

RD Panel Discussion: Understanding Different Nutrition Perspectives Across the CKD Continuum to Improve Communication

Kate Zalewski RDN, CSR, LDN
Registered Dietitian & Board Certified Specialist in Renal Nutrition
Your Kidney Dietitian

Cassie Cederberg RD, CSR
Registered Dietitian
Edward Hines VA

Catalina LaVerne MPH, RD, LDN, CDCES, CCTD
Registered Clinical Dietitian
UI Health



Disclosures

Kate Zalewski: I have no financial relationships to disclose.

Cassie Cederberg: I have no financial relationships to disclose.

Catalina LaVerne: I have no financial relationships to disclose



2

Objectives

Learning objective 1: Identify the differences of goals of nutrition care between CKD, dialysis, and transplant

Learning objective 2: Provide insight on how to better communicate nutrition needs with patient and team members throughout the CKD continuum



3

Nutrition & Role of the RD in CKD

Kate Zalewski RDN CSR LDN

CKD: Nutrition Basics

- Nutrition needs for patients with CKD are very individualized per 2020 KDOQI and 2024 KDIGO guidelines
- Goals of MNT in CKD
 - Slow/delay progression of disease
 - Treat/manage root cause of CKD (i.e. diabetes, HTN)
 - Help patients achieve a healthy body weight
 - Maintain labs within normal range
 - Manage symptoms such as high blood pressure, fluid retention, nausea (more common in later stages)

CKD: Nutrition Basics

Nutrient	2020 KDOQI Guidelines
Protein	0.6-0.8 g/kg body weight (stage 3a-5, +DM) 0.55-0.6 g/kg body weight (stage 3a-5, -DM & metabolically stable) "Insufficient evidence to recommend a protein type"
Phosphorus	Reasonable to adjust dietary phosphorus intake to maintain normal serum phos; consider the bioavailability of phosphorus sources (eg, animal, vegetable, additives)
Potassium	Reasonable to adjust dietary potassium intake to maintain normal serum potassium; consider factors other than diet that influence serum potassium
Sodium	Limit to <2,300 mg per day to reduce blood pressure & improve volume control
Calcium	800-1000 mg/day total elemental Ca to maintain neutral Ca balance (CKD 3-4)
Dietary acid load	"In adults with CKD 1-4, we suggest reducing net acid production (NEAP) through increased dietary intake of fruits and vegetables in order to reduce the rate of decline of residual kidney function"

CKD: Availability/Access to Nutrition Care

- Medical nutrition therapy (MNT) for patients with CKD is most commonly provided by a registered dietitian in an outpatient setting
- Covered by most insurance plans including Medicare
 - Medicare 3 hrs first year, 2 hrs in subsequent years
 - Commercial insurance: coverage varies by plan
- Estimated that only 1 in 10 patients with CKD receive any MNT prior to starting dialysis

Medical Nutrition Therapy for Patients with Non-Dialysis-Dependent Chronic Kidney Disease: Barriers and Solutions
Koranyi, Holley et al.
Journal of the Academy of Nutrition and Dietetics, Volume 115, Issue 10, 1958 - 1965

CKD: Role of the RD

- Review patient's labs, medications/supplements, diet history
- Assess pt's current health situation and dietary needs
- Provide education, counseling, and goal setting with patient
- Meet for follow up appointments as needed (frequency varies based on pt's need, lab draw schedule)
- Communicate with other providers such as nephrologist, PCP, or other dietitians (i.e. transplant RD)
- Job may also involve admin work like scheduling, billing, etc.

Where to find a CKD RD

www.kidney.org/ckdrd



Nutrition & Role of the RD in Dialysis

Cassie Cederberg, RD, CSR

NATIONAL KIDNEY FOUNDATION

of America

Interdisciplinary Nephrology Conference

10

Dialysis: Nutrition Basics

- Recommendations should always be tailored to the individual
- HD goals: adequate protein, energy, optimal fluid, wt and BP management, and acceptable lab values
- Nutrition assessments should include:
 - monthly review of lab results with patients
 - wt., volume status, albumin, adequacy, dialysis prescription
 - glycemic control, cardiovascular health
 - appetite, intake (change in GI, OTC, medications, dysphagia)
 - review of past goals, education, ability to self care/attitude towards wellbeing, etc

NATIONAL KIDNEY FOUNDATION

of America

Interdisciplinary Nephrology Conference

11

Dialysis: Nutrition Basics

Protein	1-1.2g/kg
Energy	25-25kcal/kg
Calcium, Phosphorus, Potassium	ADjust intake to keep WNL
Sodium	<2300mg/day

NATIONAL KIDNEY FOUNDATION

of America

Interdisciplinary Nephrology Conference

12

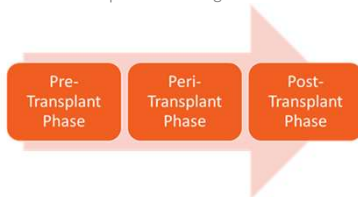
Dialysis: Role of the RD

- Centers for Medicare and Medicaid Services (CMS) provides guidelines on nutrition care from RD in dialysis
 - complete comprehensive nutrition assessment within 30 days (or 13 treatments) of dialysis initiation/transfer/modality change,, 90 days subsequently, and at least annually thereafter, as well as monthly unstable assessments
 - evaluate lab results
 - assist with anemia management, CKD-MBD
 - participate in QAPI program
 - develop plan of care with IDT (identify nutrition issues w/established pt goals and interventions)

Nutrition & Role of the RD in Transplant

Pre-Transplant: Nutrition Basics

When does the Transplant Dietitian get involved?



Organ Transplant Regulations

Each individual transplant program has own policies and procedures with differing criteria for the selection of kidney recipients.

Transplant Regulatory organizations include:

- Centers for Medicare & Medicaid Services (CMS)

- United Network for Organ Sharing (UNOS)

- Organ Procurement and Transplantation Network (OPTN)

Transplant Dietitian is involved in every aspect of organ transplant evaluation alongside the Transplant Team.

RD Role Pre-Transplant

Transplant nutrition evaluations may include:

- Review pertinent laboratories, medications, anthropometrics, nutrition-focused physical exam, nutrition history with dietary recall

- Assess dietary compliance: renal diet, self-monitoring blood glucose levels, fluid restriction, etc.

- Assess functional status

- Assess nutritional risk for transplant (are they malnourished?)

Educate transplant candidates and caregivers on nutritional requirements for transplant.

Identify any barriers to transplantation: Are they able to follow diet and comply? Are there any serious medical conditions or contraindications?

Compliment role of Dialysis/Nephrology Team

RD Role Pre-Transplant

Patients undergoing transplantation are at increased nutrition risk because of chronic organ failure leading to transplantation, the transplant surgery itself, common post-transplant complications, and need for lifelong immunosuppression therapy.

Most patients pre-transplant are malnourished using Subjective Global Assessment (SGA), the Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition (AND/ASPEN) Malnutrition Consensus statement, or the Global Initiative on Malnutrition (GLIM) Criteria.

Transplant evaluations may focus on enhancing nutrition prior to transplant in high-risk patients

Obesity Management

Transplant centers may have BMI "cut-offs"

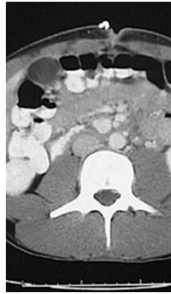
"Candidates should not be excluded from transplantation solely because of obesity"

Anthropometric data and imaging are better discriminators of cardiovascular disease risk factors compared with body mass index (BMI).

Computed tomography (CT), dual-energy X-ray (DEXA), bioelectrical impedance analysis (BIA), etc

Short-term complications: delayed graft function, higher risk for surgical site infection (SSI), longer length of stay (LOS), higher costs, surgical challenges

Long-term outcomes: graft survival, patient mortality, co-morbidities



Pre-Transplant Process

Ideal candidates usually:

- Demonstrate good management of co-morbidities

- Comply with dietary recommendations from dialysis

- Understand rationale of diet therapy

- Be well-nourished with good muscle reserves

- Trend towards ideal body weight

- Demonstrate good motivation towards diet changes

Referrals frequently placed out to non-surgical weight management, bariatric surgery, diabetes educator, Endocrinology, physical therapy, etc



Immediate Post Op Nutrition

Post-Transplant patients in the ICU setting present unique nutrition challenges that may not be addressed by the ASPEN/SCCM critical care guidelines.

Increased calorie/protein/fluid needs in immediate post-transplant phase due to high-dose corticosteroids and acute phase of illness

Additional nutrient needs if CRRT/HD, wound vac, surgical drains, etc present

If patient remains intubated, initiate nutrition support via NG/OG tube within 24-48 hours of intubation

No specific enteral formula for transplant patients, standard polymeric formula is appropriate

If significant electrolyte abnormalities develop, a specialty formula designed for renal dysfunction may be considered



Estimating Nutrients Needs

Increased energy, protein, and fluid needs can last up to 6-12 months

Indirect calorimetry is gold-standard to estimate macronutrient needs (however, contraindicated with dialysis). If not available, predictive equations may be used:

Energy needs are 20-50% increased

Energy: 30-35 kcal/kg with normal BMI

Protein: 1.3-2 g/kg protein with normal BMI

Fluids: 30-35 mL/kg

For obesity, few guidelines available, will utilize IBW

No specific recommendations for vitamin and mineral supplementation

Transplant Medications and Side Effects

Maintenance Immunosuppression

Cyclosporine – N/V, loss of appetite, diarrhea or constipation, hyperlipidemia, swollen or painful gums, hypomagnesemia, hyperglycemia, infection

Tacrolimus (Prograf, Astagraf) – hyperkalemia, hypophosphatemia, hyperglycemia, hypomagnesemia, N/V, stomach pain, loss of appetite, diarrhea or constipation, hyperlipidemia, tremors, infection

Mycophenolate Mofetil (Cellcept) – significant GI effects i.e. N/V, diarrhea (can be severe), constipation, infection

Sirolimus (Rapamune) – poor wound healing, diarrhea, N/V, abd pain, infection, anemia

Prophylactic anti-infective Meds

Valganciclovir (Valcyte) - GI distress

Sulfamethoxazole/Trimethoprim (Bactrim) - GI distress, hyperkalemia

Steroids (Prednisone, Methylprednisolone) – decreased bone density/osteoporosis, GI distress, hyperglycemia, increased appetite, weight gain

Post-Transplant: Nutrition Basics

Post operative diet progression (bariatric diet?)

Healthy, balanced diet including whole grains, lean protein, fruits, vegetables and low-fat dairy (based on DASH or Mediterranean Diet)

Adjust intake of potassium, phosphorus, and magnesium depending on electrolyte levels

Adequate protein, energy intake

Weight management

Diabetes management/prevention post transplant diabetes

HTN/lipid management

Drug/herbal/nutrient interactions

Vitamin, mineral supplementations

Gastrointestinal issues

Hydration status

Bone disorders

Proper food safety practices

Long-Term Transplant Nutrition

Per CMS guidelines:

"Nutrition and pharmacology services may be phased out if no specific needs are identified during [...] evaluation, or if not specifically warranted in future... The multidisciplinary team must note any further clinical needs identified after phase-out and notify the dietitian if there is a need for further intervention."

Complications of Transplant:

Weight gain/obesity, diabetes/new-onset diabetes after transplant (NODAT), hypertension, hyperlipidemia, osteoporosis

Typical 1 year post transplant weight gain is 20%

Body changes from time of transplant to 1 year post

- ↓ Muscle mass
- ↑ Fat mass
- ↑ Triglycerides
- ↑ Total cholesterol
- ↑ Blood sugar

Questions?
