Publication Brief

Does monthly native arteriovenous fistula blood-flow surveillance detect significant stenosis—-a randomized controlled trial.

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BACKGROUND

Clinical practice guidelines recommend that the preferred method of surveillance for arteriovenous fistula (AVF) is the measurement of AVF blood flow (Qa).

OBJECTIVE

To conduct a randomized, prospective, double-blind, controlled trial to assess whether Qa surveillance results in an increased detection of AVF stenosis.

STUDY

• A total of 137 patients were randomly assigned to receive either:
  • Surveillance Group (n = 68) continuing AVF surveillance using usual clinical treatment plus AVF blood-flow surveillance by ultrasound dilution (Qa)
  • Control Group (n = 67) continuing AVF surveillance using current clinical criteria;
• The primary outcome measure was the detection of a significant (>50%) AVF stenosis.

RESULTS

• Patients in the Qa surveillance group were twice as likely to have a stenosis detected compared with the control hazard ratio (HR) confidence interval (CI) group (2.27, 95% 0.85-5.98, P = 0.09), with a trend for a significant stenosis to be detected earlier in the Qa surveillance group (P = 0.09, log rank test).
• Using the Qa results alone prior to angiography, the area under the receiver operating characteristic curve demonstrated, at best, a moderate prediction of (>50%) AVF stenosis (0.78, 95% CI 0.63-0.94, P = 0.006).

CONCLUSIONS

• This study demonstrates that the addition of AVF Qa monitoring to clinical screening for AVF stenosis resulted in a non-significant doubling in the detection of angiographically significant AVF stenosis.
• Further, large multi-centre randomized trials will be necessary to confirm whether Qa surveillance and the correction of detected AVF stenosis will lead to a reduction in AVF thrombosis and increased AVF survival.

Reference: