

## Treatment of Hypophosphataemia in Adults – Sodium Glycerophosphate

There is a national shortage of phosphate polyfusor.

**As an alternative BSUH will be using unlicensed Sodium Glycerophosphate injection 21.6%**

(1 x 10mL vial contains 10mmol phosphate and 20mmol sodium).

**Definition of hypophosphataemia : Serum Phosphate <0.8mmol/L**

**Common causes of hypophosphataemia:** hyperparathyroidism secondary to renal phosphate wasting, loop diuretic therapy, diabetic ketoacidosis, ingestion of large quantities of phosphate-binding antacids containing magnesium and calcium, vitamin D deficiency, renal replacement therapies and excessive phosphate binders in chronic renal disease, malnutrition, refeeding syndrome.

**Symptoms of hypophosphataemia:** weakness, rhabdomyolysis, myopathy, acute respiratory failure, arrhythmias, cardiomyopathy, irritability, confusion, hallucinations, convulsions and coma.

**Management recommendations ;**

- Supplementation should commence within 48 hours of a level being checked
- Low levels beyond this time-frame should be re-checked before supplementation
- Isolated low levels should be re-checked, to establish validity and a trend, before supplementation is considered
- Phosphate replacement (with sodium glycerophosphate or with phosphate Sandoz tablets) should be prescribed with caution in patients with cardiac failure or peripheral/pulmonary oedema due to the sodium content
- Patients with pre-existing hypocalcaemia should have their calcium corrected before replacing phosphate as phosphate supplementation may exacerbate hypocalcaemia

When indicated, sodium glycerophosphate should be prescribed on the intravenous infusion prescription sheet (pages 14 & 15 of the adult drug chart) or Metavision.

Mild 0.6 – 0.8mmol/L		When to re-check levels?
No treatment required		Every 2-3 days (unless at risk of re-feeding syndrome then re-check daily)
Moderate 0.3 – 0.59mmol/L		Daily
Non-symptomatic	Phosphate Sandoz 1-2 effervescent tablets PO /NG three times daily (avoid giving at the same time as Calcium, Magnesium or Aluminium)	
Symptomatic / nil-by-mouth / poor oral absorption	Sodium glycerophosphate <b>20mmol</b> (2 x10mL) in 250mL glucose 5% or sodium chloride 0.9% over 12 hours via peripheral or central line	
Severe < 0.3mmol/L		Daily
Normal renal function and ≥ 40kg	Sodium glycerophosphate <b>40mmol</b> (4 x 10mL) in 500mL glucose 5% or sodium chloride 0.9% over 24 hours via peripheral or central line	
Impaired renal function or < 40kg	Sodium glycerophosphate <b>20mmol</b> (2 x10mL) in 250mL glucose 5% or sodium chloride 0.9% over 12 hours via peripheral or central line	

If administered via a **central venous access device**, lower infusion volumes may be used. See the National Injectable Medicines Guide for details. Click [here](#) to access

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Approved by:- Medicines Governance Group, June 2020

Review date: June 2022

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### Monitoring requirements

- Renal function daily
- Serum phosphate (allow at least 6 hours post infusion before re-checking). If phosphate level does not reach the reference range after the recommended replacement dose has been given, consecutive day course of treatment may be required
- Calcium and magnesium levels should be monitored every 12-24 hours during IV phosphate administration

### Side effects of IV sodium glycerophosphate phosphate therapy

Hypernatraemia (each 10mL vial contains 20mmol sodium), hypotension, hypocalcaemia, dehydration and metastatic calcification

### Side effects of PO Phosphate Sandoz therapy

(each tablet contains 16.1mmol phosphate, 20.1mmol sodium and 3.1mmol potassium)

- Diarrhoea may necessitate a reduction in dose
- Give in at least 120 mL of water to reduce risk of diarrhoea

### References:

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