Assisted Peritoneal Dialysis as an Alternative to In-Center Hemodialysis

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The majority of older people starting on dialysis will live on dialysis for the remainder of their lives, apart from the relatively few who are eligible for and receive a transplant. Care for these individuals mostly focuses around in-center hemodialysis (HD) in the majority of health care systems, despite the many advantages of peritoneal dialysis (PD), which would enable home-based treatment. However, studies show that, when people are given education and involvement in choice, >50% will choose a home-based treatment (1,2), including those who are older (3). Furthermore, there is evidence that people may be prepared to accept a shortened life expectancy to reduce visits to hospital and continue being able to travel (4). Intrusiveness of PD into daily life seems to be less than for those on HD for older people who can perform dialysis autonomously (5), but the association of comorbidities and frailty with increasing age makes it difficult for many older people to engage independently in PD. Physicians, therefore, often do not discuss PD with their older and more comorbid patients, and in-center HD is presented as the only viable dialysis modality (6). The rigors of HD, however, in terms of travel to and from dialysis facilities and the consequences of hemodynamic instability and intradialytic hypotension can be particularly problematic for such individuals (7). It is not surprising that many would prefer PD at home if feasible (3).

Assisted PD is a means of supporting people unable to perform their own PD, with trained staff or family members providing assistance with all or part of the dialysis procedure. Assisted PD is available in many European countries, Canada, and Australia using health care workers and many Middle Eastern, Asian, and South American countries using extended family members or domestic help, which is often readily available. Assisted PD, however, is not reimbursed in the United States, and therefore, it is not readily offered unless provided by the patient’s family. Different models exist for providing health care worker-assisted PD as shown in Table 1. In Europe and Canada, it is usually delivered as assisted automated PD; in France, however, assisted continuous ambulatory PD is predominantly used. Experience in Denmark and France suggests that the cost of assisted PD is equal to the cost of in-center HD (8,9). Patient and technique survival rates on assisted PD are similar to those of self-care PD on the basis of French and Danish experience (10–12). In France, where frail older patients in some districts are preferentially offered PD (assisted), data for 1615 patients >75 years old from the French Peritoneal Dialysis Registry (RDPLF) have shown that the median survival for those requiring nurse assistance (80% of cohort) is 24 months (10), which is very similar to that for all comers (approximately 90% of whom would be on HD) in the United Kingdom renal registry data (13). Data from the RDPLF also show that, overall, the risk of peritonitis is not increased in older patients and actually lower in those who have nurse assistance (14). The recently published baseline data from the Frail Elderly Patient Outcomes on Dialysis (FEPOD) Study suggest that quality of life is similar on assisted PD and in-center HD, although satisfaction with treatment is higher on assisted PD (15).

The Canadian experience of similar hospitalization rates for assisted PD and in-center HD described in this issue of the Clinical Journal of the American Society of Nephrology (16) adds to the expanding literature on this fledgling dialysis modality and supports its use as an alternative to in-center HD for people with barriers to self-care. Time in hospital adds to the cost of dialysis and negatively affects quality of life. The study is on the basis of information from the Dialysis Measurement Analysis and Reporting (DMAR) System in Canada linked to various other relevant health care databases to obtain hospitalization and diagnostic data (16). The DMAR System holds a unique dataset that includes information about eligibility for PD on the basis of perceived predefined barriers to PD, including level of social support, and has been used to determine factors influencing choice of PD as dialysis modality (17,18). Using this information, it was possible to match patients on assisted PD with those who were deemed eligible for PD but started on in-center HD. This is a reasonable approach for determining the nature of a comparison group but presupposes that all centers provide similar information about and equal access to PD; therefore, it does not entirely eliminate bias in the selection of the comparison HD group. The study findings, however, are strengthened by similar observations in the FEPOD Study, which found similar hospitalization rates in the 3 months before entering the study in the assisted PD (49%) and in-center HD (43%) populations (15). The comparison HD
group in this study was derived from the entire HD population, and patients were matched only by basic demographics.

The causes of hospitalization differed between the modalities in this Canadian paper, with infection being more common in the assisted PD group than in the HD group. This may not be true for other assisted PD populations. In France, for example, peritonitis risk is reduced by nurse assistance (14). Methods of patient training and support and training of family and caregivers as well as general social support are all important factors when considering peritonitis risk (19). The comparison HD group is also not typical, because a much higher proportion than usual (21%) switched from HD to PD.

With population ageing globally, there are ever-increasing numbers of older people requiring dialysis. For many older people, in-center HD is poorly tolerated, with a higher rate of intradialytic hypotension and associated risk of increased hospitalization and mortality than in those who are younger (20). The organization of transportation for people to and from dialysis facilities can be challenging and expensive to health care systems and individuals (21,22). Assisted PD can avoid the need for transport, which not only adds to treatment times but is also disruptive to a person’s daily routine, particularly when considering the often antisocial hours of dialysis sessions.

Thirty-eight percent of patients who were initially in the assisted group switched to self-care or family-assisted care, and the median time to that switch was approximately 1 month. Although the authors did not provide detailed information in this area, it is clear that a number of patients felt able to take on their own therapy after a period of professional assistance, whereas for others, family assistance was preferred to professional assistance for personal reasons (16). PD is only one of many long-term conditions in which patients and caregivers are routinely trained in the management of their own care. There is growing interest in the effect of patient activation and engagement on a range of domains of health care, with evidence building from across a range of health care conditions and populations (23).

Isolation from medical and social support is reported as a concern of patients on home dialysis, and this concern reduces the likelihood of patients selecting a home therapy (24), with the presence of social support mechanisms being a key determinant in the choice of a home therapy (25). Professional assistance potentially has a role to give confidence to those who lack social support mechanisms, and this is clearly an area that requires more detailed investigation. A recent report from the Health Foundation in the United Kingdom (26) reviews mechanisms for strengthening community-based care, with the aim of giving the individual a greater opportunity to access care that is centered around his/her needs rather than the requirements of the health care organization. Offering assistance for PD fits well into this concept, and indeed, in this study, 21% of the group that initially started with HD transferred to PD, suggesting that the ability to offer assistance provided the opportunity for the initial modality choice to be reconsidered.

There is now a considerable evidence base suggesting that the outcomes of assisted PD (with assistance provided by paid health care workers or family) are at least equivalent to in-center HD for older people who are faced with spending the remainder of their life on dialysis. It is going to be a challenge, however, to change from the status quo of default in-center HD for the majority of older people requiring dialysis, including those who may be able to do PD independently.

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References

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See related article, “Hospitalization Rates for Patients on Assisted Peritoneal Dialysis Compared with In-Center Hemodialysis,” on pages 1606–1614.