

Dialysis

Vascular Access

11. Maturation times for arteriovenous fistulae before use

CARI Guidelines

- a. A 4-6 week minimum maturation period is advisable before regular use of an arteriovenous fistula is commenced. (level C evidence)
- b. Experienced clinicians and dialysis nursing staff should determine the appropriate time for commencing use of a fistula or graft. Clinical features useful for determining when a fistula is ready for cannulation include wound healing, size of vein, palpation, elevation and assessment of collateral flow (level C evidence).

Practice Tips

Maturation times (i.e. time to first successful cannulation) for fistulae will vary according to the individual patient's co-morbidity and native circulation characteristics. In some patients, particularly elderly diabetics, the fistula takes up to 12 weeks to mature, but in others fistulae have been used as early as 2 weeks.

Some fistulae which function poorly initially are fixable. Formal limb arteriography may be required to detect proximal arterial stenosis. Superficialising, ligation of branches and re-doing the anastomosis may all aid maturation.

What is the evidence?

No studies available on this subject.

What do the other guidelines say?

DOQI: A primary AV fistula is mature and suitable for use when the vein's diameter is sufficient to allow successful cannulation, but not sooner than 1 month (and preferably 3 to 4 months after construction).

The following procedures may enhance maturation of AV fistulae:

- Fistula hand-arm exercise (e.g., squeezing a rubber ball with or without a lightly applied tourniquet) will increase blood flow and speed maturation of a new native AV fistula.
- Selective obliteration of major venous side branches will speed maturation of a slowly maturing AV fistula.
- When a new native AV fistula is infiltrated (i.e., presence of hematoma with associated induration and edema), it should be rested until swelling is resolved.

PTFE dialysis AV grafts should not routinely be used until 14 days after placement. Cannulation of a new PTFE dialysis AV graft should not routinely be attempted, even 14 days or longer after placement, until swelling has gone down enough to allow palpation of the course of the graft. Ideally, 3 to 6 weeks should be allowed prior to cannulation of a new graft.

Patients with swelling that does not respond to arm elevation or that persists beyond 2 weeks after dialysis AV access placement should receive a venogram or other non-contrast study to evaluate central veins.

BRA: No guidelines available

CSN: Do not use an AV fistula sooner than 1 month and preferably 3 to 4 months after construction.

Do not use PTFE grafts routinely until 14 d after placement (opinion).

OUT OF DATE