Abstract:

This study aimed to examine whether the transfusion of donor blood products, abnormal coagulation or inflammation increase the risk of venous thromboembolism (VTE) associated with central venous catheters (CVC) in neonates. A retrospective case-control study including 25 neonates with CVC-associated VTE and tightly matched controls with CVC, but without VTE was performed. The frequency of (i) abnormal coagulation screens, (ii) increased inflammatory marker proteins before catheter insertion, or (iii) catheter-associated blood stream infection did not differ between cases and controls. No difference was found in the number or type of transfusions within the last day before VTE. However, the total number of transfusions in the time period between catheter placement and VTE diagnosis (median 6.5 d) was significantly higher (P<0.001) in cases (44 red blood cell, 61 plasma, and 18 platelet transfusions) compared with an equal median time period of 7 days postcatheter insertion in controls (26/24/11). In conclusion, intensive transfusion treatment (through a peripheral line) after CVC insertion was associated with a higher risk of VTE (odds ratio 7.58; 95% confidence interval, 0.84-68.46), suggesting that transfusion of adult donor blood products into the cellular and plasmatic hemostatic system of the neonate increases the risk for CVC-associated VTE.

Reference: