

## **Study PN Protocol A: ALL PATIENTS EXCEPT MALNOURISHED PATIENTS**

### **Feeding Day 1 (first 24 hours of PN)**

- Commence TPN at **60ml/hr** (or goal rate, whichever is lower).
- **Consider** trace element, mineral and vitamin needs as clinically appropriate.

### **Feeding Day 2 (second 24 hours of PN)**

- Increase TPN to **80ml/hr** (or goal rate, whichever is lower).
- **Consider** trace element, mineral and vitamin needs as clinically appropriate.

### **Feeding Day 3 (next 24 hours)**

- Increase TPN to **goal rate**, as appropriate.
- **Consider** trace element, mineral and vitamin needs, as clinically appropriate.
- **Recommend** trialing enteral/oral nutrition, if clinically appropriate.
- Once the patient tolerates  $\geq 475$  kcal/day EN, complete remainder of 24 hour TPN infusion and do not hang another bag.
- If patient tolerates any oral caloric intake from food, complete remainder of 24 hour TPN infusion and do not hang another bag.

### **Feeding Day 4 (next 24 hours) plus all additional days after Day 4**

- **May switch** to parenteral nutrition solution tailored to patient's specific clinical needs. Goals not to exceed 25–35 kcal/kg and 1.0–1.5 g protein/kg.
- **Consider** long term needs regarding trace element, mineral and vitamins as clinically appropriate.
- **Recommend** trialing enteral/oral nutrition, if clinically appropriate.
- Once the patient tolerates  $\geq 475$  kcal/day EN, complete remainder of 24 hour TPN infusion and do not hang another bag.
- If patient tolerates any oral caloric intake from food, complete remainder of 24 hour TPN infusion and do not hang another bag.

## **INSULIN / GLUCOSE PROTOCOL: Early PN Patients**

If glucose levels exceed **10 mmol/L** an insulin infusion should be commenced and titrated to achieve peak serum glucose levels of **< 10 mmol/L**. Frequent monitoring of the patient's blood glucose should be initiated as per your ICU's usual practice for patients receiving an insulin infusion.

If insulin infusion is required at  $\geq 6$  units/hr to maintain glucose target:

- Reduce Kabiven G19% to 40ml/hr for 24 hours.
- At the end of 24 hours, if insulin needs are reduced below 6 units/hr, increase Kabiven G19% to 80mls (or original goal rate, whichever is lower) for 24 hours.
- At the end of this second 24 hour period, if insulin needs remain below 6 units/hr, increase Kabiven G19% to goal rate.
- If insulin requirements exceed 6 units/hr at any time during the above process, reduce PN to previously tolerated rate, or 40 mls/hr (whichever is higher), for 24 hours. Begin increasing rate every 24 hours as above, if tolerated.

**Note:** This Early PN Trial study document has been modified from its original form to allow for use with a generic TPN solution. The original study TPN (Kabiven G19%) contained approx 0.9 kcals / ml total energy (including protein). If the TPN you intend to use with this protocol contains over 1.0 kcals / ml we recommend recalculation of Day 1 and Day 2 infusion rates to ensure lower energy intakes.

**Study PN Protocol B: MALNOURISHED PATIENTS (Ex. BMI  $\leq$  17 or clinical diagnosis):**

**Feeding Day 1 (first 24 h of PN)**

- Commence TPN at **40ml/hr** (or goal rate, whichever lower).
- **Strongly recommend** administering 100mg thiamine, commencing at least 30 minutes prior to initiation of TPN infusion, as clinically indicated as per product licensing indications.
- **Recommend** daily administration of other vitamins, minerals and trace elements, as clinically appropriate.

**Feeding Day 2 (second 24 hours of PN)**

- Increase TPN to **60ml/hr** (or goal rate, whichever is lower).
- **Recommend** daily administration of vitamins, minerals and trace elements, as clinically appropriate.

**Feeding Day 3 (next 24 hours)**

- Increase TPN to **goal rate**, as appropriate.
- **Recommend** daily administration of vitamins, minerals and trace elements, as clinically appropriate.
- **Recommend** trialing enteral/oral nutrition, if clinically appropriate.
- Once the patient tolerates  $\geq$  475 kcal/day EN, complete remainder of 24 hour TPN infusion and do not hang another bag.
- If patient tolerates any oral caloric intake from food, complete remainder of 24 hour TPN infusion and do not hang another bag.

**Feeding Day 4 (next 24 hours) *plus all additional days after Day 4***

- **May switch** to parenteral nutrition solution tailored to patient's specific clinical needs. Goals not to exceed 25–35 kcal/kg and 1.0–1.5 g protein/kg.
- **Strongly recommend** addressing long term needs regarding trace elements, minerals and vitamins as clinically appropriate.
- **Recommend** trialing enteral/oral nutrition, if clinically appropriate.
- Once the patient tolerates  $\geq$  475 kcal/day EN, complete remainder of 24 hour TPN infusion and do not hang another bag.
- If patient tolerates any oral caloric intake from food, complete remainder of 24 hour TPN infusion and do not hang another bag.

**INSULIN / GLUCOSE PROTOCOL: Early PN Patients**

If glucose levels exceed **10 mmol/L** an insulin infusion should be commenced and titrated to achieve peak serum glucose levels of **< 10 mmol/L**. Frequent monitoring of the patient's blood glucose should be initiated as per your ICU's usual practice for patients receiving an insulin infusion.

If insulin infusion is required at  $\geq$  **6 units/hr** to maintain glucose target:

- Reduce Kabiven G19% to 40ml/hr for 24 hours.
- At the end of 24 hours, if insulin needs are reduced below 6 units/hr, increase Kabiven G19% to 80mls (or original goal rate, whichever is lower) for 24 hours.
- At the end of this second 24 hour period, if insulin needs remain below 6 units/hr, increase Kabiven G19% to goal rate.
- If insulin requirements exceed 6 units/hr at any time during the above process, reduce PN to previously tolerated rate, or 40 mls/hr (whichever is higher), for 24 hours. Begin increasing rate every 24 hours as above, if tolerated.

**Note:** This Early PN Trial study document has been modified from its original form to allow for use with a generic TPN solution. The original study TPN (Kabiven G19%) contained approx 0.9 kcals / ml total energy (including protein). If the TPN you intend to use with this protocol contains over 1.0 kcals / ml we **strongly** recommend recalculation of Day 1 and Day 2 infusion rates to ensure lower energy intakes.