The objective of this work was to systematically review literature on pediatric hospital-acquired venous thromboembolism risk factors and risk-assessment models, to inform future prevention research" Mahajerin et al (2015).

Reference:

Mahajerin, A., Branchford, B.R., Amankwah, E.K., Raffini, L., Chalmers, E., van Ommen, C.H. and Goldenberg, N.A. (2015) Hospital-associated venous thromboembolism in pediatrics: a systematic review and meta-analysis of risk factors and risk assessment models. Haematologica. May 22nd. .

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Abstract:

Hospital-associated venous thromboembolism, including deep vein thrombosis and pulmonary embolism, is increasing in pediatric centers. The objective of this work was to systematically review literature on pediatric hospital-acquired venous thromboembolism risk factors and risk-assessment models, to inform future prevention research. We conducted a literature search on pediatric venous thromboembolism risk via PubMed (1946-2014) and Embase (1980-2014). Data on risk factors and risk-assessment models were extracted from case-control studies, while prevalence data on clinical characteristics were obtained from registries, large (n>40) retrospective case series, and cohort studies. Meta-analyses were conducted for risk factors or clinical characteristics reported in at least 3 studies. Heterogeneity among studies was assessed with Cochrans Q and quantified by I2 statistic. From 394 initial articles, 60 met final inclusion criteria (20 case-control studies and 40 registries/large case series/cohort studies). Significant risk factors among case-control studies were: intensive care unit stay (OR: 2.14, 95%CI: 1.97-2.32); central venous catheter (OR: 2.12, 95%CI: 2.00-2.25); mechanical ventilation (OR: 1.56, 95%CI: 1.42-1.72); and hospital length of stay (per each additional day, OR: 1.03, 95%CI: 1.03-1.03). Three studies developed/applied risk-assessment models from a combination of these risk factors. Fourteen significant clinical characteristics were identified through non-case-control studies. This meta-analysis confirms central venous catheter, intensive care unit stay, mechanical ventilation, and length of stay as pediatric risk factors. A few pediatric hospital-acquired venous thromboembolism risk scores have emerged employing these factors. Prospective validation is necessary to inform risk-stratified prevention trials.

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