

CONVERSION OF VASCULAR ACCESS TYPE DURING THE FIRST YEAR ON HEMODIALYSIS: DATA FROM A NATIONAL REGISTRY

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Background & Aim

Although arterio-venous fistula or graft (AVF/G) is the optimal vascular access for hemodialysis and should ideally be created before a planned start of maintenance hemodialysis (HD), many patients start HD with a catheter. Limited data exists on the vascular access conversion rates during the first year on HD.

We analyzed conversion rates during the first year on HD and factors affecting conversion on a subset of a national cohort.

Results

270 patients started hemodialysis in the specified periods (including day 1 patients). Mean age of patients was 65 ± 15 years, 63% were male and 37% had diabetes. The flow of patients' vascular accesses is shown in Figure 1.

Patients starting with a catheter

When the 126 patients starting chronic HD with a catheter were analyzed, they were not different in age (67 ± 15 vs. 64 ± 15 , $p = 0.17$) or presence of diabetes as compared to patients starting with an AVF/G. The change in the patients' vascular access is shown in Figure 2. Whether the patient converted to AVF/G within the first year on HD was not influenced by patient's gender, presence of diabetes or age ≥ 70 years (median age).

Patients starting with an AVF/G

When the 139 patients starting with AVF/G were analyzed, 21 (15%) died ($p < 0.001$ vs. catheter group) during the first year; of the remaining 118, only 6 (5%) converted to catheter after one year.

Conclusions

- Although only half of the incident patients started HD with an AVF/G, the majority (61%) of those surviving the first year converted to an AVF/G.
- This resulted in a favorable increase in the prevalence of AVF/G from 51% to 81% during the first year on HD.
- The conversion rate was not influenced by patient's gender, age or presence of diabetes.
- The mortality during the first year (including incident day 1 patients) in the group starting with a catheter was significantly higher, which is at least partially the result of a selection bias.
- All efforts should be made to provide patients with AVF/G before or at least after starting chronic hemodialysis.

Methods

Data prospectively collected in the national Renal replacement therapy registry was used for this study.

Since vascular access at initiation of HD is not recorded in the Registry, we included only patients starting HD in the last three months of the years 2006 - 2010 and used the vascular access reported at the end of the first year (i.e. 0-3 months after initiation of HD) as access at HD initiation. Vascular access at the end of the next calendar year was recorded and conversion rates between different access types were calculated. The effect of gender, diabetes and age (above or below median value) was estimated using Chi-square test.

Results

Figure 1: Flow of incident patients' vascular access during first year on hemodialysis.

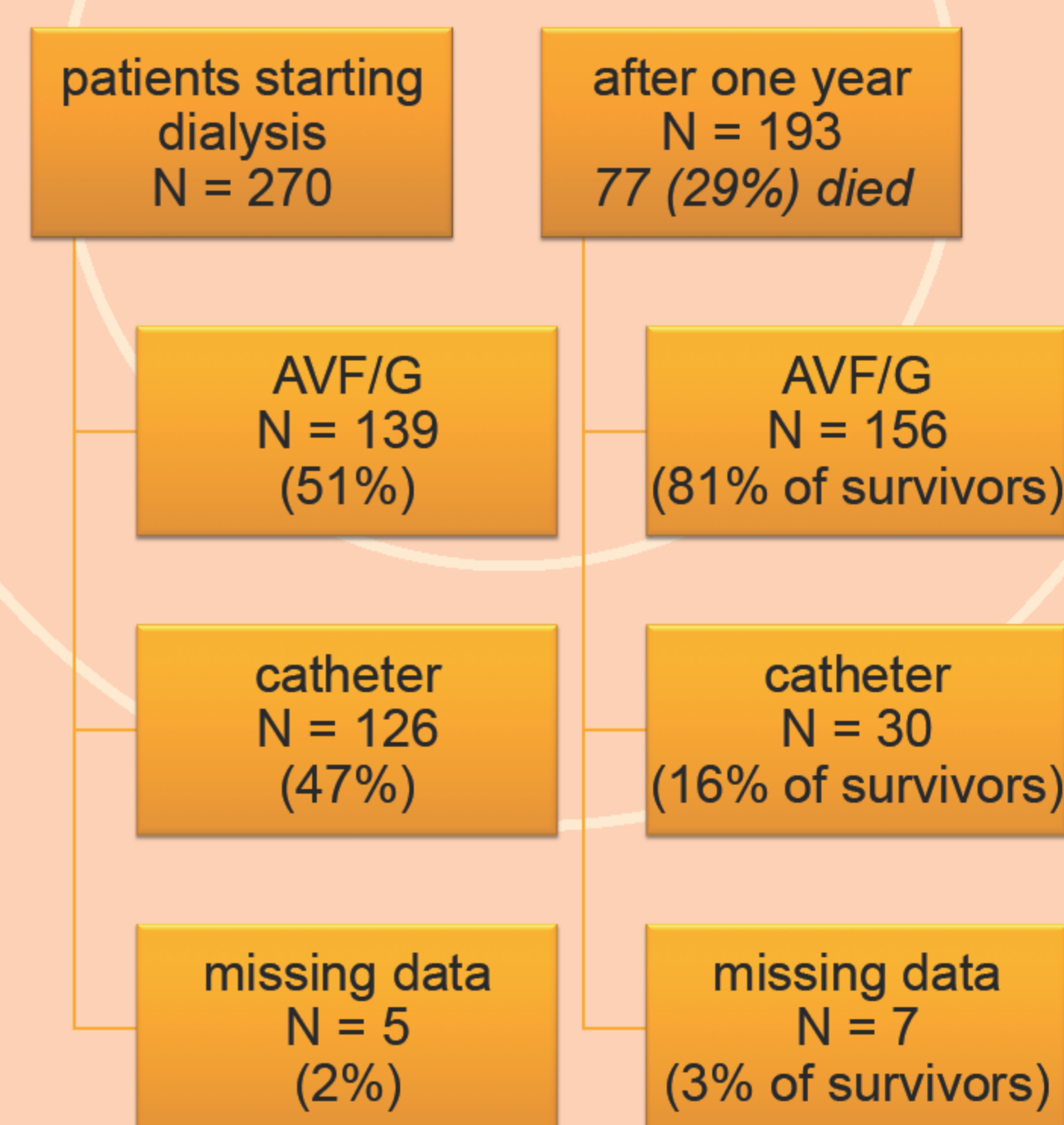
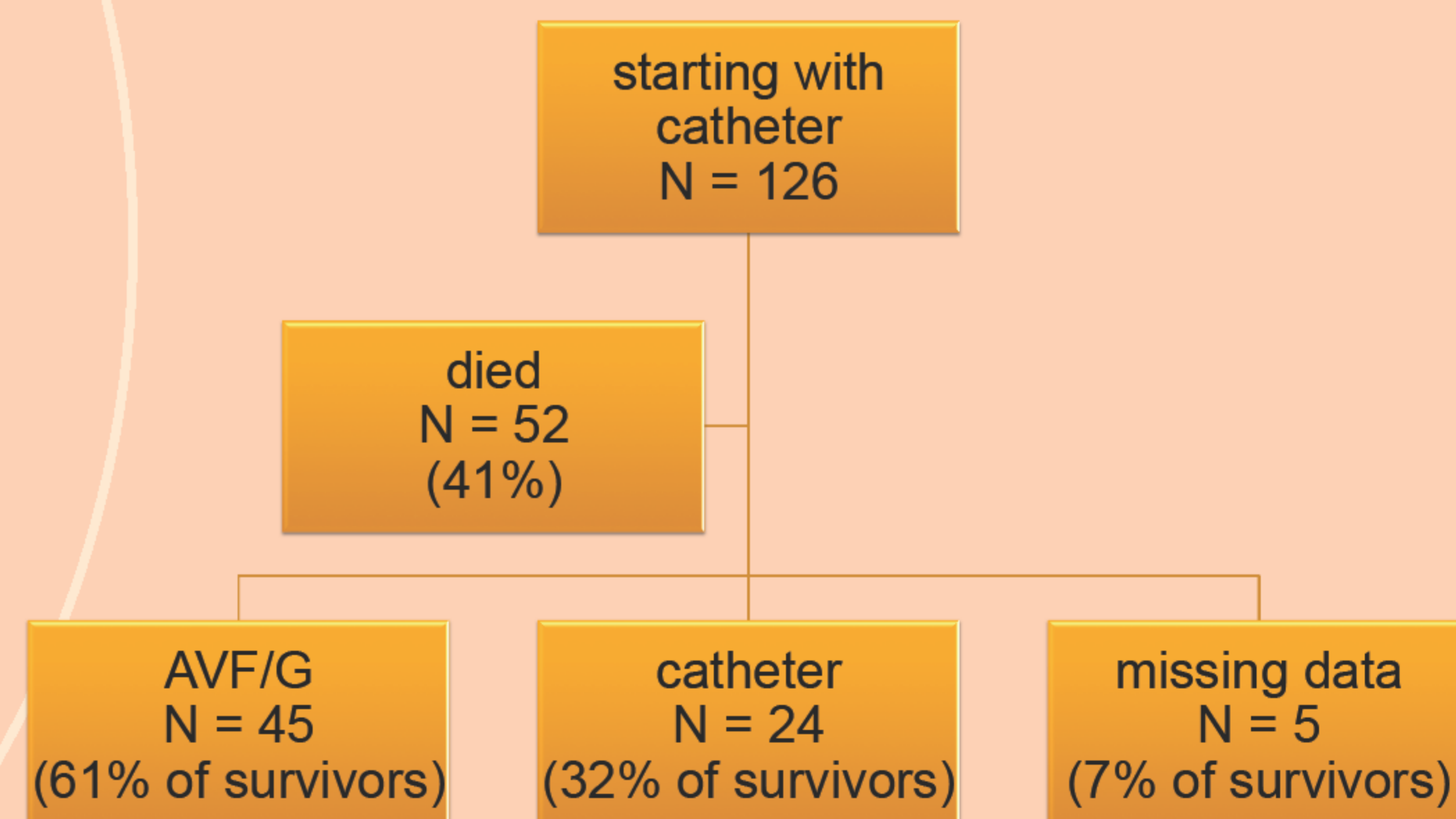


Figure 2: The changes in vascular access during first year on dialysis for patients starting with a catheter.



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