Acute Renal Failure Diet

1. Purpose
   a. Nutrition Indicators
      i. diagnosis is abrupt (< 48 hours) absolute increase in serum creatinine of > 0.3 mg/dL, a percentage increase of 50%, or a reduction in urine output of < 0.5 mL/kg/hr for > 6 hours
      ii. acidosis
      iii. electrolyte imbalances (hyperkalemia, hyperphosphatemia)
      iv. fluid disturbances
      v. impaired glucose utilization
      vi. protein catabolism
      vii. accumulation of metabolic waste products
      viii. rapid decrease in urine output
   b. Criteria to Assign the Diet
      i. symptoms develop in < 48 hours
      ii. absolute increase in serum creatinine of > 0.3 mg/dL or a percentage increase of 50%
      iii. or a reduction in urine output of < 0.5 mL/kg/hr for > 6 hours
   c. Rationale for Diet
      i. manage fluid balance
      ii. manage electrolyte balance
      iii. eliminate cause of kidney failure
      iv. prevent further kidney damage
      v. provide adequate calories and protein
      vi. prevent nutritional deficiencies
      vii. manage anemia

2. Population
   a. Overview
      i. occurs in 20% of patients admitted to ICU
      ii. mortality ranges from 40-80%
   b. Disease Process
      i. acute renal failure is a secondary condition often due to sepsis, trauma, or multiple organ failure
   c. Biochemical and Nutrient Needs
      i. maintenance of electrolyte balance
      ii. maintenance of fluid balance

3. General Guidelines
   a. Nutrition Rx
      i. protein: 0.8-1.2 g/kg body weight; 1.2-1.5 g/kg if catabolic
      ii. energy: 25-35 kcal/kg (consider kcal from CRRT)
      iii. sodium: 2-3 g/day based on blood pressure/edema
iv. potassium: 2-3 g/day, replace loss in diuretic phase
v. phosphorus: 8-15 mg/kg
vi. calcium: maintain serum value within normal limits
vii. fluid: 500 cc + urine output
viii. vitamins/minerals: DRIs, adjust to level of catabolism

b. Adequacy of Nutrition Rx
i. the effectiveness of nutrition support has not been proven but is supported theoretically
ii. additional nutrients may be required for patients with negative nitrogen balance

c. Goals
i. management of fluid balance
ii. management of electrolyte abnormalities

d. Does it Meet DRI
i. additional fluids are needed due to dialyses losses
ii. additional water-soluble vitamins may be needed
iii. vitamin D supplementation may be needed to prevent secondary hyperparathyroidism
iv. vitamin K supplement may be needed for patients on antibiotics

4. Education Material
a. Nutrition Therapy
   i. sample menu
   ii. lists of foods to include/avoid
   iii. exchange lists and forms to chart intake
b. Ideas for Compliance
   i. provide above materials
   ii. continue to monitor and notify patient of progress

5. Sample Menu
a. Foods Recommended
   i. eggs
   ii. fish
   iii. lamb
   iv. pork
   v. cheese
   vi. organ meats
   vii. tofu
   viii. yogurt
   ix. low-potassium vegetables
   x. low-salt dry cereals
   xi. cooked rice
   xii. unsalted crackers
   xiii. sugar cookies
b. Foods to Avoid
i. deli meats
ii. bacon, sausage
iii. processed cheese and meats
iv. dried beans
v. nuts
vi. canned vegetables
vii. pickles and sauerkraut
viii. cream sauce
ix. butter milk
x. whole milk

c. Example of a meal plan
i. breakfast
   ½ c. cranberry juice
   1 c. puffed wheat cereal
   1 egg
   1 slice toast with 2 t. margarine
   1 c. coffee

ii. lunch
   turkey sandwich
   ½ c. cucumber salad
   1 T. oil and vinegar dressing
   1 medium apple
   1 c. lemonade

iii. dinner
   ½ c. pineapple juice
   ½ c. rice
   ½ c. green beans
   1 c. tossed lettuce with oil and vinegar dressing
   1 dinner roll
   ½ c. sliced peaches
   1 c. iced tea

iv. snack
   1 baked apple with non-dairy whipped topping

6. Websites
   a. Organizations with Websites
      i. http://www.gastro.org/wmspage.cfm?parm1=678
      ii. http://www.eatright.org/Public/content.aspx?id=4294967309
      iii. http://www.eatright.org/Public/content.aspx?id=4294967309
   b. Government Websites

7. References
   a. Journal articles references


