Assessment of Access Blood Flow after Preemptive Angioplasty

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OBJECTIVE
To study the ability of access blood flow changes to assess the efficacy of radiological procedures. This retrospective study evaluated the effect of single and repeated angioplasties on access blood flow and venous pressures in A-V grafts during a fifteen-month period.

STUDY
- 73 hemodialysis patients with functioning arteriovenous grafts received monthly access blood flow measurements using the Transonic® HD01 Monitor.
- All measurements were performed within the first two hours of dialysis because blood pressure decreases during dialysis treatment.
- If there was an access blood flow reading of less than 600 mL/min or a decrease in access blood flow of 20% from the original baseline flow, the patient was sent for an angiogram.
- If the patient experienced a venous pressure of more than 200 mmHg, swollen extremity, difficulty cannulating the graft, aspiration of clots, positive ultrasound screening, or a follow-up to an initial procedure, they were also sent for an angiogram.

RESULTS
- 60 diagnostic angiograms were performed in 37 patients, resulting in 47 angioplasties.
- Successful angioplasties resulted in an increase of access blood flow to above 600 mL/min for at least one month.
- Approximately 50% of the procedures were effective for longer than 3 months and there was a cumulative patency rate of 78% at six months.

CONCLUSION
- The study suggests that access blood flow measurements are useful in identifying candidates for prophylactic angioplasty, assessing the “efficacy of angioplasty and determining the need for and timing of reintervention.”
- The authors state that “serial measurements of [access blood flow] can provide a secondary assessment of the functional efficacy of an individual radiological procedure and suggest the need for immediate reevaluation if post angioplasty flow is inadequate.”
- Low access flow can also identify secondary lesions that were originally considered insignificant until angioplasty on primary stenosis did not restore flow.

Reference: