Use of PICC for chemotherapy administration was associated with a low all-AEs rate. The basilic vein was the safer site, and valved systems had fewer AEs than open systems” Campagna et al (2019).

Abstract:

BACKGROUND: Peripherally inserted central catheters (PICCs) are central venous catheters (CVCs) that are commonly used in onco-hematologic settings for chemotherapy administration. As there is insufficient evidence to recommend a specific CVC for chemotherapy administration, we aimed to ascertain PICC-related adverse events (AEs) and identify independent predictors of PICC removal in patients with cancer receiving chemotherapy.

MATERIALS AND METHODS: Information on adult patients with cancer with a PICC inserted for chemotherapy administration between September 2007 and December 2014 was extracted from six hospital databases. The primary outcome was PICC removal due to PICC-related AEs (occlusion, infection, or symptomatic thrombosis). Independent predictors of PICC removal were identified using a multivariate Cox regression model.

RESULTS: Among the 2,477 included patients, 419 PICC-related AEs (16.9%; 1.09 AEs per 1,000 PICC-days) were reported. AEs increased when PICC was inserted at the brachial site (hazard ratio [HR], 1.37; 95% confidence interval [CI], 1.02-1.84) and with open systems (HR, 1.89; 95% CI, 1.24-2.88) and decreased in older men (HR, 0.63; 95% CI, 0.49-0.81).
CONCLUSION: Use of PICC for chemotherapy administration was associated with a low all-AEs rate. The basilic vein was the safer site, and valved systems had fewer AEs than open systems. More research is needed to explore the interaction between AEs, sex, and age.

IMPLICATIONS FOR PRACTICE: These findings provide clinicians with evidence that peripherally inserted central catheters (PICCs) are safe for chemotherapy administration. They also suggest that clinicians should limit the use of open systems when long chemotherapy regimens are scheduled. Moreover, alternatives to PICCs should be considered when administering chemotherapy to young men.

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