

We examined the risk of venous thromboembolism in deep veins of the arm, leg and chest following PICC placement” Greene et al (2015).

Reference:

Greene, M.T., Flanders, S.A., Woller, S.C., Bernstein, S.J. and Chopra, V. (2015) The Association Between Peripherally Inserted Central Catheter Use and Venous Thromboembolism in Upper and Lower Extremities. The American Journal of Medicine. May 1st. .

PICC associated venous thromboembolism in upper and lower extremities
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Abstract:

BACKGROUND: Peripherally inserted central catheters (PICCs) are associated with upper extremity-deep vein thrombosis. Whether they are also associated with lower extremity-deep vein thrombosis or pulmonary embolism is unknown. We examined the risk of venous thromboembolism in deep veins of the arm, leg and chest following PICC placement.

METHODS: We conducted a multicenter, retrospective, cohort study of 76,242 hospitalized medical patients from 48-Michigan hospitals. PICC presence, comorbidities, venous thrombosis risk factors, and thrombotic events within 90-days from hospital admission were ascertained by phone and record review. Cox proportional hazards models were fit to examine the association between PICC placement and 90-day hazard of upper- and lower-extremity deep vein thrombosis or pulmonary embolism, adjusting for patient-level characteristics and natural clustering within hospitals.

RESULTS: 3,790 patients received a PICC during hospitalization. From hospital admission to 90-days, 876 thromboembolic events (208 upper-extremity, 372 lower-extremity deep vein thromboses and 296 pulmonary emboli) were identified. Following risk-adjustment, PICC use was independently associated with all-cause venous thromboembolism (HR=3.16, 95% confidence interval =2.59-3.85), upper-extremity deep vein thrombosis (HR=10.49, 95%CI 7.79-14.11) and lower-extremity deep vein thrombosis (HR=1.48, 95%CI=1.02-2.15). PICC use was not associated with pulmonary embolism (HR=1.34, 95%CI=0.86-2.06). Results were robust to sensitivity analyses incorporating receipt of pharmacologic prophylaxis during hospitalization.



CONCLUSIONS: PICC use is associated with upper- and lower-extremity deep vein thrombosis. Weighing the thrombotic risks conferred by PICCs against clinical benefits appears necessary.

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