

Prospective analysis of preoperative ultrasonography vascular assessment and outcome of surgical arteriovenous access in the professorial surgical unit, teaching hospital Jaffna.

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Introduction The most common modality for renal replacement therapy is haemodialysis (HD). Vascular access (VA) for HD should have optimum functionality with minimum complications. Preoperative ultrasonography assessment of the vessels is not practiced widely. Though, KDOQI recommends preoperative ultrasonography vascular assessment for high-risk patients, European Society for Vascular Surgery guidelines recommends it for all patients.

Objectives This study aimed to assess the un-assisted fistula rate and access abandonment rate, after preoperative combined clinical and ultrasonography assessment of vessel quality, and to assess post-operative complications of haemodialysis vascular access.

Methodology This descriptive study was conducted among patients who underwent surgical arteriovenous (AV) access creation from September 2021 to June 2022 and data were collected prospectively.

Results During our study period, 72 patients underwent AV access creation and only 55 patients were followed up due to poor compliance (male 76%, female 24%). The preferred type of AV access was selected after preoperative clinical and ultrasonography evaluation for optimum vessel quality. Most of the patients underwent brachiocephalic fistula (78%), whereas 15% was radio cephalic fistula and 7% had brachiobasilic fistula. Among this cohort, 54% haemodialysis (HD) was initiated before the surgery. During follow-up, the un-assisted fistula rate was 76% and the access abandonment rate was 12%. Vascular access did not mature (post-operative period < 8 weeks) in others (12%) within our study period. The mean duration of cannulation was approximately 8 weeks (ranging from 2-16 weeks, SD-4weeks). Considering postoperative complications, 5% of patients developed

post-operative hemorrhage and one patient developed pseudoaneurysm. Postoperative bleeding which needed surgical intervention was significantly associated with access abandonment ($p=0.04$).

Conclusion Evaluation of optimum vessel quality with combined clinical and preoperative ultrasonography assessment produces a satisfactory un-assisted fistula rate. Postoperative hemorrhage was significantly associated with access abandonment.