

Peritoneal dialysis: a treatment to be developed for the management of chronic end-stage renal disease

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End-stage renal disease (ESRD) is defined as the loss of 85 to 90% of renal function. It most often concerns patients with poly-pathologies (diabetes, high blood pressure, cardiovascular diseases leading to nephro-angiosclerosis). Its prevalence, very high in France, is approximately 92,000 cases with a steadily increasing annual incidence (11,400 cases in 2020). The lifesaving supplemental treatments are kidney transplantation (45% of patients) and renal dialysis (55%). Dialysis can be carried out in public or private hospitals, known as heavy centers and more or less distant from the patient's home, or in dedicated light weight centers, or at home. Chronic hemodialysis calls for the creation of an arteriovenous fistula and usually involves three sessions per week in a center, of four hours each, or six sessions per week at home, of two hours each. In France, center hemodialysis concerns more than 90% of dialysis patients.

Peritoneal dialysis (PD) can be performed daily at home. It relies on the filtration capacity of the peritoneal membrane and requires the insertion of an intraperitoneal catheter, whose external end allows the introduction of the liquid necessary for blood purification (dialysate). It can be performed by the patient himself or by a trained nurse, and is carried out either manually during the day (ambulatory cyclic PD) or during the night on a cyclor (automated PD). In France, it concerns only 6% of the 50,500 dialysis patients, a rate two times lower than the average for OECD.

For emergency indications (15 to 30% of cases), in the usual absence of an arteriovenous fistula or a peritoneal catheter, dialysis is performed temporarily from a central vein. If it is the patient's informed choice, the relay by PD can be implemented after about two weeks, which is the time for healing necessary before the use of the peritoneal catheter.

The risk of septic or mechanical complications, a history of abdominal surgery, socio-economic conditions or unfavorable physical capacities of patients are put forward to explain the low use of PD, which has nevertheless proved its effectiveness and has shown a clear reduction in complications thanks to a professionalized therapeutic education.

In addition to the same survival as with chronic in-center hemodialysis, PD offers medical, social and economic benefits¹:

- hemodynamic stability during treatment reducing the risk of per-dialysis cardiac complications;
- preservation of residual renal function,
- no need for an arteriovenous fistula, which may, in the long term, lead to the development of a high output heart failure;
- treatment of choice for patients awaiting renal transplantation;
- recognized improvement in quality of life, home management and autonomy after a therapeutic education phase allowing the maintenance of previous activities and reducing the fatigue of repeated trips to the hemodialysis center;

- effective response to the growing demand for ESRD management due to the ageing of the population, as an alternative to the creation of hemodialysis centers.

In agreement with the recent report of the French Court of Auditors² and the White Paper of the French Society of Nephrology, Dialysis and Transplantation (“Société Francophone de Néphrologie, Dialyse et Transplantation³”) the French National Academy of Medicine recommends:

- informing patients about the possibilities of home treatment, in particular by PD in its different modalities (manual or automated), in the clinical course of ESRD before the terminal stage, based on the standardized document drawn up by the specialized learned societies within the framework of the Haute Autorité de Santé (HAS);

- improving the initial and ongoing training of caregivers in charge of ESRD to teach them the different aspects of home dialysis;

- strengthening therapeutic education and follow-up by setting up dedicated networks including nurse coordinators, advanced practice nurses and for home dialysis patient associations, and by using telemedicine and telemonitoring;

- reconsidering the economic lines of managing ESRD with a new price fixing that promote home dialysis, home hemodialysis and peritoneal dialysis, including the surgical insertion of the intraperitoneal catheter, in view of a foreseeable reduction in transport costs (which represent 20% of the total cost of managing ESRD);

- to propose the delivery of a "home dialysis" label, with the safeguard of human and financial resources for the centers that meet the conditions and objectives set by the National Professional Council of Nephrology and the Administrations concerned.

References:

1. Beaudreuil S., Why defend and promote the development of peritoneal dialysis in France? Bull. Acad. Nat. Med. 2022; 206: 179-180.

2. Cour des Comptes, Rapport public annuel 2020; <https://www.ccomptes.fr/system/files/2020-02/20200225-03-Tome-I-insuffisance-renale-chronique-terminal.pdf>.

3. SFNDT, Ma Maladie Rénale Chronique 2022: 10 propositions pour développer la dialyse à domicile. 2019; <https://www.sfndt.org/sites/www.sfndt.org//files/medias/documents/Livre-blancDialyse-a-domicile-190528.pdf>.

(*) Press release of the Academy's Rapid Communication Unit validated by the members of the Board of Directors on March 14, 2022.