The number of persons aged 65 years and older with end-stage renal disease (ESRD) is increasing and is expected to grow further in the coming years. Simultaneously, the percentage of older adults being treated for ESRD with renal replacement therapy (RRT, which includes peritoneal dialysis or hemodialysis performed in the home or a dialysis center) is also increasing, though African-Americans tend to be referred for dialysis later than others, often because they receive care later in the course of ESRD.

Despite the increased use of RRT, mortality rates of older adults receiving RRT are higher than in younger individuals on RRT for a variety of reasons, including medical comorbidities, limited life expectancy, frailty, and poor functional status. These factors all pose challenges in decision-making about if and when to institute RRT, how best to provide it, and, once begun, whether there is a point at which it should be discontinued.

The decision to initiate (or stop) dialysis in older adults requires a lot of planning and informed decision-making. The general issues that need to be assessed are listed in Table 1. The overall approach to initiating RRT is outlined in the algorithm on the next page.

**Benefits and Challenges of RRT in Older Adults**

RRT offers a survival advantage to older adults with ESRD who have minimal co-morbidities and good functional status. These individuals also report improvement in quality of life from social stimulus at dialysis centers. In addition, it helps alleviate symptoms associated with ESRD. Despite the aforementioned benefits, there are also challenges to providing RRT to older adults (Table 2).

### Table 2. Challenges of RRT in Older Adults

- The need to be present at the dialysis center on a regular basis (for hemodialysis) or manage the dialysis procedure (for home peritoneal dialysis).
- Higher complication rates from hemodialysis in comparison to rates in younger persons, including hypotension, gastrointestinal bleeding, and pain.
- Dialysis fistulas have lower survival rates in older adults (39%) than in younger patients (68%).
- While RRT prolongs life in older adults with ESRD, survival rates while receiving RRT are lower than in younger adults on RRT.
- Progressive decline in emotional, functional, cognitive and physical wellbeing, resulting in higher rates of disability and nursing home placement.
- Higher rates of depression.

Various tools can be used to assess a patient’s cognitive, functional, emotional, and physical status and quality of life (Table 3). For patients with ESRD in whom the evaluation still leaves uncertainty about the desirability of RRT, a trial of RRT can be instituted (see algorithm).

### TIPS FOR DEALING WITH RRT IN OLDER ADULTS

- Decision about initiating RRT in older adults should take into consideration their biological age and life expectancy, along with their cognitive, functional, emotional, and physical well-being and presence of comorbidities and frailty.
- When deciding about initiating RRT, also focus on promoting shared decision making, patient values and preferences, and symptom burden alleviation.
- Patients already on RRT should have periodic assessment of falls, frailty, nutritional status, depression, and changes in cognition and quality of life.

### Table 1. Factors to Consider Before Initiating RRT in Older Adults

- Patient preferences and values
- Life expectancy
- Patient’s general health, nutritional status, and serious medical conditions (e.g., advanced cancer or dementia)
- Patient’s physical, functional, emotional, and cognitive status

### Table 3. Tools for Assessing Older Adults Prior to RRT

<table>
<thead>
<tr>
<th>Cognitive Status</th>
<th>Functional Status</th>
<th>Emotional Status</th>
<th>Physical Status</th>
<th>Quality of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini-Cog</td>
<td>Physical Self Maintenance Scale</td>
<td>Beck Depression Inventory–II</td>
<td>Comprehensive Geriatric Assessment</td>
<td>36-Item Short Form Health Survey (SF-36)</td>
</tr>
<tr>
<td>Mini-Mental State Exam (MMSE)</td>
<td>Vulnerable Elders-13 Survey</td>
<td>Geriatric Depression Scale (GDS)</td>
<td>Fried Frailty Index</td>
<td>Kidney Disease Quality of Life (KDQOL-36)</td>
</tr>
<tr>
<td>Montreal Cognitive Assessment (MoCA)</td>
<td>Patient Health Questionnaire-9 (PHQ-9)</td>
<td>Patient Health Questionnaire-9 (PHQ-9)</td>
<td>Schedule for Evaluation of Individual Quality of Life (SEIQOL)</td>
<td>Schedule for Evaluation of Individual Quality of Life (SEIQOL)</td>
</tr>
</tbody>
</table>
Algorithm for Initiation and Management of Renal Replacement Therapy (RRT) in Older Adults

Older adult with stage-V chronic kidney disease (glomerular filtration rate<15 ml/min) accompanied by shortness of breath, electrolyte abnormalities, volume overload, uremia

- Evaluate for appropriateness of initiating RRT (see Table 1)
- Assure that patient has advance directives and health care proxy

Comorbidities likely to limit benefit of RRT (e.g., advanced malignancy, poor functional status, severe cognitive impairment, etc.)

- Provide medical management and control symptoms; including palliative care as needed
- Discontinue dialysis

No important comorbidities and good functional status; patient likely to benefit from RRT

- Assess decision-making capacity
- Explain pros and cons of different modalities of RRT (peritoneal dialysis, hemodialysis, home hemodialysis), including issues related to living situation and transportation
- Consider patient preferences and goals on therapy (function, comfort or longevity)
- Formulate a plan with the patient and proceed with RRT

Patient with marked functional, physical, and/or cognitive decline while on RRT

- Time-limited trial of RRT
- Continuation based on patient’s goals and prognosis

Unsuccessful trial

Patient stable or continues to improve with no significant decline in functional status

Successful trial

- Ongoing assessment of physical, functional, cognitive, and emotional well-being of the patient while on RRT
- Assess individual quality of life and health-related quality of life
- Analyze if patient goals and preferences are met, with a focus on overall health and functional status

References and Resources:
American Society of Nephrology. Geriatric Nephrology. https://www.asn-online.org/kidneydisease/geriatrics