

Maturation of Arteriovenous Fistulas Placed Prior to Dialysis Initiation

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Introduction

- Few data exist describing the percent of placed arteriovenous fistulas (AVFs) that reach maturation.
- Until recently, the tracking of vascular access use was limited to data from the CMS-2728 Medical Evidence form, which indicates the vascular access used at initiation.
- Starting in July of 2010, outpatient (OP) dialysis claims indicate the vascular access used for dialysis.
- For patients with an AVF placed prior to initiation, this allows one to identify when the AVF was first used for dialysis.

Methods

- Using the USRDS database, we identified incident hemodialysis (HD) patients who began treatment between July and December of 2010.
- The cohort was limited to those who were aged 67+ at initiation (to allow for Medicare coverage prior to initiation).
- Using Medicare claims prior to initiation, we identified patients who had an AVF placed within 1 year prior to initiation.
- We used OP dialysis claims after initiation to identify when an AVF was first used for HD.
- Information regarding patient demographics and primary cause of renal failure were obtained from the USRDS database.

Results

- There were 2,476 patients who met the inclusion criteria. Their average age was 76.6 years, 77% were of white race, and 58% were male.
- Fewer than 40% of patients who had an AVF placed prior to initiation used an AVF at their first OP dialysis session.
- Of those whose AVF was placed at least 60 days prior to initiation, almost one-third had a functioning AVF at initiation.
- Only 37% of patients whose AVF was placed 6 to 12 months prior to initiation used it at their first OP dialysis session.
- Among patients who did *not* use an AVF at their first OP dialysis session, two-thirds had a functioning AVF within 6 months.

Table 1
Demographics

Total	2,476
Age	
Mean	76.6
Median	76.0
Male (N, %)	1,437 58.0%
Female	1,039 42.0%
White	1,904 76.9%
Black	437 17.7%
Other	135 5.4%
PCOD: DM	1,115 45.0%
PCOD: HTN	954 38.5%

Figure 2
Percent of Patients with a functioning AVF at initiation, by timing of placement

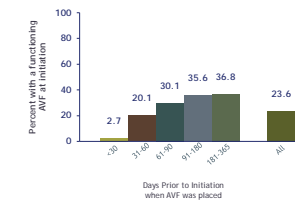


Figure 4
Percent of Patients who use an AVF at any time during the first 6 months, by timing of placement

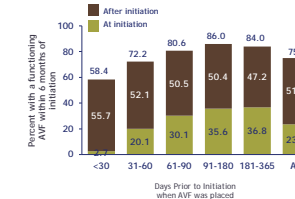


Figure 1
Distribution of Days Prior to Initiation when AVF Placed

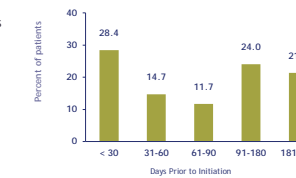
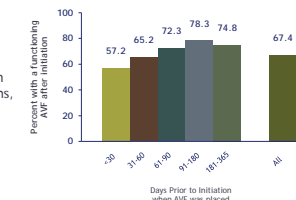


Figure 3
Of those without a functioning AVF at initiation, the percent who use an AVF within 6 months, by timing of placement



Conclusions

- While many patients studied had an AVF placed 6 to 12 months prior to initiation, a significant percentage (28.4%) had an AVF placed less than 30 days prior to initiation.
- As expected, the length of time between AVF placement and dialysis initiation is associated with whether the AVF was ready for use at the first OP dialysis session.
- The percent of patients who used an AVF at initiation is relatively low, even for those whose placement was 6-12 months prior.
- However, the large majority of patients were using an AVF within 6 months after initiation.
- Limitations:
 - Those aged 67+ are a subset of all AVF patients, and may not be representative
 - Retrospective, claims-based analysis