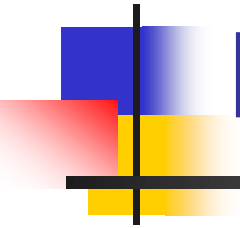


Renal Transplant

Jennifer Oldfather

KNH 406

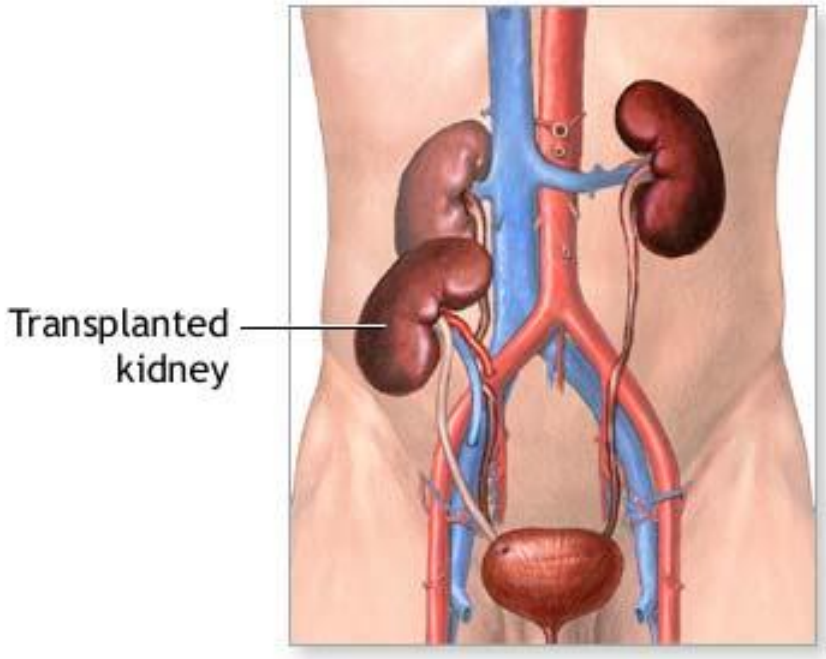
Mrs. Enez Joaquin

- 26 years old
- Stage 5 CKD
  - Hemodialysis, 2 years
- BMI= 32.5
  - Weight: 165 lbs, Height: 5’0”
- Type 2 Diabetes Mellitus (Dx at age 13)
- Compliant with renal diet since beginning hemodialysis
- Admitted in prep for cadaveric renal transplant

Etiology

- Stage 5 Chronic Kidney Disease
  - Kidney Failure
- Often caused by type 2 DM
- Diagnosed by Glomerular Filtration Rate (GFR)

Kidney Transplant



In most cases, the recipient's native kidneys are left in place, and the transplanted kidney performs all the functions that both kidneys perform in healthy people.

Post-Operative Nutrition Needs

- Acute Phase
  - Up to 8 weeks after surgery
- Chronic Phase
  - Beginning the 9th week after surgery
- Nutrition needs change between acute and chronic phase.

Nutrient	Acute Phase	Chronic Phase	Rationale
Protein	1.3-1.5g/kg	1.0g/kg	Higher during acute phase due to postoperative stress and excessive doses of corticosteroids.
Energy	30-35 kcal/kg	Maintain desirable weight	Higher during acute phase due to postoperative stress.
Carbohydrates	50-60% of total kcal, limit simple CHO if glucose intolerance is apparent	50-60% of total kcal; emphasis on complex CH0 and 20-30 g dietary fiber (5-10g soluble fiber)	Glucose intolerance is a frequent occurrence in post transplant patients, therefore complex CHO should be emphasized to stabilize blood glucose levels.
Fats	25-35% of total kcal	25-35% of total kcal with saturated fat <7% of total kcal; up to 10% of kcal from PUFA, and up to 20% of kcal from MUFA	CVD is the leading cause of mortality in kidney transplant patients, so a low-fat diet is a cornerstone of therapy.
Cholesterol	--	<200 mg/day	CVD leading cause of mortality in kidney transplant patients.

Nutrient	Acute Phase	Chronic Phase	Rationale
Potassium	2,000-4,000 mg if hyperkalemia exists	No restriction unless hyperkalemia exists	Restriction warranted in the presence of hyperkalemia during the acute period. In the chronic period, K is not restricted and hypokalemia has even been noted in patients taking potassium-wasting diuretics.
Sodium	2,000-4,000 mg may be necessary	2,000-4,000 with hypertension	HTN is common in post transplant patients (50-80%), and is therefore restricted in the postoperative period. A 4g sodium restriction may be necessary if immunosuppressive agents cause HTN and fluid retention.
Calcium	1,200-1,500 mg	1,200-1,500 mg	Corticosteroid medications can lead to decreased intestinal absorption of calcium and hypercalcuria.
Phosphorus	1,200-1,500 mg (supplements may be needed)	1,200-1,500 mg (supplements may be needed)	Hyperparathyroidism can contribute to low phosphorus levels.
Vitamins/ minerals	Dietary reference intake	Dietary reference intake; may need additional vitamin D	Vitamins/minerals no longer being removed during dialysis. Vitamin D needed to prevent osteoporosis as a result of corticosteroids.
Fluids	No restriction unless graft not functioning	No restriction unless graft not functioning	Transplanted kidney is now able to filter water and remove from the body.

Postoperative Nutrition Needs

- 30-35 kcal/kg
- 1.3-1.5 g/kg protein
- Limit simple carbohydrates if glucose intolerance is present
  - Since type 2 diabetic, emphasize complex CHO

Why is diet important?

- Cardiovascular disease is leading cause of mortality this population.
- Post-surgery medications have food-drug interactions
- Food safety is critical

Medication	Indications/ Mechanism	Nutritional Implications
Neoral	Indicated for the prevention of organ rejection in kidney, liver, and heart transplants	No potassium supplements or salt substitutes. Avoid grapefruit and red wine. Anorexia is a concern.
Imuran	Immunosuppressant works as an adjunct for the prevention of rejection in renal transplantation	Anorexia, steatorrhea. Take with food to prevent upset stomach.
Prednisone	Corticosteroid that prevents inflammation	Caution with DM patients, highly protein bound; may need increased K, PO_4, CA, and vitamins A, C, and D, increased protein, decreased dietary sodium; avoid alcohol
Magnesium oxide	Can be used as a magnesium supplement, but also commonly as an antacid	Diarrhea is a common side effect
Bactrim	Treats bacterial infections (due to suppressed immune system)	Nausea and vomiting are common side effects. Should be taken on an empty stomach. Limit alcohol intake.
Neutral-phos	Used as a phosphorus supplement	Must closely monitor potassium levels while taking medication
Persantine	Indicated as an adjunct to coumarin anticoagulants in the prevention of postoperative clot formations	Vomiting, diarrhea. Dizziness is common so alcohol should be limited/ avoided. Caffeine may interfere with the drug's effects.
Omeprazole	Prevents and/or treats stomach ulcers caused by other medications	Nausea, vomiting, diarrhea. May deplete or interfere with the absorption of calcium, folic acid, and vitamin C. Supplementation may be necessary.
Glucophage	Indicated as an adjunct to diet and exercise to improve glycemic control in adults and children with type 2 DM	Avoid alcohol. Take medication with meals.

Immunosuppressants

- A type of drug that suppresses the immune system so that it does not initiate an attack on the transplanted organ
- Make the body very susceptible to infection
- Food safety is critical! Due to the suppressed immune system, the body may not be able to fight off agents that cause food borne illness.

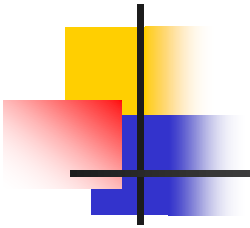
Diet Post-Op

Patients no longer must follow strict renal diet. They may now eat a much more varied diet and be less cautious about specific nutrient and fluid intakes.

Prognosis

- About 95 percent of people who receive a living-donor kidney transplant have a functioning kidney after one year. After five years, that rate is about 80 percent.
- About 92 percent of people who receive a deceased-donor kidney transplant have a functioning kidney after one year. Five years after transplant, the rate is about 70 percent.
- If your new kidney fails, you can resume dialysis or consider a second transplant. You may also choose to discontinue treatment.

(MayoClinic.com)



Questions?