FAST FACTS AND CONCEPTS #408
CONSERVATIVE MANAGEMENT OF PATIENTS WITH END STAGE RENAL DISEASE
Antonio Corona MD and April Bigelow PhD, AGPCNP-BC

Background ESRD describes advanced kidney failure (typically a glomerular filtration rate < 15 ml/min/m²) and is the point at which many patients start dialysis if they cannot receive a kidney transplant. Conservative management (CM) refers to the management of the symptoms and signs of ESRD in patients who do not receive dialysis or transplantation, whether due to personal preference or comorbidities (e.g., dementia, advanced frailty). Significant symptom burden is common in patients with ESRD nearing the end-of-life, including those receiving CM (1). Fast Fact #207 and 208 discuss discontinuation of dialysis. This Fast Fact will address the CM of ESRD patients.

Lack of energy Depression (see Fast Fact #404), volume imbalance, sleep disorders, poor nutrition, and anemia are common underlying causes of fatigue in patients with ESRD. Blood transfusions have been shown to improve fatigue and self-reported well-being for palliative care patients who are anemic (2). Erythropoietin-stimulating agents are transfusion-sparing interventions that can similarly mitigate fatigue and enhance quality of life for select ESRD patients on CM (3). Psychostimulants do not have supporting evidence in the CKD population and may cause anorexigenic and cardiovascular effects (4).

Itchiness Chronic kidney disease (CKD)-associated pruritus is a common and distressing symptom (5, 6) (See Fast Fact #37). Except for gabapentin, which has been studied in variable doses from 100 mg daily to 400 mg twice weekly in a few trials (7), well-controlled evidence for other effective treatments is lacking. Immunomodulating treatments such as topical tacrolimus (8), ultraviolet light B phototherapy (9), and opioid receptor antagonists have documented efficacy (10). New kappa-opioid receptor antagonists that do not cross the blood brain barrier are being studied with promising clinical results (11).

Dyspnea See Fast Fact #27. Optimize volume status and anemia and address any underlying anxiety.

Pain Systemic NSAIDs are not recommended but topical NSAIDs have been shown to be effective in musculoskeletal syndromes. Opioids that are safer in renal insufficiency include (12): fentanyl, methadone, and buprenorphine. Hydromorphone is commonly used, but the neuroexcitatory effect of its metabolite is often overlooked. For patients with calciphylaxis (see Fast Fact #325), ketamine (13) and topical morphine (14) have been investigated. For the latter, a morphine 0.125% gel mixture (morphine sulfate 10 mg in 8 g of sterile gel) has been recommended up to three times daily (15); however, the systemic bioavailability of topical morphine seems to be low (16). See Fast Facts #161 and 325.

Volume derangements Hypervolemia is common in ESRD, depending on patients' residual renal function, diet, and use of diuretics. The management of volume overload which goes hand in hand with monitoring for renal function and metabolic abnormalities, is contingent on the patient's estimated prognosis. The goal of preserving fluid balance is to manage symptoms such as dyspnea, cramping and debility while minimizing electrolyte derangements. For patients expected to have a more protracted survival, aggressive diuresis with sequential nephron blockade using thiazide diuretics (like metolazone) and aldosterone antagonists (like spironolactone) can be offered (17) while obtaining occasional lab draws. For patients with a shorter life expectancy who do not wish to pursue additional workup, maintenance with a loop diuretic as a single agent is appropriate. In general, oral loop diuretics can be continued in CM if this has been maintaining urine output. Subcutaneous (SQ) or intravenous (IV) furosemide can be used for urgent situations as its onset of action is within 30 minutes. If converting to a parenteral route, divide the oral dose by half; IV and SQ are dosed equally. Keep in mind that patients with advanced CKD often need very high doses to achieve diuresis and in ESRD doses of 80-160 mg IV furosemide at a time are often needed (18). See Fast Fact #353.

GI symptoms Renally-dosed haloperidol is a prudent initial step for nausea management, as it may improve other terminal symptoms in patients with ESRD such as agitation (19). Ondansetron and metoclopramide can be considered as well. The diet should be liberalized, despite metabolic concerns. Dysgeusia and anorexia should be assessed regularly. See Fast Facts # 100, 304, and 314.
Pharmacologic considerations Other interventions that can address electrolyte or acid-base derangements which can potentially cause distressing pain, cramping, or weakness should be discussed with the patient. These include therapies for hyperkalemia, acidemia, and mineral bone disease. Stopping blood pressure medications such as angiotensin converting enzyme inhibitors and angiotensin receptor blockers (ACE/ARB) is recommended as tight blood pressure control only conveys long-term benefits and elevated blood pressure is rarely symptomatic. ACE/ARBs also pose risks of hyperkalemia and symptomatic hypotension complicated by dizziness and falls.

Hospice Prognosis is protracted for patients with ESRD on CM, with survival ranging from around 6 to 23 months (19). This is in sharp contrast to patients stopping dialysis, whose median life expectancy is around 7 days (20). As a result, hospice eligibility varies. In addition to an estimated GFR of <15 ml/min, hospice evaluation for CM patients is warranted for: 1) uncontrolled metabolic derangements such as hyperkalemia and acidemia, 2) uremic symptoms causing frailty or encephalopathy, 3) critical volume overload causing respiratory issues or nephrogenic ascites, and 4) calciphylaxis (21). Early referral to hospice has the potential to reduce healthcare dollar spending and to improve quality of life while effectively managing symptoms as patients approach their end of life (22).

References


**Conflicts of interest:** The authors have disclosed no relevant conflicts of interest.

**Authors’ Affiliations:** Northwell Health, Long Island, NY (AC); University of Michigan School of Nursing, Ann Arbor, MI (AB).

**Version History:** originally edited by Drew A Rosielle MD; first electronically published in October 2020.

**Fast Facts and Concepts** are edited by Sean Marks MD (Medical College of Wisconsin) and associate editor Drew A Rosielle MD (University of Minnesota Medical School), with the generous support of a volunteer peer-review editorial board, and are made available online by the Palliative Care Network of Wisconsin (PCNOW); the authors of each individual Fast Fact are solely responsible for that Fast Fact’s content. The full set of Fast Facts are available at Palliative Care Network of Wisconsin with contact information, and how to reference Fast Facts.

**Copyright:** All Fast Facts and Concepts are published under a Creative Commons Attribution-NonCommercial 4.0 International Copyright (http://creativecommons.org/licenses/by-nc/4.0/). Fast Facts can only be copied and distributed for non-commercial, educational purposes. If you adapt or distribute a Fast Fact, let us know!

**Disclaimer:** Fast Facts and Concepts provide educational information for health care professionals. This information is not medical advice. Fast Facts are not continually updated, and new safety information may emerge after a Fast Fact is published. Health care providers should always exercise their own independent clinical judgment and consult other relevant and up-to-date experts and resources. Some Fast Facts cite the use of a product in a dosage, for an indication, or in a manner other than that recommended in the product labeling. Accordingly, the official prescribing information should be consulted before any such product is used.