

Parenteral nutrition (PN) Intravenous for Adults (Kabi)

Who can administer

May be administered by registered competent doctor or nurse/midwife

Important information

- **Not routinely stocked in GUH- must be discussed between Dietetics and Pharmacy on an individual patient basis**
- **Strict aseptic technique** is vital when preparing PN - use a clean trolley with a sterile surgical sheet
- A DEDICATED CVC lumen must be used
- Excessively fast administration rate can lead to nausea, vomiting, shivering and electrolyte disturbances
- **PN must be prescribed** on the drug kardex
- Addition of **electrolytes can be fatal, DO NOT add unless on written advice of** an experienced PN pharmacist

| | Kabi 6c | Kabi 8C | Kabi 11C | Kabi 19C | Kabi 25C (fat free) | Kabi 5C |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Route of administration | Central line | Central line | Central line | Central line | Central line | Central line |
| | Content per bag | Content per bag | Content per bag | Content per bag | Content per bag | Content per bag |
| Total bag volume | 2000ml | 2000ml | 2302ml | 1000ml | 2000ml | 1536ml |
| Nitrogen (g) | 15 | 18 | 18 | 11 | 15 | 9 |
| Amino acids (g) | 87.5 | 105.1 | 105.1 | 64.2 | 87.5 | 52.5 |
| Total calories (kcal) | 2211 | 1731 | 2211 | 1278 | 1950 | 1521 |
| Non-protein calories (kcal) | 1861 | 1311 | 1791 | 1021 | 1600 | 1311 |
| Glucose calories (kcal) | 1000 | 800 | 1060 | 500 | 1600 | 800 |
| Lipid calories (kcal) | 861 | 511 | 731 | 521 | nil | 511 |
| Non-protein calories/nitrogen ratio (kcal/g N) | 124 | 73 | 99.5 | 93 | 107 | 147.5 |
| Sodium (mmol) | 80 | 60 | 84.3 | 40 | 72 | 72 |
| Potassium (mmol) | 80 | 80 | 84 | 40 | 60 | 10 |
| Magnesium (mmol) | 12 | 12 | 12.2 | 5 | 5 | 1.5 |
| Calcium (mmol) | 5 | 5 | 7 | 2.5 | 5 | 5 |
| Phosphate (mmol) (inclusive of SMOFLipid and Vitlipid) | 27.7 | 30 | 25 | 15 | 25 | 7.7 |
| Acetate (mmol) (from Aminoven 25) | 87.6 | 105 | 105 | 66.5 | 87.6 | 52.53 |
| Chloride (mmol) | 127 | 97 | 142.3 | 62 | 92 | 83.39 |
| pH | no data | no data | no data | no data | no data | no data |
| Osmolarity (mOsm/L)(approx) | 1374 | 1274 | 1302 | 1596 | 1678 | 1255 |

Methods of intravenous administration

Continuous intravenous infusion (administer using an electronically controlled infusion device)

- Administer at a rate specified by dietitian - via Central Line only for regimens with 'C' in regimen name, e.g. Kabi 5C, 6C, 8C, 11C, 19C, 25C

Dose in adults

1: Normal dose

- The dose and rate of administration varies - consult dietitian for guidance for each individual patient
- Normally the rate is increased gradually during the first 24 to 48 hours, and is then adjusted depending on total volume to be given and the time over which it is to be administered

2: Out of hours Parenteral Nutrition (PN) guidelines

- This Out-Of-Hours guidance is for **CENTRAL PN administration ONLY** using Fresenius **Kabi PN 19C** (cannot be given via peripheral route).
- All patients requiring PN should have a dedicated central port for PN

If essential the following guidelines should be used

2(a): Normal weight patients
 2(b): Malnourished (risk of refeeding) patients
2(a): Suggested PN Rates for NORMAL WEIGHT Patients (BMI 20-25)

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| ^ | Required feed | Rate |
|--------------------------|---------------|----------|
| Central line ONLY | Kabi PN 19C | 30mls/hr |

- This rate provides approximately 720 mls = 920 kcals, 7.9g nitrogen per 24 hours
- This will avoid serious underfeeding or overfeeding in normal weight patients, who are not at risk of refeeding syndrome. Refer to dietitian as soon as possible
- These rates should not be used for patients at risk of refeeding syndrome

2(b): Suggested rate for MALNOURISHED patients who are at risk of refeeding syndrome

- Administer Pabrinex I + II once daily for 5 days 30 minutes before starting PN. Monitor electrolytes and supplement as required

| ^ | Day | Required feed | Rate |
|---------------------|-----|---------------|--------------------|
| Central only | 1 | Kabi PN 19C | 15 mls/hr x 24 hrs |
| ^ | 2 | Kabi PN 19C | 25 mls/hr x 24 hrs |

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- Day 1 : Kabi PN 19C 15mls per hour, for 24 hours (360ml/24 hours = 460 Kcal, 3.9g nitrogen per 24 hours)
- Day 2: Kabi PN 19C 25ml per hour (600ml/24 hours =766kcal, 6.6 g nitrogen per 24 hours), until reviewed by a clinical dietitian
- Chronically malnourished patients are at risk of refeeding syndrome e.g. chronic alcoholics, anorexia nervosa patients and patients unfed for seven to ten days with evidence of stress and depletion
- Giving these patients too much too soon can lead to potentially life-threatening abnormalities e.g hypophosphataemia , hypokalaemia and hypomagnesaemia

Monitoring

- Monitor water and electrolyte balance, serum osmolarity, triglycerides, acid/base balance, blood glucose, U&E's and LFT's throughout treatment
- Serum triglyceride concentrations must be checked twice weekly - see Parenteral Nutrition guidelines 2015 (Q pulse: CLN-DIET-054)

Further information

- Allergens: **Egg** protein, **fish, soya, nuts** - contact pharmacy for further details
- **Other formulations** are available if requested by the Nutrition Department
- Erroneous information supplied by manufacturer yet to be confirmed in writing (*C non-protein energy 1321 kcal not 1311)

Storage

- Light protection recommended when in use - Red plastic covers provided
- Store in refrigerator
- If the bag has been out of the refrigerator **for more than 2 hours**- it must be discarded
- If it has been out of the refrigerator **for less than 2 hours before hanging**- it may be put back into the fridge
- Do not freeze

References

(1) Data on file from Kabi November 2017(2) Communication with Dietetics Department UHG

Therapeutic classification

Intravenous nutrition