



Intravenous literature: Revel-Vilk, S., Yacobovich, J., Tamary, H., Goldstein, G., Nemet, S., Weintraub, M., Paltiel, O. and Kenet, G. (2010) Risk factors for central venous catheter thrombotic complications in children and adolescents with cancer. *Cancer*. Jun 8.

#### Abstract:

**BACKGROUND:** The use of central venous catheters (CVCs) has greatly improved the quality of care in children with cancer, yet these catheters may cause serious infectious and thrombotic complications. The aim of this prospective registry study was to assess the host and CVC-related risk factors for CVC-created thrombotic complications.

**METHODS:** Patients undergoing CVC insertion for chemotherapy were followed prospectively for CVC complications. At the time of enrollment, demographic, clinical, and CVC-related data, and family history of thrombosis were collected. Survival and Cox regression analyses were performed.

**RESULTS:** A total of 423 CVCs were inserted into 262 patients for a total of 76,540 catheter days. The incidence of CVC-related deep-vein thrombosis (DVT) was 0.13 per 1000 catheter-days (95% confidence interval [CI], 0.06-0.24). Insertion of peripherally inserted central catheters (PICCs) and insertion in an angiography suite significantly increased the risk of symptomatic CVC-related DVT. The incidence of CVC occlusion was 1.35 per 1000 catheter-days (95% CI, 1.1-1.63). Positive family history of thrombosis significantly increased the risk of CVC occlusion (hazard ratio [HR], 2.16; 95% CI, 1.2-3.8). The CVC-related risk factors were insertion of Hickman catheters, insertion in angiography suite, and proximal-tip location. Patients developing at least 1 episode of both CVC occlusion and infection had an increased risk for developing symptomatic CVC-related DVT (HR, 4.15; 95% CI, 1.2-14.4).

**CONCLUSIONS:** Both patient-related and CVC-related factors are associated with higher risk of symptomatic thrombotic complications. These risk factors could be used in the clinical setting and in developing future studies for CVC thromboprophylaxis.



