Publication Brief

Pro: Vascular access surveillance in mature fistulas: is it worthwhile?

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BACKGROUND
Guidelines recommend regular screening of mature arteriovenous fistulas (AVFs) for preemptive repair of significant stenosis (≥50% lumen reduction) at high risk of thrombosis, identified from clinical signs of access dysfunction (monitoring) or by measuring access blood flow (Qa surveillance). Qa surveillance also enables stenosis detection in functional accesses.

OBJECTIVE
To compare the value of Qa surveillance versus monitoring.

STUDY
• Meta-analysis was performed on the randomized controlled trials (RCTs) comparing the two screening strategies (monitoring and Qa surveillance);
• To test the real-world benefits of Qa surveillance, the expected RCT-based thrombosis and access loss rates with Qa surveillance were compared with the rates with monitoring reported in observational studies.

RESULTS
• Correcting stenosis identified by Qa surveillance significantly halved the risk of thrombosis [relative risk (RR) = 0.51, 95% confidence interval (CI) 0.35-0.73] and access loss (RR = 0.47, 95% CI 0.28-0.80) in comparison with intervention prompted by clinical signs of access dysfunction.
• One small RCT designed to identify an optimal Qa threshold showed that stenosis repair at Qa >500 mL/min produced a significant 3-fold reduction in the risk of thrombosis (RR = 0.37, 95% CI 0.12-0.97) and access loss (RR = 0.36, 95% CI 0.09-0.99) in comparison with intervening when Qa dropped to <400 mL/min as per guidelines.

CONCLUSION
• Results suggest that, in clinical practice, adopting Qa surveillance may only be worthwhile at centres with high thrombosis and access loss rates associated with monitoring.
• The expected thrombosis and access loss rates with surveillance were only lower than with monitoring when a Qa >500 mL/min was considered (2.4, 95% CI 1.0-4.6 and 2.2, 95% CI 0.7-5.0 versus 9.4, 95% CI 7.4-11.3 and 10.3, 95% CI 7.7-13.4 events per 100 AVFs-year, P ≤ 0.024);
• Qa thresholds >500 mL/min for elective stenosis repair should be adopted.

Reference