

# *Bulletin de la Dialyse à Domicile*

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### **A perspective on integrated dialysis access management: in advance of integrated care plan**

(Perspective de gestion intégrée de la voie d'abord pour la dialyse : en avance sur le plan de soins intégrés)

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#### Summary

We would like to draw attention to the critical issue of dialysis access management and vascular access (VA) options in patients transitioning to chronic renal replacement therapy and from peritoneal dialysis (PD) to hemodialysis (HD). We advocate for the establishment of dedicated consultation services for integrated dialysis access management to optimize patient outcomes. We highlight specific cases where a tailored approach to VA selection is essential, emphasizing the importance of risk stratification and timely access preparation. The preferred use of arteriovenous fistula in HD patients and the challenges surrounding its maturation are discussed. We also explore circumstances necessitating urgent versus planned transitions to HD, incorporating considerations for patient-centered care and education. Sonography's role in managing PD-related infections and the potential benefits of home HD in the transition process are also examined. We suggest the development of scoring systems to predict patient transitions and emphasize the need for an integrated approach to dialysis access management. Overall, we advocate for proactive measures to prevent vascular access failure and ensure a safe and effective transition process for patients with chronic kidney disease.

**Keywords:** peritoneal dialysis, Hemodialysis vascular access, Hemodialysis, Daily home hemodialysis, peritoneal dialysis catheter.

#### Résumé

Nous souhaitons attirer l'attention sur la question cruciale de la gestion de la voie d'abord pour la dialyse et des options d'accès vasculaire chez les patients en transition vers une thérapie de remplacement rénal chronique et de la dialyse péritonéale (DP) vers l'hémodialyse (HD). Nous plaçons pour la mise en place de services de consultation dédiés à la gestion intégrée de l'accès à la dialyse afin d'optimiser les résultats pour les patients. Nous mettons en évidence des cas spécifiques pour lesquels une approche personnalisée de la sélection du type d'accès pour la dialyse est essentielle, en soulignant l'importance d'une stratification des risques et de la préparation de cet accès en temps opportun. L'utilisation préférentielle de la fistule artérioveineuse chez les patients en hémodialyse et les défis entourant sa maturation sont discutés. Nous explorons également les circonstances qui nécessitent des transitions urgentes ou planifiées vers l'HD, en incluant des considérations sur les soins et l'éducation centrés sur le patient. Le rôle de l'échographie dans la gestion des infections liées à la DP et les avantages potentiels de l'HD à domicile dans le processus de transition sont également examinés. Nous suggérons le développement de systèmes de notation pour prédire les transitions des patients et soulignons la nécessité d'une approche intégrée de la gestion de la voie d'abord pour la dialyse. Dans l'ensemble, nous préconisons des mesures proactives pour prévenir la défaillance de l'accès vasculaire et garantir un processus de transition sûr et efficace pour les patients atteints d'insuffisance rénale chronique.

**Mots-clés :** dialyse péritonéale, accès vasculaire en hémodialyse, hémodialyse, hémodialyse quotidienne à domicile, cathéter de dialyse péritonéale



### Letter to editor

Dear Editor,

We would like to bring attention to the issue of dialysis access management and vascular access (VA) options, both during the transition to the first chronic renal replacement therapy and from peritoneal dialysis (PD) to hemodialysis (HD).

When compared to HD, PD is an equally effective renal replacement therapy (RRT). Furthermore, preemptive living donor renal transplantation offers the best chance for extended patient survival and improved quality of life.

Establishing a dedicated consultation service for integrated dialysis access management would be a beneficial approach for chronic kidney disease (CKD) patients, especially in specific cases:

- 1) Patients with predictable complex VA issues could benefit from a period of PD to prevent VA exhaustion and optimize long-term dialysis treatment.
- 2) Patients with anticipated technical difficulties related to Tenckhoff catheter placement (such as those with multiple abdominal surgeries, adhesions, ostomies, or autosomal dominant polycystic kidney disease) would benefit from HD.
- 3) Patients who have chosen PD but are planning preemptive living donor renal transplantation may be supported conservatively until transplantation, with a contingency plan for central venous catheter (CVC) placement if needed.

Additionally, some PD patients may require transfer to HD at some point, and risk stratification can help ensure a safe and effective transition process. The optimal timing for VA construction in PD patients transitioning to HD remains challenging to define and requires further improvement. However, the prognosis depends on the quality of the transition.

As is widely recognized, arteriovenous fistula (AVF) is the preferred vascular access option in HD patients due to lower infection rates compared to CVC use. Nevertheless, the delay in AVF maturation means that the time between surgeon referral and first access cannulation in incident HD patients is typically around three months [1]. However, preemptive AVF placement does not always lead to better outcomes. Moreover, while failure rates for AVF may be higher than for peritoneal catheters, HD patients do not typically have a backup peritoneal catheter implanted. Some guidelines have been proposed to help guide this transition process.

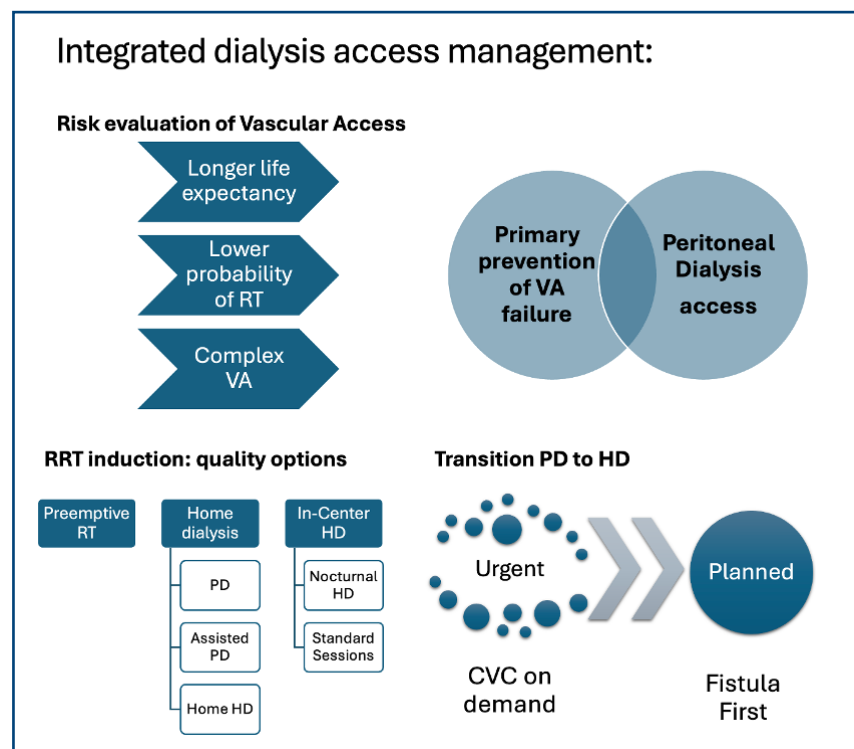
While transitioning to HD is often urgent and unpredictable in cases of access-related infections, unsolvable dysfunction, or acute abdominal issues, there are circumstances where a planned and safer transfer is possible. Clinical conditions such as inadequate dialysis clearance despite appropriate PD prescription adjustments, sustained fluid overload, peritoneal membrane insufficiency, or patient noncompliance may necessitate timely vascular access preparation [2].

Furthermore, the use of sonography has become essential in managing PD-related infections, aiding in antibiotic therapy decisions and determining the need for surgical intervention [3]. Serial evaluation of functional and cognitive function, particularly in elderly patients, can help prepare for assisted dialysis transition.

A patient-centered approach is essential, respecting the informed decisions of patients regarding RRT. Educating patients on the benefits of different modalities early in the advanced CKD stages can help them view transfers as opportunities rather than threats. Home HD also plays a role in this transition process, showing positive outcomes for patients transitioning from PD.

Developing a scoring system to predict which patients may require a transition would be beneficial [4], as clinicians often miss opportunities to prepare patients, particularly regarding VA. Various models have been proposed, including the use of patient characteristics, laboratory results, and peritonitis episodes [5].

In conclusion, integrated dialysis units offering a range of tailored dialysis options would benefit from a similar integrated approach to dialysis access management (*Figure 1*). Primary prevention of vascular access failure can be achieved by considering peritoneal access implantation, particularly in patients with a presumed higher life expectancy or a lower likelihood of renal transplantation. High-risk patients should be closely monitored, with a focus on a safe modality transition process and overall patient experience.



↑ Figure 1. Integrated dialysis access management. CVC: Central venous catheter; PD: Peritoneal dialysis; HD: Hemodialysis; RT: Renal transplant; VA: Vascular access

## References

- 1 - Fraga Dias B, Rodrigues A. Managing transition between dialysis modalities : Un appel pour des soins intégrés dans les unités de dialyse. Bulletin de la Dialyse à Domicile. 2022;5(4):11-22. doi:10.25796/bdd.v4i4.69113
- 2 - Covic A, Bammens B, Lobbedez T, Segall, L, Heimbürger, O. van Biesen, W., Fouque, D, & Vanholder R. Educating end-stage renal disease patients on dialysis modality selection. NDT Plus. 2010;3(3):225-233. doi:10.1093/ndtplus/sfq059

- 3 - Sim JJ, Zhou H, Shi J, Shaw S F, Henry, S L, Kovesdy C P, Kalantar-Zadeh K, & Jacobsen SJ .Disparities in early mortality among chronic kidney disease patients who transition to peritoneal dialysis and hemodialysis with and without catheters [published correction appears in Int Urol Nephrol. 2019 Feb;51(2):375-376]. Int Urol Nephrol. 2018;50(5):963-971. doi:10.1007/s11255-018-1837-6
- 4 - Anwaar A, Liu S, Montez-Rath M, Neilsen H, Sun S, Abra, G, Schille B, & Hussein W F. Predicting transfer to haemodialysis using the peritoneal dialysis surprise question. Peritoneal Dialysis International : Journal of the International Society for Peritoneal Dialysis. 2023;44(1):16-26. doi:10.1177/08968608231214143
- 5 - McGill RL, Weiner DE, Ruthazer R, Miskulin DC, Meyer KB, Lacson E Jr. Transfers to Hemodialysis Among US Patients Initiating Renal Replacement Therapy With Peritoneal Dialysis. Am J Kidney Dis. 2019;74(5):620-628. doi:10.1053/j.ajkd.2019.05.014