Proper Formulas for a Hemodialysis Patient on Tube Feeding

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**Dialysis**

**Nutrition concerns:** adequate protein and calorie, sodium/fluid balance, phosphorus and calcium, potassium, vitamins and minerals.

**Medical Nutrition Therapy goals:**
- Prevent deficiency and maintain good nutrition status; control edema and electrolyte imbalance; prevent renal osteodystrophy

**Hemodialysis Nutrient Needs**

- **Protein:** 83.5-125.3g (1-1.5 g/kg for adult on hemodialysis, dry wt)
- **Potassium:** 2000-3000 mg
- **Phosphorus:** 1200 mg; 1-2 servings of dairy products/day
- **Sodium:** 2-3 gm/day
- **Fluid:** 1000 cc or urine output + 750 cc
- **Renal Vitamins:** Nephrocap, Nephplex, Nephron-FA, Renal Caps, Diatyx

**Nutrition Assessment**

- **Body weight:**
  - Dry wt: 83.5 kg
  - Ideal BW: 63.82 kg
  - Wi change: -11.5 kg (12%) in 4 mon
- **Energy needs:** Harris-Benedict equation + 20% (stress) = 1886 kcal
- **Subjective Global Assessment:** 23, moderately-severely malnourished
- **Fluid gain:** -3.5 to 7 kg (avg 1.4 kg)
- **Total tube feeding via gastrojejunostomy (GJ) tube, discharged on formula Novasource Renal**
- **Relevant Meds:** erythropoietin (EPO), Vitamin D3, Miralax
- **Social History:** residing at nursing home with supportive wife

**Monthly Lab Results**

<table>
<thead>
<tr>
<th></th>
<th>April</th>
<th>March</th>
<th>February</th>
<th>Goal</th>
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</thead>
<tbody>
<tr>
<td>Pre-dialysis BUN (mg/dL)</td>
<td>57</td>
<td>83</td>
<td>50-100</td>
<td></td>
</tr>
<tr>
<td>Post-dialysis BUN (mg/dL)</td>
<td>15</td>
<td>25</td>
<td>4-20</td>
<td></td>
</tr>
<tr>
<td>Albumin (g/L)</td>
<td>3.3</td>
<td>3.7</td>
<td>2.6</td>
<td>Above 4.0</td>
</tr>
<tr>
<td>Potassium (mmol/L)</td>
<td>5.8</td>
<td>4.4</td>
<td>4.2</td>
<td>3.5-5.5</td>
</tr>
<tr>
<td>Phosphorus (mg/dL)</td>
<td>5.0</td>
<td>3.6</td>
<td>5.2</td>
<td>3.5-5.5</td>
</tr>
</tbody>
</table>

**Diagnosis (PES)**

- **Inadequate K and PO4 intake v/t inappropriate use of renal tube feeding formula Novasource Renal which is low in K and PO4 AEB calculated intake from tube feeding less than requirements for K and PO4 and patient’s PO4 dropped from 5.2 to 3.6 since starting on tube feeding.**

**Interventions (cont’d)**

- **Tube feeding total volume:**
  - Fluid overload prevention vs. tube clogging prevention
    - Normal tube feeding flushes goal for renal is 30-60cc at start, stop and med pass to prevent fluid overload
    - Pt’s fluid gain was reasonable, thus recommend to increase flushes to 60cc-100cc to prevent clogging
  - 1 week later, noted edema in pt’s arm and ankles, change tube feeding formula to more concentrated Nutren 2.0

- **Elevated K at 5.8 on a 2K dialysate bath**
  - Expected to be stable with total tube feeding, if continues elevating, will considering changing to 1K bath
  - Nutren 2.0 only provides 1728mg K, expect it may help bring down K levels

- **Tube feeding formula appropriateness**
  - Change tube feeding formula from Novasource Renal to Isosource 1.5 to provide adequate K and PO4 as recommended

**Plan**

- Per Speech Language Pathologist consultation, maintain tube feeding to meet pt’s nutritional needs while assisting him to strengthen oral motor skill and improve swallow
- Continue monitoring tube feeding tolerance, fluid status, tube patency, weight stabilization and wound healing
- Reassess diet labs in mid-May