Publication Brief

A prospective controlled trial on effect of percutaneous transluminal angioplasty on functioning arteriovenous fistulae survival.

Tessitore N et al, Divisione Clinicizzata di Nefrologia, Verona, Italy.

BACKGROUND
Balloon angioplasty (PTA) is an established treatment modality for stenosis in dysfunctional arteriovenous fistulae (AVF), although most studies showing efficacy have been retrospective, uncontrolled, and nonrandomized. In addition, it is unknown whether correction of stenosis not associated with significant hemodynamic, functional, and clinical abnormality may improve survival in AVF.

OBJECTIVE
This prospective controlled open trial study was a to evaluate whether prophylactic PTA of stenosis not associated with access dysfunction improves survival in native, virgin, radiocephalic forearm AVF.

METHOD
- Enrollment: 62 stenotic, functioning AVF: 30 controls; 32 PTA;
- End points were:
  - AVF thrombosis;
  - Surgical revision due to reduction in delivered dialysis dose.

RESULTS
- Kaplan-Meier analysis showed that PTA improved AVF functional failure-free survival rates (P = 0.012) with a fourfold increase in median survival and a 2.87-fold decrease in risk of failure.
- Cox proportional hazard model identified PTA as the only variable associated with outcome (P = 0.012).
- PTA induced an increase in access blood flow rate (Qa) by 323 (236 to 445) mL/min (P < 0.001), suggesting that improved AVF survival is the result of increased Qa.
- PTA was also associated with a significant decrease in access-related morbidity by approximately halving the risk of hospitalization, central venous catheterization, and thrombectomy (P < 0.05).

CONCLUSIONS
1. Prophylactic PTA of stenosis in functioning forearm AVF improves access survival and decreases access-related morbidity.
2. Supports usefulness of preventive correction of stenosis before the development of access dysfunction.
3. Strongly supports surveillance program for early detection of stenosis.

Reference: