

Preparing “Advanced CKD” Patients for Renal Replacement Therapy

This article is the eleventh of a series about chronic kidney disease and its management based on the new National Kidney Foundation guidelines. If you missed previous articles in this series, log onto the IHS website. Archived issues may be found from the Clinical Support Center’s page.

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The Renal Physicians Association recently published recommendations for “appropriate patient preparation for renal replacement therapy.” This group is not part of the National Kidney Foundation Kidney Disease Quality Outcomes Initiative (K/DOQI) referenced throughout this series about chronic kidney disease (CKD). However, the guidelines can assist providers in continuing to improve the quality of care given to chronic kidney disease patients.

“Advanced CKD” is defined as patients with glomerular filtration rates less than 30 mL/min/1.73 m² — stages 4 or 5, not on renal replacement therapy (RRT). With recent updates in the IHS Lab Package, you can have the calculated GFR result at your fingertips. The latest patch includes the capability of calculating GFR whenever a serum creatinine is ordered (see article page 163). Patients with “advanced CKD” will be easily identifiable. Ask your site manager and Laboratory Supervisor when your site will implement this patch.

All recommendations listed in the table below relate to patients over 18 years of age with GFR < 30 mL/min/1.73 m².

Table 1. Appropriate Patient Preparation for Renal Replacement Therapy

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| Anemia | <ul style="list-style-type: none"> • Check hemoglobin (hgb) at least every 3 months • If hgb < 12 mg/dL for a woman or < 13 mg/dL for a man, complete anemia work-up and include iron studies • Treat any identified iron deficiency • If anemia persists despite appropriate evaluation and iron therapy, treat with erythropoietin (EPO) or analogue • Check blood pressure with each dose of EPO |
| Bone Disease | <ul style="list-style-type: none"> • Monitor for acidosis at least every 3 months • Treat serum bicarbonate level \geq 22 mmol/L • Measure serum calcium and phosphorus at least every 3 months, and iPTH at least once. If serum calcium or phosphorus levels are abnormal, measure iPTH at least every 3 months • Place patient on low phosphorus diet (800 - 1000 mg/d) for a month if iPTH > 100 pg/mL (or 1.5 times the upper limit of normal for assay used) OR if serum phosphorus > 4.5 mg/dL. Re-evaluate phosphorus after one month and if still > 4.5 mg/dL start phosphate binding medication. Check iPTH every 3 months after starting phosphate binding medication whether phosphorus is controlled or not • If iPTH > 100 pg/mL (or 1.5 times the upper limit of normal for assay used), measure 25 (OH) vitamin D AND if 25 (OH) vitamin D is < 30 ng/mL treat with 50,000 units of vitamin D₂ orally every month for 6 months • If corrected serum calcium is < 8.5 mg/dL after phosphorus issues are addressed, treat with 1 g/d of elemental calcium between meals or at bedtime • If iPTH > 100 pg/mL (or 1.5 times the upper limit of normal for assay used) after 3 months of treatment, treat with oral active vitamin D (0.25 mcg/d of calcitriol or alfacalcitriol to a maximum of 0.5 mcg/d) |

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| Hypertension | <ul style="list-style-type: none"> • Check blood pressure every clinic visit (visits should be at least every 3 months) • If blood pressure is elevated (> 130 mm Hg systolic OR 80 mm Hg diastolic) encourage and instruct on therapeutic lifestyle changes and intensify blood pressure therapy • Use an ACE inhibitor or an ARB as a first-line agent |
| Nutrition | <ul style="list-style-type: none"> • Monitor nutritional status by measuring weight and serum albumin every 3 months • If weight decreases unintentionally by > 5% or if albumin decreases > 0.3 g/dL or is < 4.0 g/dL (bromo-cresol-green assay) assess for causes. If due to CKD and not other causes, refer for diet assessment and counseling by qualified and experienced personnel • If no response to nutritional intervention in the absence of other causes of malnutrition, patient should begin RRT |
| Dyslipidemia | <ul style="list-style-type: none"> • Assess lipids (total cholesterol, LDL, HDL and TG) • If dyslipidemia, evaluate for secondary causes including comorbid conditions and certain medications • Treat LDL to < 100 mg/dL and non-HDL cholesterol to < 130 mg/dL; fasting TG \geq 500 mg/dL should be treated |
| Timing | <ul style="list-style-type: none"> • Discuss RRT • There is no specific level of GFR that indicates need for RRT • If willing to consider transplant, refer for transplant evaluation unless unacceptable surgical risk or does not satisfy the United Network for Organ Sharing (UNOS) ethics Committee criteria • Preserve veins suitable for vascular access. No blood pressures or blood drawing on that arm. No PICC lines. • If hemodialysis is chosen, refer to surgery for primary AV fistula construction attempt |
| Counseling and Rehabilitation | <ul style="list-style-type: none"> • Counsel and encourage increased physical activity if not already physically active. Refer to physical therapy or cardiac rehabilitation if unable to walk or unable to increase fully mobile physical activity • Patient should receive structured education about preparation for RRT • Encourage to maintain employment and refer to vocational rehabilitation per their preference |

By following these guidelines, patients will be better prepared physically and perhaps emotionally for renal replacement therapy.