

Anette Melk, MD, PhD, is affiliated with the Department of Kidney, Liver and Metabolic Diseases, Children's Hospital, Hannover Medical School. Roland Schmitt, MD, is affiliated with the Department of Nephrology and Hypertension, Hannover Medical School, Hannover, Germany.

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Caring for Elderly Patients with Kidney Disease: The Geriatrician–Nephrologist Collaboration

By S.A. Balogun and E. Abdel-Rahman

We are aging and living longer. This fact could be attributed to improved technology, medical advances, and the increased number and aging of the baby boomers. It is estimated that the number of elderly will be up to 2 billion by the year 2050 (1). This increase in the number of elderly is mirrored by an increase in medical problems such as acute and chronic kidney disease. This requires coordinated care by multiple specialties, with geriatricians and nephrologists playing a key role in the treatment of these patients.

At least 50 percent of the nephrology patient population are older adults with a wide range of kidney diseases. There has been a steady increase in the percentage of elderly patients with chronic kidney disease (CKD) and ESRD over the years (2). According to the third National Health and Nutrition Examination Survey data, in the United States, almost 40 percent of adults 60 years and older have some degree of chronic kidney disease (3, 4). Some of the structural and physiologic changes in kidney function are the result of normal aging; however, medications such as nonsteroidal anti-inflammatory agents, aspirin, and some herbal preparations are nephrotoxic and are also common culprits contributing to kidney disease in this population. Other risk factors include agents such as contrast dye used

in radiologic tests that cause acute kidney injury (AKI), and chronic medical diseases such as diabetes mellitus and hypertension (Table 1).

Structural changes affect all components of the kidney. This results in AKI being more common in older adults. AKI can have several causes: prerenal disorder with decreased volume secondary to poor oral intake with loss of thirst sensation, loss of concentrating ability of the renal tubule, loss of fluid through the gastrointestinal tract and kidney, intrinsic renal processes with ischemic and septic acute tubular necrosis, drug-induced and infection-induced allergic interstitial nephritis, and vascular causes such as atheroembolic diseases and vasculitis. Although patients 80 years and older make up 10 percent of hospital admissions, the prevalence of AKI in this population is about 30 percent, with prerenal disorders secondary to dehydration being the most common cause. Recovery of renal function is also much slower in older adults than in younger individuals, resulting in longer recovery times (5).

Another renal-related medical problem in older adults is the increased prevalence of arterial hypertension. Blood pressure continues to increase with increasing age. Data from the Framingham population heart study suggests that

in persons aged 55 years who are not hypertensive, the risk of experiencing hypertension by age 80 is 91 percent, and their lifetime risk is 93 percent (6).

Geriatricians are often asked, “Will I need dialysis, doctor?” This common question is usually posed right after patients are informed that their kidney function is abnormal. Often the news is a surprise to the patient and family

Table 1. Common risk factors for chronic kidney disease in elderly patients

Hypertension
Diabetes mellitus
Cardiovascular diseases
Medications
NSAIDs
Aspirin
Antibiotics (vancomycin, gentamycin)
Herbal preparations
Radiologic contrast dyes

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because the patient typically does not have any symptoms related to kidney disease, or attributes common symptoms of advanced kidney disease such as fatigue, anorexia, and nausea to the aging process or to another medical condition. In fact, some patients assume that if they are producing “normal” amounts of urine, the kidney is functioning optimally.

For patients with early to moderate CKD (stage 1–3), most of the clinical management hinges on controlling factors and diseases that adversely affect kidney function, such as blood pressure control in hypertension, effective diabetes management, and avoiding nephrotoxic medications and agents. More importantly, effective and optimal communication between geriatrician and patient is key. In addition, close monitoring of kidney function and electrolytes is critically important so the trajectory of change in kidney function can be tracked and can help both the clinician and the patient in developing an appropriate plan of care. For instance, the progression of kidney disease may be very slow in some elderly patients, making it unlikely that they will require renal replacement therapy (RRT) in their lifetime. By contrast, kidney disease could progress rapidly, with a need for imminent RRT. Collaboration between geriatricians and nephrologists is prudent in co-managing kidney disease in these patients, particularly with dietary advice, optimizing hydration when needed, managing electrolyte imbalances, and treating anemia, which may result from iron deficiency, kidney disease itself, or both (Table 2). It is crucial to establish this co-management team early in the disease process because it provides an avenue to optimize the patient’s care and facilitates long-term care planning. The patient’s goals of care should also be explored, so as to guide the team in tailoring the patient’s care to those goals. As with all geriatric patients, a comprehensive geriatric assessment, including cognitive, functional, and psychosocial assessment, is of utmost importance in identifying potential issues and adequately treating these patients as their disease progresses, while enabling them to function optimally in their environment, whether they live independently or require long-term care.

With advanced CKD (stage 4–5), RRT, particularly dialysis, is foremost in most patients’ minds, leading to the question above. With this comes a very complicated and careful consideration of a patient’s preferences for care, quality of life, and functional and cognitive status. In patients with cognitive deficits, the clinical team may also have to consider the preferences of family members. RRT (hemodialysis, peritoneal dialysis, and renal transplantation) is no longer a novelty in the elderly and can be the right option for many geriatric patients. Indeed, some elderly patients have comparable or even better health-related quality of life when using the different RRT modalities compared with younger patients using RRT or age-matched control individuals (7–10). In addition, home-based dialysis options for suitable patients further promote a good quality of life. In a 2010 study, more than 90 percent of geriatric patients using home-based hemodialysis and peritoneal dialysis were highly satisfied with health services and felt that they had chosen the right mode of treatment (11). This option, however, would obviously be feasible only for the highly motivated elderly patient with optimal physical and cognitive function. Renal transplantation in geriatric patients is also typically considered in the “youngest old,” those between 65 and 75 years who are otherwise in good health, with intact physical and cognitive functions.

Overall, the choice of treatment hinges on a thorough and comprehensive discussion among the patient, the family member(s), and the geriatrician-nephrologist co-management team, with careful consideration of the patient’s condition and goals of care. It is also important to include conservative palliative management focused on comfort and symptom control as one of the options for care. Often this option is overlooked or omitted, and patients can feel compelled to choose a more aggressive intervention be-

cause they perceive there are no other choices. Visser et al. (12) found that some elderly patients chose hemodialysis simply because they felt there were no better alternatives and viewed it as the only way to stay alive. Furthermore, family members can greatly influence the decisions and perceptions of their elderly loved ones, so physicians need to carefully explore the preferences of the patients themselves whenever possible (13). Careful consideration of medical conditions that can influence patients’ decisions, such as depression or other psychopathologic conditions like delirium, dementia, and primary psychiatric disorders, is also warranted, and attempts should be made to optimize treatment of these conditions when possible before discussions about goals and preferences for care are undertaken.

Elderly CKD patients with significant cognitive deficits, functional deficits, or both can present a very difficult and ethical dilemma for geriatricians and nephrologists, especially when these patients are deemed not to have decision-making capacity and the clinicians have to rely on decisions made by others such as family members, next of kin, or durable medical power of attorney. This can create several problems, in particular if the decisions made are incongruent with the opinions held by the medical team. Often, rational resolution can be achieved only through very patient and careful dialogue with all parties concerned. Also, engaging these surrogate decision-makers as early as possible in the patient’s treatment, and cultivating their trust, is crucial in these situations.

It is also not uncommon for elderly patients receiving dialysis to live in inpatient rehabilitation centers and long-term care institutions, such as assisted living facilities and nursing homes. Up to 0.6 percent of ESRD patients using hemodialysis or peritoneal dialysis reside in a long-term care facility (14). Several inpatient rehabilitation centers provide hemodialysis services on site to avoid disrupting patients’ physical and occupational therapy regimens, thereby facilitating their discharge home (15). However, in the majority of nursing homes and assisted living facilities, patients with ESRD receive hemodialysis at off-site dialysis centers. Going to these dialysis centers, often several days a week, may adversely affect the patients’ quality of life and limit their ability to participate in the facility’s activities.

Overall, the treatment of elderly patients with CKD requires careful coordination, a comprehensive approach to care, and thoughtful collaboration between geriatricians and nephrologists to optimize care. An interdisciplinary team approach is best, with the primary care physician or geriatrician taking the lead in the earlier stages of kidney disease, followed by careful and close interaction between the nephrologist and the geriatrician as the disease progresses, especially in the more complex phases. Whereas nephrologists address acute medical renal issues, long-term preventive care, and management of RRT, geriatricians often address issues with long-term care planning, and assess the socioeconomic and psychological needs of their patients and family members. Furthermore, geriatricians are involved in the preparation of these patients for ESRD care, in exploring the options for RRT, and in addressing end-of-life concerns. ●

S. A. Balogun is affiliated with the Geriatric Division, and E. Abdel-Rahman, MD, PhD, FASN, is affiliated with the Division of Nephrology, University of Virginia, Charlottesville, VA.

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Table 2 . Clinical co-management of chronic kidney disease in elderly patients

Stage 1–3 (mild to moderate)	<p>Monitoring of kidney function and electrolytes</p> <p>Avoidance of nephrotoxic agents and medications</p> <p>Treatment of risk factors BP control: hypertension Glucose control: diabetes mellitus</p> <p>Management of anemia Iron supplementation Erythropoiesis-stimulating agents</p> <p>Dietary modification</p> <p>Ensuring adequate hydration</p>
Stage 4–5 (severe)	<p>Counseling on goals and plan of care</p> <p>Renal replacement therapy Hemodialysis Peritoneal dialysis Renal transplantation</p> <p>Conservative palliative measures</p>