

Geriatric Issues in Older Dialysis Patients

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ABSTRACT

Geriatric syndrome is common among older patients on dialysis. Basic knowledge about its prevalence and management is crucial for nephrologists to provide standard patient care. In busy clinical settings, up-to-date and holistic medical care can be delivered to elderly dialysis patients by collaboration of nephrology and geriatrics teams, or in part by training nephrology fellows the basics of geriatrics.

KEYWORDS: geriatrics, nephrology, palliative care, dialysis

INTRODUCTION

Approximately 46.2 million people (14.5 percent of the total population) aged 65 and older lived in the United States in 2014 [1]. According to US census projections, this number is expected to follow an upward trajectory in the coming years. The likely consequence of this trend is that the prevalence of Chronic Kidney Disease (CKD) among the Medicare population—which was 10.4 percent in the 2012 report, will surge [2].

The United States Renal Data System, 2014 Annual Data Report, stated that close to half of all dialysis patients are 65 years and older. About 17 to 45 percent of patients accepted for dialysis are older than 75 years [3]. Functional decline, cognitive impairment, depression, and malnutrition are common features of this dialysis population [4].

This article reviews basic geriatrics principles as applied to kidney disease care by briefly describing the major geriatric components in patients with kidney disease. These core components are frailty, functional status, cognition, falls, palliative care, polypharmacy, and depression. Each of these is discussed below.

FRAILTY

The prevalence of frailty can be as high as 73% among patients initiating dialysis and is an independent and strong predictor of mortality and multiple hospitalizations [5]. Dialysis initiation among nursing home residents has been shown to accelerate the progression towards loss of dependence in daily activities of living [6]. A systematic comprehensive geriatric assessment (CGA) provides the best

estimate of a patient's physiologic reserve, estimating future decline and vulnerability, and even residual life expectancy.

Frailty screening tests can be helpful in selecting patients who may benefit from dialysis treatment, or exclude vulnerable patients at risk of adverse health outcomes. The information derived from a CGA may help to determine dialysis outcomes and help trigger shared decision-making conversations with the patient and family.

Conservative care has become the standard alternative for dialysis in elderly frail patients with advanced kidney disease to improve the quality of life [7]. The single most effective intervention to improve functionality and quality of life in these frail patients is exercise. Familiarity with Medicare programs such as Program of All-inclusive Care for the Elderly (PACE) and Acute Care for Elders (ACE) can help frail elderly adults in improving and maintaining functioning.

PACE is an outpatient model in which an interdisciplinary team delivers primary care to community-dwelling older adults. ACE, on the other hand, is a model of care targeted to acutely ill hospitalized patients to prevent functional decline or help improve independence if the patient has already declined. Since PACE and ACE can help frail elders maintain functioning within their communities at a low cost, thus likelihood of institutionalization is minimized.

FUNCTIONAL STATUS

Activities of daily living (ADL) and instrumental activities of daily living (IADL) scores generated from a CGA provide prognostic information in older adults. Studies have shown an association of ADLs to survival of elderly dialysis patients [8]. In a group of nursing home residents who underwent dialysis between June 1998 and October 2000, only 13 percent were able to maintain functional status to predialysis levels; 58 percent of these patients died over the next 12 months of follow-up [6].

Similar results were recorded in Jassal et al [2009], a single-center study of people who were 80 years or older [9]. At the onset, 78 percent of the participants were independent as measured by their ADL scores. After starting dialysis over a one-year period, the independence level of these individuals dropped to 23 percent. It is therefore important to identify those patients who could benefit from physical therapy in a timely manner and make the appropriate referrals to minimize these precipitous declines.

There are no well-designed studies available to compare functional decline in younger patients initiating dialysis.

COGNITION

CKD is an independent and significant risk factor for cognitive impairment [10]. Cognitive impairment worsens as kidney function declines. The prevalence of cognitive impairment in dialysis patients is at least two times higher than that of age-matched controls.

The pathophysiologic mechanism postulated for cognitive impairment is vascular injury and direct neuronal toxicity of uremic toxins. Both the kidneys and the brain are low resistance end organs with a high volume of blood flow with low susceptibility to vascular damage. Thus, dementia related to vascular causes is more likely to be present than Alzheimer's disease in a dialysis population.

Understanding the basics of pathophysiology involved helps minimize the future risk. Not all the tests that are routinely used in geriatric assessment are designed to detect mild cognitive impairment related to vascular damage in dialysis patients. Relatively quick tests such as Mini-Cog (3 words recall and clock drawing) may be offered for quick screening in busy practice. When prompted, more reliable Montreal Cognitive Assessment (MOCA), which has good sensitivity and specificity for executive function, can be utilized [11]. If indicated, referral for neuropsychological tests is warranted.

Often times, patients' declining cognition goes unrecognized even by close family members. Therefore, careful scrutiny and the recommendation of cognition tests should not be delayed. The practitioner should be alert to warning signs, such as when a patient is demonstrating new behavioral changes; non-compliance with medications and dialysis procedure; and is repeatedly asking the same questions. Poor hearing should be ruled out before making this determination, however.

FALLS

The incidence of falls in elderly non-dialysis patients aged 75 years and above is 0.32 falls per patient-year [12]. This number increases to 1.60 per patient-year on initiation of dialysis, thus putting dialysis patients at four times higher risk of falls compared to the age-matched non-dialysis population [13].

In a study of hemodialysis patients with falls who were followed for two years, there was a two-fold increase in the number and duration of hospitalizations; a 3.5 fold increase in risk of nursing home admission, and a 2.13 fold increased risk of mortality [14]. When a hip fracture occurs, these patients are at a four times higher risk of hip fracture and a two-fold higher risk of 1-yr mortality.

Given these dire and preventable consequences, basic knowledge of screening dialysis patients at risk of fall is everyone's responsibility. Asking about a history of falls and

conducting simple tests for gait and balance such as the Get Up and Go test and the Functional Reach test can identify most older adults who are susceptible to fall hazards. Such adults can benefit from timely referral for comprehensive geriatric evaluation.

HOSPICE AND PALLIATIVE CARE

The majority of nephrologists do not feel they are sufficiently well-trained to make end-of-life treatment decisions [15]. Discussions on the patient's goals of care and advanced care preferences are a crucial part of the older adult encounter; this is even more crucial in frail older adults with multiple comorbidities in imminent need of dialysis who may not do well on dialysis.

Respecting patients' values and preferences while keeping them comfortable and providing spiritual, psychosocial, and practical support both to patients and their family caregivers in such situations are key tenets of the palliative care approach. Helpful tools such as ePrognosis can estimate life expectancy and weigh the risks and benefits of proposed interventions to establish appropriate goals in a vulnerable patient.

Patients aged 75 and older who have CKD stage 5 with advanced neurodegenerative disease, high comorbidity scores (modified Charlson Comorbidity Index score of 8 or greater), significantly impaired functional status (Karnofsky Performance Status Scale score of less than 40), or severe malnutrition (serum albumin level less than 2.5 g/dL) do poorly with dialysis [16]. In these patients, physicians should recommend a time-limited trial of dialysis treatment. Dialysis can also be offered to address specific patient goals, such as living long enough to see a grandchild's birth, or a child's graduation. However, if such patients decide to continue treatment, the physician has little or no support yet for withholding dialysis. In this scenario, the physician should continue to review the treatment tolerance with patients and their families at specified intervals. Better understanding of the dialysis burdens and benefits with a trial of dialysis enables patients and their families to make informed decisions. Guidelines for shared decision-making in the appropriate initiation and withdrawal from dialysis are available [16].

POLYPHARMACY

Dialysis patients take 10-12 daily prescribed and over-the-counter medications on average. It is necessary to understand physiologic changes that occur with aging, such as decreased hepatic and renal function and altered fat distribution, which can result in inappropriately high serum drug levels even with appropriate equivalent doses for younger individuals. This basic understanding can help make treatment safe, convenient, and effective. Helpful tools such as Screening Tool of Older Persons' potentially inappropriate Prescriptions (STOPP), Screening Tool to Alert doctors to Right

Treatment (START) and the Beers criteria list of medications can be of significant value in guiding treatment decisions.

DEPRESSION

Depression affects dialysis patients of all ages. Studies comparing its prevalence, course and treatment outcome to younger patients is lacking in older dialysis patients. However, given that the majority of dialysis patients are older than 65, it is an indication that older adults are at higher risk of developing depressive symptoms, which is usually due to high symptom burden. The prevalence of depression in CKD stage 5 in some reports is as high as 39 percent, although this number varies based on the method used to diagnose depression. Depression in CKD is further associated with increased mortality, lower treatment compliance, increased health-care utilization, and lower self-rated quality of life. Depression in dialysis patients may be a result of poor dialysis tolerance, inadequate pain control, and other unfavorable social situations. Frequent assessment of dialysis patients for depression is mandated. The Beck Depression Inventory for depression is a validated tool in cancer patients and can be used in dialysis patients [17]. Treatments for depression exist and can be extremely effective.

DISCUSSION

The treatment decisions in elderly patients with advanced kidney disease are complicated by the interaction between various treatment domains. In order to improve medical care for elderly patients with kidney disease in general, collaborative care between nephrologists and geriatricians is needed.

However, an alarming shortage of geriatricians exists across the country. To further complicate matters, the number of medical graduates interested in pursuing nephrology training is decreasing. The limited resources create a formidable barrier for physicians to provide the best medical care possible for these patients.

One solution to this problem is to integrate geriatrics and palliative care into nephrology training. This approach will not only minimize the demand for collaborative care, it will also provide added skills to nephrologists that are necessary to provide state-of-the-art care to these vulnerable individuals. While the ultimate goal of this approach is not to produce geriatric nephrologists, it instead aims to train graduating nephrologists to recognize the risk that patient frailty poses to the health and overall well-being of a patient.

Notwithstanding that nephrologists are generally incredibly busy physicians, the development of a focused exam tailored to specific patient symptoms and needs, to conduct a quick assessment within a few minutes, is needed. This assessment can equip nephrologists to make informed decisions about whether to transfer a patient to a geriatrician for comprehensive geriatric assessments (CGA) by which a multidisciplinary team diagnoses and treats medical, functional

and psychosocial issues in a coordinated and integrated plan for an elderly patient. For an extremely busy nephrology practice, this model of co-management can help identify patients at risk and refer them for CGA.

Many nephrology fellowship programs in the country have recognized the need to train their fellows in geriatrics and palliative care as a part of holistic nephrology care, but most of them are able to do the bare minimum because of limited resources. Professional societies, such as the American Society of Nephrology, the American Geriatrics Society, and the National Kidney Foundation have taken steps to address the issue of inadequate geriatrics skills in the nephrology workforce.

Medical schools have started integrating geriatrics into medical school training courses. Similarly, nephrology associations have been incentivizing their residents and fellows to travel to national conferences; they are also providing research scholarships for their young physicians. Nonetheless, these positive steps remain inadequate given the widening gap between the increasing need and demand and the static number of nephrologists. Since the American Board of Internal Medicine Nephrology certification exam does not include geriatrics content and only fewer than 2 percent of ethics and palliative care content [5], this issue remains unsolved at the present time.

Important discoveries and refinements have been made as a result of better awareness of the intricacies involved in the association of aging and kidney disease. It will be illuminating to see nephrology trainees develop into professionals who are able to handle the challenges of caring for an aging population with kidney disease through enhanced exposure to geriatrics content and pertinent clinical experiences. The need to prepare all nephrology trainees to successfully manage the care of older adults can be addressed by a singular commitment of education leaders to incorporate relevant geriatrics content as well as clinical experiences within all nephrology courses.

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