


# Dialysis Access Creation and Management: A Clinical Paradigm

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The prevalence of end-stage kidney disease (ESKD) continues to increase globally and imposes a significant burden on health care systems [1]. Hemodialysis remains the most common renal replacement therapy for patients with ESKD and dysfunctional hemodialysis arteriovenous fistulas and grafts (AVF/AVG) which require repeated interventions to maintain patency and functionality remain the Achille's heel of hemodialysis therapy.

Interventional therapies now provide a comprehensive service for dialysis access creation and management, and this special issue provides a clinical review of the current hot topics in this arena as well as revisits traditional topics with updates from experts in the field.

Interventionists have traditionally been involved in dialysis initiation with catheter insertions, but a promising major paradigm shift is occurring in AVF creation, from open surgical creation to using percutaneous endovascular techniques (EndoAVF). We will not discuss dialysis catheters in this special issue as the scope would then be too wide. The EndoAVF data thus far look very promising with technical success and maturation rates similar or even superior to surgical creation, with lower complication and reintervention rates [2]. It will be very interesting to witness the evolution of this technique.

Between 28% and 53% of surgically created AVFs fail to mature and techniques in helping them become functional are critical to avoid another new access creation procedure, which will then reduce future access options for the patient [3].

For maintenance of dialysis access, plain balloon angioplasty is still the tried and tested technique and sets the standard of care. It is the foundational technique upon which other newer adjunct therapies are built, and interventionists should be very conversant with good plain balloon angioplasty technique and the results it achieves [4].

The newer exciting technologies of drug-coated balloons (DCB) and covered stents promise to improve access primary patency post angioplasty and increase the time interval to next intervention. There are now results of multiple large randomized controlled trials for these 2 technologies, and it is important to dissect the data very carefully, and to define the roles of these more expensive treatments so that they can be cost-effectively utilized [5, 6].

Despite the developments in maintenance of dialysis access, we continue to encounter access thrombosis, so it is useful to review the techniques of thrombolysis and thrombectomy, in light of new devices available [7].

We have also included a review on dialysis-access associated steal, as we feel that this is not a well understood topic, and interventionists should be aware of how to manage this condition [8].

The central veins are the common outflow pathway for all dialysis access circuits. Unfortunately, central venous stenosis and occlusions remain the Gordian Knot of dialysis access interventions, and a review of the latest data is timely [9].

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Even though dialysis access interventions can comprehensively manage the gamut of access problems, it is critical to know when to stop and refer the patient for surgery [10]. The inclusion of this topic makes this special issue complete.

The creation and management of dialysis access require a strong clinical and holistic perspective and not just a technical one. We hope this special issue has reinforced this and that you will enjoy reading and learning from these review articles as much as we did in putting them together. We would also like to take this opportunity to thank all our contributing authors for their thoughtful and insightful reviews.

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