

We analysed a cohort of cancer patients subjected to PICC insertion in a single cancer centre for the incidence of all-type vascular thromboembolism (VTE) and investigated relative risk factors” Jones et al (2017).

Abstract:

**BACKGROUND:** Deep vein thrombosis (DVT) is a common complication of peripherally inserted central catheters (PICCs). PICCs are increasingly utilised in the management of cancer patients, a group which carries both additional risks for vascular thromboembolism as well as for complex morbidity. We analysed a cohort of cancer patients subjected to PICC insertion in a single cancer centre for the incidence of all-type vascular thromboembolism (VTE) and investigated relative risk factors.

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**METHODS:** In this clinical audit, the records of patients referred for PICC insertion in our centre in the period between 1/1/2011 and 1/4/2014 were retrospectively reviewed. The primary outcomes investigated were a) PICC-related deep vein thrombosis (PRDVT) and b) distant VTE (lower limb DVT and pulmonary embolism). 4Fr single lumen PICCs were placed in all patients. The Kaplan Meier method was used to study time from PICC insertion to PRDVT/VTE. Survival curves were compared using the log rank method. Logistic and Cox regression analyses were used to assess local, distant and combined endpoints.

**RESULTS:** Four hundred ninety patients were included in the analysis of which 27 (5.5%) developed a PRDVT. Statistically significant risk factors for developing PRDVT in multivariate analysis included more than one attempt for insertion (OR 2.61, 95%CI: 1.12-6.05) and the use of fluoropyrimidine containing chemotherapy (OR 4.27, 95%CI 1.3-14.07). Twenty-six patients developed a distant VTE. Male gender was the only significant risk factor for distant VTE. When all-type VTE were considered together fluoropyrimidine containing chemotherapy (OR 4.54, 95% CI 1.63-12.61), male gender (OR 2.03, 95% CI 1.04-3.93) and white cell count (OR 1.12, 95% CI 1.00-1.26) were statistically significant as risk factors in this analysis.

**CONCLUSIONS:** This is a large study of VTE following PICC insertion in cancer patients which also looks at the rate of distant VTE. The observed PRDVT incidence is comparable with available literature. Fluoropyrimidine containing chemotherapy and more than one attempt for PICC insertion were independent predictors of PICC-associated VTE whilst the former remained an independent predictor of all-type VTE. Anticoagulation did not prevent thrombotic events in this cohort.

### **Full Text**

Reference:

Jones, D., Wismayer, K., Bozas, G., Palmer, J., Elliott, M. and Maraveyas, A. (2017) The risk of venous thromboembolism associated with peripherally inserted central catheters in ambulant cancer patients. *Thrombosis Journal*. September 19th. eCollection 2017.

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