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Changes in the Profile of Endovascular Procedures Performed in Freestanding Dialysis Access Centers over 15 Years

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Abstract

Background and objectives Marked changes occurred in the vascular access profile of patients receiving hemodialysis in the United States over the 15-year period of 2001–2015. This study was undertaken to evaluate how these changes have affected dialysis access maintenance and salvage procedures performed in freestanding dialysis access centers and to examine the effectiveness, efficiency, and safety of these procedures in this setting.

Design, setting, participants, & measurements Data were collected from freestanding, dedicated dialysis access centers operating under a common system of management. Data were available on 689,676 dialysis access procedures. Data relating to case mix, procedure outcome, procedural time, and intraprocedural and immediate postprocedural complications were analyzed.

Results The arteriovenous procedure profile changed from one characterized by approximately equal numbers of angioplasties and thrombectomies performed on arteriovenous grafts (AVGs) to one characterized primarily by angioplasties performed on arteriovenous fistulas. The percentage of angioplasties performed throughout the study was significantly greater than thrombectomies, with a mean of 67.9% versus 32.1% ($P < 0.001$). Interventional procedures did not decrease with increasing arteriovenous fistula utilization in prevalent patients receiving dialysis. The incidence roughly paralleled the increasing prevalence of this type of access. A decreasing percentage of AVG utilization resulted in a progressive, roughly parallel, but disproportionately higher, decrease in the percentage of AVG procedures ($P < 0.001$). A progressive improvement in procedure outcomes and a decrease in complication rates and procedure times were observed ($P < 0.001$ for each). A progressive decrease in tunneled dialysis catheter placement was also observed.

Conclusions The procedure profile treated in freestanding, dedicated dialysis access centers changed significantly over 15 years, reflecting the changes that have occurred in the vascular access profile of the dialysis population.

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