

Vale Project Vascular Access Life Experience:
Experience of Patients with Vascular Access for Hemodialysis

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BACKGROUND AND OBJECTIVES

The chronic care model reported in the 2024 KDIGO (Kidney Disease: Improving Global Outcomes) guidelines¹ emphasizes, among the factors for improving end-stage kidney disease (ESKD) outcomes, the presence of informed, engaged patients who interact productively with a prepared, proactive multidisciplinary team. Furthermore, the 2019 Kidney Disease Outcomes Quality Initiative guidelines (2019 KDOQI guidelines)² recommend “that each patient with progressive CKD should have an individualized ESKD life plan that is regularly reviewed, updated and documented on their medical record.”

Vascular access (VA) is considered a lifeline for patients with ESKD. Selecting the best type of access is complex and requires a multidisciplinary approach that includes the consideration of patient preferences, improving traceability of outcomes and conducting cyclical reassessments. Patients often feel uninvolved in this process and are poorly informed about the risks and benefits of each type of VA.^{3,4}

AIMS

The purpose of this study was to conduct a qualitative investigation on a pool of Italian hemodialysis (HD) patients with ESKD to understand the type of VA used and how the different types were affecting their psychosocial experience, including physical function, emotional impact, family and social relationships, sleep patterns, ability to work or attend school.

METHODS

Patients with ESKD (age ≥ 18 years, duration of HD of at least 6 months, any type of VA used arteriovenous fistulas (AVF), arteriovenous grafts (AVG) and central venous catheters (CVC)), with or without prior kidney transplantation) were invited to anonymously complete a semi-structured questionnaire adapted from Nordyke et al, 2020.² The questionnaire included the following domains/subdomains: symptoms, physical function, activities of daily living, emotional impact, family and social relationships, ability to work or attend school, sleep and vascular access control. The results of patients’ narratives were analyzed using grounded theory methodology, focusing on the frequency of identified segmented codes and subcodes.

RESULTS

A total of 32 patients were screened, of whom 30 were interviewed. The average age was 61 years (range 20–86 years) and 67% were men. On average, patients had had two vascular accesses before beginning HD (minimum of 1, maximum of 3).

As detailed in *Figure 1*, the variability of VA is high. Of the 30 patients interviewed, 30.0% had only 1 AVF and had been on dialysis for an average of 7.8 years. A total of 26.7% started on a CVC and switched to an AVF; they had received dialysis for an average of 8.7 years. Due to non-maturation and/or infection, 13.3% of patients switched from AVF to CVC (average dialysis time 4 years). Only 10.0% of patients currently receiving HD had, or had previously had, a graft. Lastly, 6.7% had a vascular history with 2 CVCs or 2 AVFs as the only access type. The remaining 13.3% reported a more complex history: problems from all types of access.

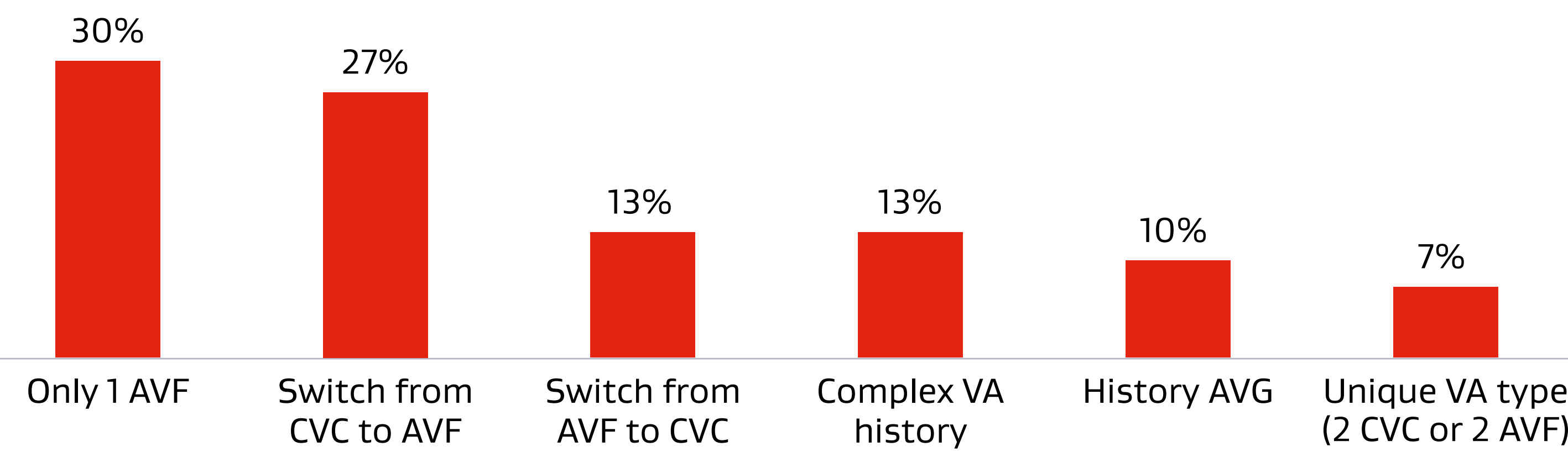


Figure 1: Type of VA used by the patients interviewed

Vascular access selection

Qualitative analysis of the patients’ narratives revealed concerns (no qualitative differences in terms of sex, age, years on HD or type of center) about:

- CVC: infections
- AVF: infections, thrombosis, bumping, swelling, pressure and cannulation (needle size)
- AVG: positioning, maturation and durability

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Vascular access-specific health-related quality of life impact

To assess the impact of VA on patient HRQoL, 317 segmented codes highlighted during patient interviews were analyzed. The negative impact of HD on patient HRQoL was divided into 6 domains (social/role function, activities of daily living (ADL)/physical function, emotional impact, physical symptoms, health care interactions and sleep) (*Figure 2*).

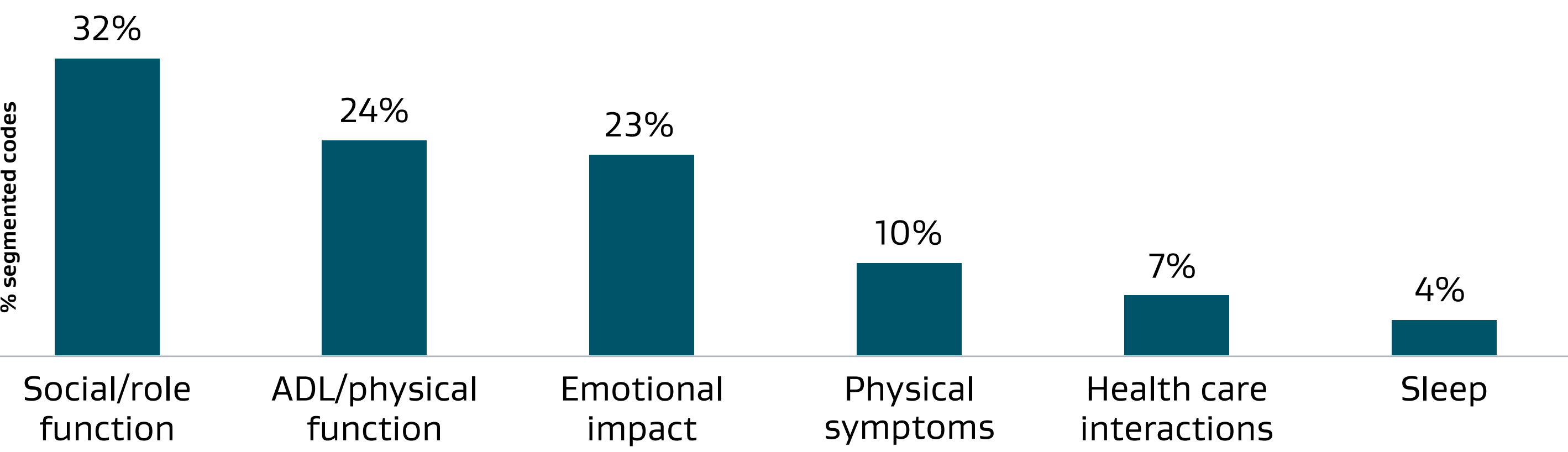


Figure 2: Negative impact of VA on patient HRQoL

Impact of the VA modalities on the psychosocial experience of patients

From patients’ narratives, AVF is reported to negatively affect their lives more than other types of vascular access. AVF had a greater adverse impact than CVC and AVG on the social/role function. The impact of AVG on the social/role function domain was lower. AVF also affected ADL/physical function more than CVC and AVG in terms of attention, carrying weights and caregiver requirements. Furthermore, AVF had a greater impact on the emotional domain compared to CVC and AVG. Regarding physical symptoms, the impact of AVF was greater than CVC and AVG. The lowest rate of physical symptoms was reported for AVG (*Figure 3*).



Figure 3 – Impact of VA on patients’ lives – analysis by domain and subdomains (weighted segment values)

CONCLUSIONS

A high variability in VA selection was reported by the patients in this qualitative investigation. Most of the patients switched from the VA type (CVC, AVF or AVG); in 30%, AVF was the only type of VA. The VA has an impact on various aspects of a patient’s QoL, encompassing social/role dynamics, activities of daily living and both physical and emotional functions. From patients’ narratives, AVF is reported to negatively affect their lives more than CVC and AVG in terms of social/role function, ADL/physical function and emotional domain. Additionally, increasing awareness and use of AVG could be crucial, as grafts have the potential to improve quality of life due to a reduction in infections and complications, as well as better mobility.^{5,6,7} Therefore, active participation of patients in VA selection, in accordance with their preferences and requirements, should be encouraged. Providing VA care entails close interdisciplinary collaboration with other specialties to ensure the delivery of optimal, multidisciplinary patient care.⁸ The nephrologist, as the specialist who monitors the patient closely, may be best suited to incorporating the voice of the patient and the patient’s life plan into this multidisciplinary approach.

