

Publication Brief

Invasive radiologic management of hemodialysis fistulas: Measuring flow with an endovascular catheter

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OBJECTIVE

To analyze the values of flow measured by an endovascular ReoCath® Flow Catheter (Transonic Systems Inc.) and to determine whether the measurements are more reliable than angiographic and clinical findings for planning and for determining the outcome of invasive radiologic treatment of hemodialysis fistulas. The safety of this endovascular flow measurement during interventional radiology procedures was also examined.

MATERIALS AND METHODS

- During 598 procedures, the endovascular ReoCath Flow Catheter was used to measure flow in 341 vascular accesses for hemodialysis (162 [47.6%] distal fistulas), (132 [38.4%] humeral fistulas), and (47 [14%] arteriovenous grafts).
- The total number of flow measurements was 3,051.
- Dysfunction was most commonly due to high pressures and flow deficits.

RESULTS

- Of the 598 cases, angiography detected lesions in 81% (483) of the cases. Of these, 87% (419) of the cases were treated radiologically. The remaining 64 were referred to surgery: 24 with low flows, 40 with high flows.
- In 419 or 70% of cases, the ReoCath Flow Catheter was used to measure the results of radiologic treatment.
- In 179 or 30% of cases, there was no treatment for a variety of reasons including high flows (greater than 800 mL/min in fistulas and 900 mL/min in prosthetic grafts).
- The most frequent treatment was isolated angioplasty (342 cases).
- In 2 or 0.35% of cases, the tip of the catheter perforated the wall of the vein; this complication was resolved by inflating a low pressure balloon.

STUDY'S CONCLUSIONS

The ReoCath Flow Catheter is useful for measuring flow during invasive vascular radiology procedures for hemodialysis. By providing quantitative information on the functionality of the vascular access, the measurements are most helpful in determining whether a stenosis is present which needs to be treated. The ReoCath Flow Catheter also assesses the success of angioplasty, increases the longevity of the access, and helps to avoid re-intervention.

TRANSONIC COMMENT

This Spanish publication is an important HVT100 and endovascular ReoCath Flow Catheter publication. It delineates the use of the ReoCath to help determine if treatment is actually needed and to evaluate the improvement in flow following angioplasty. It also states the advantages of the ReoCath over other modalities such as ultrasound and registered the main objection that it is not advanced over a guide wire.

REFERENCE:

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