



AMERICAN NEPHROLOGY NURSES' ASSOCIATION
ANNA'S 44TH NATIONAL SYMPOSIUM
APRIL 21-24, 2013
RIO ALL-SUITE HOTEL, LAS VEGAS, NEVADA

Special Nursing Needs for Patients with HeRO Grafts

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Problem: Because the HeRO graft system has different anatomy, configuration, and biomaterials from conventional arteriovenous grafts it has quite different hemodynamic and mechanical properties. This lead to special nursing needs of these patients to achieve the best outcomes.

Our approach: We performed a retrospective record review of 32 patients who received the HeRO graft in our practice and We noted complications which were unique to the HeRO device as well as many which were shared with conventional dialysis accesses. Further information was obtained by querying the FDA's Manufacturer and User Facility Device Experience Database (MAUDE) and reviewing 34 adverse event reports for the HeRO device. We identified nursing interventions which could help prevent them or mitigate the harm to the patient.

Results and Conclusions:

Prevention of Thrombosis of the Device – We observed although the primary patency of the HeRO graft was only 25% there was a secondary patency of 90% and some were declotted frequently. Hypotension was a common complaint among patients with frequent thrombosis. We present recommendations for nursing interventions focusing on Dietary education to minimize interdialytic weight gain and Medication management to minimize dialysis induced hypotension.

Prevention of Infection of the device -- Three out of the 32 patients we reviewed had their HeRO device explanted because of infection. The HeRO device differs from the conventional PTFE graft in that the outflow component does not become incorporated into the surrounding tissues because it is covered with silicone. Seek a referral for removal of the outflow component in patients who have abandoned HeRO devices or patients with HeRO devices who have successfully undergone transplantation.

Prevention of Mechanical Failure/Breakage: The HeRO device has a platinum marker band at the tip which sometimes separates from the device and embolizes to other areas of the body. One of our patients was noted to have dislodgement of the radio opaque marker band following a thrombectomy of the device. Query of MAUDE records indicates this is not a unique problem. When the HeRO devices thromboses, care should be taken to make referrals to providers familiar with recommended declotting procedures. Monitor radiographic reports for indications that the marker band has embolized and seek consideration of removal.

Implications of Our Study: Nurses caring for patients with HeRO devices should take a leadership role in promoting dietary and medication management practices that minimize complications. Nurses should become knowledgeable about resources available in their community for safely managing malfunctions of the HeRO device.

Abstract selected for presentation at ANNA's 44th National Symposium, Las Vegas, NV, 2013