Publication Brief

The impact of access blood flow surveillance on reduction of thrombosis in native arteriovenous fistula: a randomized clinical trial

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INTRODUCTION
Although all vascular access (VA) clinical guidelines recommend monitoring and surveillance protocols to prevent vascular access thrombosis, randomized clinical trials (RCT) have failed to consistently demonstrate the benefits of flow-based surveillance. Therefore, the value of surveillance remains controversial.

OBJECTIVE
To present a 3-year follow-up multicenter, prospective, open-label, controlled RCT, to evaluate the usefulness of QA measurement using Doppler ultrasound (DU) and ultrasound dilution method (UDM), in a prevalent hemodialysis population with native arteriovenous fistula (AVF).

METHODS
• Classic monitoring and surveillance were applied to all patients: Experimental group (n = 98); Control group (n = 98).
• DU and UDM were performed in the experimental group every three months.
• When flow was ≤ 500 mL/min, there is a 25% decrease in QA or a hemodynamically significant stenosis the patient was referred for fistulography, surgery or close clinical observation.
• Thrombosis rate, assisted primary patency rate, primary patency rate and secondary patency rate were measured.

RESULTS
• Significant reduction in thrombosis rate after one year.
  • Experimental (surveillance) group: (0.022 thrombosis/patient/year)
  • Control group: (0.099 thrombosis/patient/year)
• Assisted primary patency rate was significantly higher in the experimental group than in control AVF
• In the experimental group, those undergoing angioplasty and surgery were higher but with no significant difference in non-assisted primary patency rate
• There was no significant difference in the non-assisted primary patency rates between the two groups.
• There was non-significant improvement in the secondary patency rate in the experimental group.

CONCLUSION
QA surveillance combining Doppler Ultrasound and Indicator Dilution methods shows a reduction in thrombosis rate and an increased assisted patency rate in AVFs after one-year follow-up.

REFERENCE