

# Dialysis

## Vascular Access

### 12. Surveillance of venous access

#### CARI Guidelines

- a. Each unit should practise clinical evaluation of access and develop familiarity with a technique for determining access malfunction appropriate to their circumstances (level B evidence).
- b. Fistulography is considered a gold-standard for access evaluation, but its use for screening is not usually justified (level C evidence).

## Practice Tips

Surveillance requirements may differ according to proportion of native fistula and grafts. Native fistula do not develop outflow intimal-hyperplasia related stenosis but may have intrinsic stenoses related to previous cannulation, valvular or anastomotic stenoses.

AV grafts tend to develop outflow intimal hyperplasia after 4-6 months. Surveillance seeks to identify access malfunction prior to clinical events. The frequency of monitoring and the method of monitoring are however, undefined, and their use will, in part, depend on the resources available. Assessment by clinical evaluation, venous pressure monitoring, access re-circulation techniques and serial duplex evaluation have all been described.

## What is the evidence?

Pending

## What do the other guidelines say?

**DOQI:** Recirculation should be measured using a non-urea-based dilutional method or by using the two-needle urea-based method. The three-needle peripheral vein method of measuring recirculation should not be used.

Any access recirculation is abnormal. Recirculation exceeding 10% using the recommended two-needle urea-based method, or 5% using a non-urea-based dilutional method, should prompt investigation of its cause.

If access recirculation values exceed 20%, correct placement of needles should be confirmed before conducting further studies.

Elevated levels of access recirculation should be investigated using angiography (fistulography) to determine whether stenotic lesions are impairing access blood flow.

**BRA:** No guidelines available

**CSN:** Establish a quality assurance program to monitor vascular access (evidence: level III).

Monitor AV fistulae bimonthly for hemodynamically significant stenoses, using an on-line total

access flow measurement. Investigate an access flow less than 500ml/min or a drop in access flow >20% of baseline for possible reversible lesions (opinion).

When on-line blood flow measurements are not available, monitor AV fistulae using regular recirculation studies (evidence: level II). Measure recirculation using a non-urea-based dilutional method or by using the two-needle urea-based method. Do not use the three-needle peripheral vein method of measuring recirculation (evidence: level II). When recirculation exceeds 15% (on two separate measurements) using the recommended two-needle urea-based or is greater than 5% on non-urea-based methods on two separate measurements, investigate the cause. Confirm that the needles are placed correctly before conducting additional studies.

Monitor grafts monthly for hemodynamically significant stenoses, using an on-line total access blood flow measurement (evidence: level III) and static or dynamic venous pressure measurements (evidence: level II). Investigate an access flow <650 ml/min or a drop in flow >20% of baseline for potentially reversible stenosis (opinion).

Investigate any finding of access dysfunction or elevated levels of access recirculation using angiography (evidence: level II).

Until investigations are complete, adjust the dialysis prescription to ensure that the patient is receiving adequate dialysis during this period of access dysfunction (opinion).

## **Implementation and Audit**

Proportion of access assessed for occult dysfunction and methods

## **Suggestions for Future Research**

RCT of post-operative assessment of fistula adequacy by clinical vs radiological means and fistula outcome prior to first cannulation.

Diagnostic test assessment: sensitivity and specificity of techniques for assessing access malfunction