, for children with a CVC and presence of a VTE. The primary outcome variable was all cause mortality and secondary outcome measure was prolonged mechanical ventilation. Primary diagnoses and Pediatric risk of mortality 2 (PIM 2) score were also recorded.

RESULTS: The database identified 158,299 PICU patients who had a CVC. A total of 1602 patients had VTE (103 per 10,000 PICU patients). Multivariate analysis showed increased risk of VTE in patients who were <1year old (OR 1.48; 1.30-1.68), mechanically ventilated (OR 2.48; 2.07-2.98), had either a diagnostic (OR 2.32; 1.94-2.78) or therapeutic cardiac catheterization (OR 2.06; 1.66-2.55), PICC (OR 3.91; 3.50-4.37), and percutaneous CVC (OR 3.99; 3.48-4.61). Primary diagnoses associated with VTE were endocrinologic, immunologic, and gastrointestinal disorders. PICU patients with CVC and VTE had increased odds of mortality (OR 1.71; 1.47-2.00) after adjusting for factors associated with mortality, and fewer Ventilator Free Days (VFD) than patients without VTE.

CONCLUSIONS: Critically ill children with CVC have a significant risk of developing VTE.
Identification of the above “VTE-rich” population may aid in design of clinical trials aimed at prevention of VTE among hospitalized PICU children.

Reference:


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