

Dialysis

Vascular Access

13. Prevention and management of infections in synthetic grafts

CARI Guidelines

- a. Patients should be pre- treated with an appropriate antibiotic (according to recent local microbiological advice and experience) prior to creation of a synthetic graft (level A evidence).
- b. It is uncertain whether prophylactic antibiotics are required for native fistula creation, but their use in high risk (diabetic, MRSA carriers) patients may be considered.

Practice Tips

Infections of a native fistula or graft may be localised, requiring antibiotics, rest and sometimes surgical revision/excision or associated with bacteraemia/septicaemia which may require removal or ligation of the access. Appropriate cultures and microbiological consultation with early surgical review are necessary.

What is the evidence?

RCT: Bennion 1985. Effectiveness of perioperative antimicrobial therapy in preventing operative site infection post-placement of vascular access grafts.

Subjects - 40 CRF patients undergoing placement of expanded PTFE.

Methods - Cefamandole nafate (1gm in 0.9% saline) vs placebo (.0.9% saline alone) by IV infusion immediately prior to operation and twice post operatively. 20 patients were randomised to each group.

Quality - Unclear allocation concealment and blinding of outcome assessment, No intention to treat analysis, 95% follow up.

Results - Treated patients 4 times less likely to develop infection compared to controls (2/19 vs 8/19).

Conclusion - Prophylactic cefamandole nafate reduces post operative infection in VA surgery.

What do the other guidelines say?

DOQI: Staff and patient education should include instruction on infection control measures for all hemodialysis access sites.

- Local infection of a dialysis AV graft should be treated with appropriate antibiotics based on culture results and by incision/resection of the infected portion of the graft.
- Extensive infection of a dialysis AV graft should be treated with antibiotics and total resection of the graft.

BRA: No guidelines available

CSN: CSN: Use a clean technique for needle cannulation for all cannulation procedures.

Treat local infection of a dialysis AV graft with appropriate antibiotics based on culture results and/or by incision/resection of the infected portion of the graft (evidence: level III).

Treat extensive infection of a dialysis AV graft with parenteral antibiotics and total resection of the graft.

Initial antibiotic treatment should cover both Gram-positive and Gram-negative organisms.

Treat infections of primary AV fistulae, which are rare, as subacute bacterial endocarditis with 6 wk of antibiotic therapy. Fistula take-down is required in cases of septic emboli (opinion).

Implementation and Audit

Early infection rate should be less than 5%.

Information should be recorded in the access chart and audited.

Suggestions for Future Research

RCT of prophylactic antibiotics in native fistula creation

RCT of prophylactic antibiotics for graft interventions (e.g. fistulograms or angioplasty)

OUT OF DATE