



Systemic chemotherapy can be administered either through a peripheral vein (IV), or centrally through peripherally inserted central catheter (PICC), totally implanted vascular access devices (PORTs) or tunnelled cuffed catheters. Despite the widespread use of systemic chemotherapy in patients with breast cancer, the optimal choice of vascular access is unknown” Robinson et al (2018).

Abstract:

**IMPORTANCE:** Systemic chemotherapy can be administered either through a peripheral vein (IV), or centrally through peripherally inserted central catheter (PICC), totally implanted vascular access devices (PORTs) or tunnelled cuffed catheters. Despite the widespread use of systemic chemotherapy in patients with breast cancer, the optimal choice of vascular access is unknown.

**OBJECTIVE:** This systematic review evaluated complication rates and patient satisfaction with different access strategies for administering neo/adjuvant chemotherapy for breast cancer.

**EVIDENCE REVIEWED:** Ovid Medline, EMBASE and the Cochrane Central Register of Controlled Trials were searched from 1946 to September 2017. Two reviewers independently assessed each citation. The Newcastle-Ottawa scale was used to assess the quality of cohort and case-

control studies.

**FINDINGS:** Of 1584 citations identified, 15 unique studies met the pre-specified eligibility criteria. There were no randomised studies comparing types of vascular access. Reports included six single-institution retrospective cohort studies, one retrospective multi-institution cohort, one retrospective cohort database study, five prospective single-institution studies, one prospective multi-institution study and one nested case-control study. Median complication rates were infection: 6.0% PICC (2 studies) versus 2.1% PORT (8 studies); thrombosis: 8.9% PICC (2 studies) versus 2.6% PORT (9 studies); extravasation: 0 PICC (1 study) versus 0.4% PORT (4 studies) and mechanical issues: PICC 3.8% (1 study) versus 1.8% PORT (9 studies). Satisfaction/quality of life appeared high with each device.

**CONCLUSION:** In the absence of high-quality data comparing vascular access strategies, randomised, adequately powered, prospective studies would be required to help inform clinical practice and reduce variation.

Reference:

Robinson, A., Souied, O., Bota, A.B., Levasseur, N., Stober, C., Hilton, J., Kamel, D., Hutton, B., Vandermeer, L., Mazzarello, S., Joy, A.A., Fergusson, D., McDiarmid, S., McInnes, M., Shorr, R. and Clemons, M. (2018) Optimal vascular access strategies for patients receiving chemotherapy for early-stage breast cancer: a systematic review. July 4th. .

doi: 10.1007/s10549-018-4868-x.

