Does the Evidence Support Conservative Management as an Alternative to Dialysis for Older Patients with Advanced Kidney Disease?

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There is ongoing debate whether older adult patients with stage 5 CKD gain survival advantage when treated with dialysis compared with conservative management. Comprehensive conservative management that is chosen or medically advised (1) focuses on optimizing quality of life and is recommended by international experts in the field to include advance care planning, provision of symptom and pain management, coordinated end of life care, timely hospice care, psychologic and bereavement support, and a multidisciplinary approach (2–4). Clinical practice guidelines suggest that dialysis may impose considerable burden (5). Furthermore, dialysis may not offer a survival advantage or an improvement in functional status or quality of life among older patients with stage 5 CKD, especially those living with a high burden of comorbidities, functional impairment, or chronic malnutrition (5). Compared with conservative management, dialysis is associated increased hospitalization and reduced likelihood of dying at home or in a hospice (6). When adult patients nearing stage 5 CKD were asked about tradeoffs between treatment options, they reported willingness to trade considerable life expectancy to reduce the burdens of dialysis treatment. For instance, patients were willing to forgo 7 months of life expectancy to reduce hospitalization and forgo 15 months of life expectancy to increase their ability to travel (7).

The issue of whether to support or resist conservative care is particularly pertinent in countries where dialysis is widely available, including the United States, European countries, Canada, and Australia. Patients not treated with dialysis may or may not receive comprehensive conservative management. In the United States, the number of incident cases of dialysis treatment among patients with stage 5 CKD ages ≥75 years old seems to be stable over the past decade, despite the increasing incidence 10–20 years ago (8,9). In European countries, approximately 20%–45% of incident patients treated with dialysis are people ages ≥75 years old (10). In Canada, almost 30% of incident patients treated with dialysis are patients ages ≥75 years old, the age group with the highest incidence rate of people treated with dialysis in the country (11). People ages 75–84 years old in Australia have the highest incidence rate of people treated with dialysis (12). However, in both Canada and Australia, dialysis treatment rates are substantially lower for people ages ≥85 years old (13,14) (*e.g.*, about 95% of people ages ≥85 years old with kidney failure in Australia are not treated with dialysis [14]).

In this issue of the *Clinical Journal of the American Society of Nephrology*, Verberne *et al.* (15) compared survival of older patients with stage 5 CKD treated with dialysis with survival of those on conservative management in a retrospective single–center cohort study from The Netherlands. Using data that included patients ages ≥70 years old over the period of a decade (2004–2014), Verberne *et al.* (15) reported on 204 patients who were treated with dialysis (although four people underwent renal transplantation, three of which had a transplant after dialysis) and 107 patients who were treated with conservative management. Survival analysis was conducted using the Kaplan–Meier method with varying starting points (*e.g.*, from time of treatment decision and different eGFR cutoffs, including <20, <15, and <10 ml/min per 1.73 m^2). They found a higher overall median survival for patients treated with dialysis compared with those treated with conservative management, regardless of the starting point (*e.g.*, from time of treatment decision: 3.1 [interquartile range (IQR), 1.5–6.9] years for the dialysis group compared with 1.5 [IQR, 0.7–3.0] years for the conservatively managed group; $P<0.001$) (15). This survival advantage observed from the dialysis group was substantially reduced in patients with cardiovascular comorbidity and those with higher comorbidity in general (Davis comorbidity scores ≥3). A statistically significant survival advantage was no longer observed between the treatment groups when focusing on patients who were ages ≥80 years old, regardless of the starting point. For example, among patients ages ≥80 years old, the median survival from time of treatment decision for the dialysis group was 2.1 (IQR, 1.5–3.4) years compared with 1.4 (IQR, 0.7–3.0) years for the conservatively managed group. Verberne *et al.* (15) also considered rate of decline in eGFR and observed that the dialysis group sustained its survival advantage among patients with rapid or slow eGFR decline.

A recent systematic review (16) on survival outcomes of dialysis therapies versus conservative care among older adult populations found no meaningful differences. Foote *et al.* (16) reported that the annual

survival of patients on hemodialysis or peritoneal dialysis was 73.0% (95% confidence interval, 66.3% to 79.7%) and that the annual survival of patients on conservative management was 70.6% (95% confidence interval, 63.3% to 78.0%), suggesting that the annual mortalities between treatment options were similar. The overall median survival advantage presented by Verberne *et al.* (15), in contrast to results from the systematic review, may reflect differences in patient characteristics between studies and varying definitions in starting points of comparison. Similar to other papers published in this field comparing survival between dialysis and conservative management using observational data (16), Verberne *et al.* (15) were not able to adjust for many other potential confounders that may contribute to treatment selection bias, such as level of functional impairment and frailty. Although previous work has indicated support for a randomized clinical trial comparing these treatment options to address confounding issues, ethical issues may prevent such a study design (17).

The study conducted by Verberne *et al.* (15) reflects the reality of conservative management programs providing care for patients with advanced CKD: many conservative management programs are small, single centered, and located sparsely across the globe. The nature of the current conservative management programs reflects the variability of support (*e.g.*, in funding, infrastructure, and human resources) and is likely reflective of the differences in social and economic contexts between countries. In the United Kingdom, many adult renal units provide conservative kidney management (17), reporting an overall median of 45 patients per unit that were ages ≥75 years old (IQR, 20–83 patients). However, practice patterns across these renal units vary, including variations in guidelines of care and availability of dedicated staff and training on conservative management. The lack of standardization in provision of care may reflect the quality of conservative care provided and affect how patients arrive at this treatment decision. Another study from the United Kingdom found that patients from more established renal units with conservative management were more aware of conservative care, less frequently considered dialysis as a life-prolonging treatment, and more frequently had discussions regarding their future with clinical staff (18), showing that the quality of conservative management programs matters. Hence, additional research is necessary for enhancing and evaluating the multiple components necessary for a comprehensive conservative management program. For example, a recently published randomized, controlled trial comparing enhanced psychosocial support with counseling and psychosocial interventions with standard renal palliative care found that enhanced support significantly reduces caregiver burden and anxiety (19). In other locations with relatively few or no adult renal units providing conservative management, primary care physicians provide the majority of care, sometimes independent of nephrology. In a setting providing conservative management located in Alberta, Canada, approximately 40% of people with stage 5 CKD not treated with dialysis have not been seen by a nephrologist in a 2-year period (20). Recent research reports some of the challenges that primary care physicians experience and provides strategies that they may use when providing conservative care in the community setting (21,22).

Overall, a substantial amount of resource allocation and research is required in the field of conservative kidney management. For example, almost no original research on conservative management has been published in the United States. Although there is consistent tracking and reporting of dialysis, this is currently not available for patients treated with conservative management. Akin to previous studies (16), other clinically important outcomes for older adults with stage 5 CKD are generally not reported, including the presence and severity of symptoms, the practice of advance care planning, hospitalization, ensuring preferred location of death, and other patient and program characteristics that may reflect quality of care. Furthermore, different outcomes not previously considered by clinicians and researchers may also be important to patients and their family members when deliberating their treatment options. It is important that we conduct high–quality prospective studies and that we explore ethical considerations of randomized clinical trials with outcomes considered to be important by patients and their caregivers to address the aforementioned limitations. Finally, future investigations are necessary to determine patient–reported research priorities to improve the accessibility and quality of conservative kidney management programs where they are preferred or medically advised.

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See related article, "Comparative Survival among Older Adults with Advanced Kidney Disease Managed Conservatively Versus with Dialysis" on pages 633–640.