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Abstract:

Introduction: Peripherally inserted central venous catheters (PICCs) may adversely impact future successful arteriovenous fistulae (AVF). As part of a quality improvement project, the performance of tunneled small bore tunneled central venous catheters (TSB-CVCs), as alternatives to PICCs, was evaluated.

Methods: A retrospective observational study, involving individuals  $\geq 18$  years of age who underwent TSB-CVC placement by Interventional Radiology at Mayo Clinic, Rochester, MN between 1/1/2010 and 8/30/2013.

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Findings: The study cohort included 92 patients with a median age of 55 (46-67) years, who underwent 108 TSB-CVC placements. Baseline renal disease was present in 71% (77/108). Most TSB-CVCs were placed in hospitalized patients (94%; 102/108); five French in diameter (61%; 66/108) and located in an internal jugular vein (84%; 91/108). Median catheter indwelling time was 20 (11-43) days (n = 84). TSB-CVC-related bloodstream infection, deep venous thrombosis (DVT), and superficial venous thrombosis (SpVT) rates per line were 0.009 (1/108), 0.018 (2/108), and 0.009 (1/108), respectively. Venous outcomes in a subgroup of 54 patients, who had documented PICC placements (n = 161) in addition to TSB-CVC (n = 58) were compared. TSB-CVC-DVT rate was lower than the PICC-DVT rate (0.017 [1/58] vs. 0.106 per line [17/161]; P = 0.04). The TSB-CVC-SpVT rate was not different from the PICC-SpVT rate (0 [0/58] vs. 0.037 [6/161] per line; P = 0.14).

Discussion: TSB-CVCs demonstrated an excellent safety profile in our study. These catheters should be preferentially utilized for arm vein preservation in advanced kidney disease. Their impact on future AVF success needs further evaluation.

Reference:

Bhutani, G., El Ters, M., Kremers, W.K., Klunder, J.L., Taler, S.J., Williams, A.W., Stockland, A.H. and Hogan, M.C. (2016) Evaluating safety of tunneled small bore central venous catheters in chronic kidney disease population: A quality improvement initiative. Hemodialysis International. September 20th. .

doi: 10.1111/hdi.12484.

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