Title	**Guidance for treatment of Electrolyte Deficiency - IV Drug Monograph**
Document Type	**Reference**
Issue no	***Clinical Governance Support Team Use***
Issue date	**October 2012**
Review date	**30th June 2015**
Distribution	**BGH Wards and Clinical Departments where IV medicines are prepared**
Prepared by	**BGH Pharmacists**
Developed by	**Palliative Care Guidelines committee and** **BGH Pharmacists**
Equality & Diversity Impact Assessed	
Approved By	**Director of Pharmacy**

Guidance for treatment of Electrolyte Deficiency

- **If patient is at risk of refeeding syndrome dietetic advice on monitoring may be needed.**
- **This advice does not apply to ITU patients**
- **Seek advice from GI, renal, ITU, dietetic team when appropriate**

Potassium

- **Consider cause (including medications) and history of hypokalaemia (acute or chronic?)**
- Measure as part of a bundle - calcium, magnesium, potassium and phosphate.
- Consider ECG if patient on cardioactive medication or presenting with palpitations.
- ECG necessary in K^+ < 3.0 (acute hypokalaemia)
- Complex patients need senior discussion - if considering replacing with potassium above 40mmol/L contact consultant on call/HAN team or Dr O'Donnell (daytime).

K^+ > 3.0mmol/L< 3.5mmol/L – If treating, use **oral** route

Sando K 1 tablet three times daily (36mmol K^+ /24 hours) or Kay-Cee-L syrup15mls three times daily (45mmol K^+ /24 hours).

K^+ 2.6-3.0mmol/L– either oral or IV depending on clinical assessment. Remember ECG if acute change.

Oral route - Sando K 1 tablet three times daily (36mmol K^+ /24 hours) or 2 tablets twice daily (48mmol/24 hours) or
Kay- Cee-L syrup 15mls three times daily (45mmol K^+ /24 hours).

IV route - 2 litres of either sodium chloride 0.9% or glucose 5% with 40mmol KCL(in each litre bag) over 24 hours.

K^+ < 2.5mmol/L

Always IV route - 2 litres of either sodium chloride 0.9% or glucose 5% (with 40mmol KCL in each litre bag) over 24 hours.
Check Us&Es 12 hourly

Phosphate

- Normal range is 0.8-1.4mmol/L
- Not to be prescribed without senior discussion
- Measure as part of a bundle - calcium, magnesium, potassium and phosphate.
- Replacement of phosphates in hypophosphataemia is via the IV route (the only indication for oral phosphates is in vitamin D-resistant hypophosphataemic osteomalacia)

Phosphates >0.5mmol/L <0.8mmol/L

If patient is well, continue to monitor and review

Phosphate <0.5mmol/L

- consider dietician advice
- what is the background/cause of hypophosphataemia?
- IV polyfusor phosphate 9mmol over 12 hours (rate of 7.5mls/hour) or 18mmol over 24 hours
- Continue to monitor calcium, phosphate, potassium, magnesium and other electrolytes before giving repeat infusion.

Magnesium

- Normal range (0.75-1.0mmol/L)
- Measure as part of a bundle - calcium, magnesium, potassium and phosphate.
- If hypomagnesaemia occurs with hypocalcaemia and hypokalaemia, magnesium replacement should be via IV route.

Magnesium >0.6mmol/L<0.75mmol/L	Magnesium >0.4mmol/L < 0.6mmol/L	Magnesium <0.4mmol/L
• Consider cause • Monitor	• Investigate cause of deficiency before treating if appropriate - Magnesium glycerophosphate tablets 8mmol three times daily. - Magnaspartate sachets 10mmol twice daily (patients with feeding tubes) Review after 48 hours.	-IV administration of 48mmol magnesium (=12g magnesium – 24mls of 50% magnesium sulphate diluted in 500ml sodium chloride 0.9% or glucose 5%) given over 24 hours* - check magnesium level next morning - infusion may be repeated daily for a total of 3 days (waiting for result of magnesium level before giving each further infusion)

*60mls of Magnesium Sulphate 20% diluted in 500ml sodium chloride 0.9% or glucose 5% given over 24 hours can be given if the 50% preparation is not available.

IV Calcium Gluconate

- Rarely necessary and only in symptomatic patients (except in arrhythmia and hyperkalaemia) where Calcium (corrected) < 1.8
- Consider cause of hypocalcaemia
- Measure as part of a bundle - calcium, magnesium, potassium and phosphate.
- Use corrected calcium value (normal range is 2.12-2.62mmol/L)
- Monitoring of ECG & plasma calcium required

Slow IV injection of 10-20ml calcium gluconate 10% (2.25-4.5mmol calcium)
- Can be repeated if required.
- Alternatively follow initial IV injection with an infusion of 100ml calcium gluconate 10% in 1 litre of either sodium chloride 0.9% or glucose 5% given at initial rate of 50ml/hour. Adjust according to response.

Preparation Date: Nov 2012
Expiry Date: 30th June 2015
Prepared by the Pharmacy Department, Borders General Hospital, NHS Borders.