

Publication Brief

Monitoring & Surveillance of Hemodialysis Access

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BACKGROUND

Access surveillance using invasive or noninvasive methods with an objective to improve access patency and decrease hospital admissions for access dysfunction in dialysis population has been promoted, but its success to predict incipient thrombosis and subsequent access failure is still controversial

- Studies have shown improvement in access outcomes, while others have failed to demonstrate an ideal method to diagnose access problems.
- Endovascular interventions such as percutaneous transluminal angioplasty (PTA) to timely correct access problem might itself be a promoter of neointimal hyperplasia and restenosis during balloon angioplasty.
- There are significant costs and efforts associated with routine dialysis surveillance;
- It is therefore wise to understand whether such programs will help improve access-related problems and guarantee adequate dialysis care.
- Although, the general consensus is, that despite the lack of guaranteed success of surveillance, such strategies have helped improve dialysis management, resulted in decreased costs and hospitalizations, and represented clinically relevant indications of failure prior to planning any radiological or surgical intervention.

OBJECTIVE

To review monitoring and surveillance measures in place, and their associated merits and limitations to detect stenosis and prevent incidences of vascular access thrombosis.

DISCUSSION

The components of physical exam and the various methodologies of surveillance are reviewed.

CONCLUSIONS

- Physical exam combined with a clinical surveillance program by experienced health professionals should be the recommended procedure for evaluating dialysis patients for signs of access abnormalities.
- Some data suggest that the intra-access flow method is not sufficient to diagnose imminent thrombosis; Other methods (duplex ultrasound) are required to select patients for interventional procedures.
- Factors such as patient demographics may influence the risk of access thrombosis, making it difficult to achieve desirable sensitivity and specificity of surveillance methods.
- Frequent catheter interventions for access status might lead to inflammatory reactions and restenosis at the insertion site, and reduce patency of the access.
- Monitoring and surveillance procedures, when systematically implemented, may provide clinical indications for access failure that can lead to appropriate interventions to maintain access patency.
- More studies are required based on the type of access, patient-specific factors, hospitalizations, and cost to determine the optimum method and frequency of access monitoring and surveillance.

Reference:

Koirala N, Anvari E, McLennan, G "Monitoring and Surveillance of Hemodialysis Access," *Semin Intervent Radiol.* 2016 Mar; 33(1): 25–30. OPEN ACCESS (Transonic Reference # HD11494R)