REFEEDING SYNDROME GUIDELINE FOR ADULTS

Brighton and Sussex University Hospitals NHS Trust

What is Refeeding Syndrome?

Refeeding is potentially a fatal condition defined by severe electrolyte and fluid shifts as a result of a rapid reintroduction of nutrition after a period of inadequate nutritional intake. The route of nutrition does not affect the risk of refeeding , therefore oral, enteral and parenteral nutrition can precipitate refeeding in severely starved patients. Risk can be categorised as; at risk, high risk or severe risk.

What are the clinical features?

- Hypokalaemia
- Hypomagnesaemia
- Hypophosphataemia
- Encephalopathy (Wernicke – Korsakoff)
- Hyperglycaemia
- Cardiac arrhythmias
- Fluid imbalances
- Pulmonary oedema
- Cardiac failure

Management of a patient at risk of refeeding:

All Patients

- Monitor U&E, Mg, Ca and PO_4 prior to feeding and daily until stable.
- Commence correction of electrolyte deficits prior to feeding if possible, peripheral replacement may be suitable (see overleaf). You do not need to delay feeding as long as correction of deficits has started.
- Monitor blood glucose QDS until established on full feeding regimen (the dietitian will advise when to discontinue monitoring)
- Monitor fluid balance closely and keep a 24 hour record chart

Catagorising Refeeding Risk

Completion of the MUST tool, food history charts and a weight history will help with this assessment

Patients who should be considered **at risk** of refeeding

- Little or no nutritional intake for more than 5 days

Patients who should be considered **at high risk** of refeeding
One or more of the following:

- Little or no nutritional intake for more than 10 days
- BMI < 16
- Unintentional weight loss of more than 15% within the previous 3-6 months.
- Low K, Mg, PO4 prior to feeding

Two or more of the following:

- Little or no nutritional intake for more than 5 days
- BMI < 18.5
- Unintentional weight loss of more than 10% within the previous 3-6 months.
- History of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics

Patients who should be considered **at severe risk** of refeeding

- BMI <14
- Little or no intake for more than 15 days

Nutritional Support

All initiation of feeding should be slow and cautious whether oral, enteral or parenteral.
Refer all patients to the dietitian RSCH ext 4290, PRH ext 8313

Parenteral nutrition

PN is never started out of hours with the exception of patients in critical care.

Enteral nutrition

The following regimen can be initiated if out of hours.

- Refer to the NG care bundle and to the dietitians 'Out of Hours' enteral regimes available on the wards
- In all enterally fed patients continue with the same regimen daily until dietetic assessment
- If a patient is on a fluid restriction ensure the total volume of the feed and flushes administered does not exceed the restriction

Oral nutrition

- All patients should be allowed to continue eating and drinking as they have done previously just prior to admission if it is considered to be safe. If there are any concerns please consider a SALT assessment
- Avoid supplement drinks as these may precipitate re-feeding due to calorie load (unless prescribed by a dietitian).
- In patients at **high and severe risk**, limit all oral intake during initial 24 hours of refeeding
- Accurately record all oral intake on fluid balance sheet and food record chart

Vitamin supplementation for patients at high or severe risk

Vitamins should be started preferably on the day that feeding is due to be reintroduced and at least 30 minutes prior to any nutritional support. (Alcohol withdrawal patients with suspected Wernickes may require higher doses of Pabrinex. ITU may also use higher doses)

Intravenous

- Pabrinex I+II once daily for 3 days OR

Oral

- Thiamine 100mg BD for 10 days,
- Vitamin B Co Strong 1 TDS for 10 days
- Forceval capsule 1 OD for 10 days OR

Enteral

- Thiamine 100mg BD for 10 days (dispersed in 20mls water in a 60ml syringe)
- Forceval soluble 1 OD for 10 days, dispersed in 20ml water in a 60ml syringe) or Dalivit 0.6ml OD for 10 days

(Oral or enteral supplementation is not necessary after IV Pabrinex)

ELECTROLYTES IN REFEEDING SYNDROME

- Electrolyte levels are likely to drop when feeding is reintroduced as the electrolytes move from extracellular to intracellular compartments.
- Ensure you take into account all fluids given (TPN, oral intake, electrolyte supplementation and IV drugs) when assessing a patients fluid and electrolyte requirements.
- The oral route can be used if available and appropriate, though be aware oral absorption will be low and erratic and might not be suitable for more urgent supplementation and IV supplementation will be more suitable if the pre-feeding levels are significantly low or there is a significant drop once feeding is started
- Feeding does not need to be withheld until electrolytes are corrected
- Supplementation should be started prior to feeding and continued whilst the feeding depending on the access
- All the electrolyte doses below can be given either peripherally or centrally
- Consider critical care referral if severe risk of re-feeding syndrome or unable to maintain electrolytes with peripheral regimes.

Check baseline U&Es, PO4, adj Ca & adj Mg (combined biochemistry code 'TPN') and LFTs prior to feeding.
Monitor daily until patient is stable

How to supplement electrolytes?

Please note that these levels of electrolyte replacement may not be suitable for cardiac, renal and critical care patients

Electrolyte	Route	Dose	Comments
Potassium	IV	• 20-40 mmol per litre over a minimum of 4 hours • 40mmol in 500ml is possible via a **central line** over a minimum of 4 hours if fluid over loaded	• Always use premixed manufacturers bags • Rate >20 mmol/hr need continuous ECG monitoring • Check for hypomagnesaemia
	PO	• Sando K 2 tabs TDS	• Each tablet contains: 12mmol K
Phosphate	IV	• See Phosphate Polyfusor prescription https://nww.bsuh.nhs.uk/search/?q=phosphate	• 500ml of a Phosphate Polyfusor contains: • 50mmol phosphate, 81mmol sodium, 9.5mmol potassium
	PO	• Phosphate Sandoz 2 tabs TDS, review after 2/7	• Each tablet contains: PO4 16.1mmol, Na 20.4mmol, K 3.1mmol • May cause diarrhoea
Magnesium	IV	• 8mmol magnesium sulphate 50% (4ml) in 100ml NaCl 0.9% over 1 hour. • If severe give 20mmol magnesium sulphate 50% (10ml) in a minimum of 250ml NaCl 0.9% over 4 hours (longer slower infusions are more effective	• Each 10ml vial contains 20mmol magnesium (ie. 2mmol/ml) • Mg sulphate 50% must always be diluted, mix well to avoid 'layering' • Caution in renal patients • Avoid in patients with heart block and myocardial damage
	PO	• Mag glycerophosphate 8mmol TDS review after 2/7 • Second line: Mg aspartate 1 sachet (10mmol) BD review after 2/7	• Each tablet contains 4mmol Mg • May cause severe diarrhoea
Calcium	IV	• Check Mg and replace first if deficient • Give 10ml calcium gluconate 10% over of 5minutes	• Ca 10% (1g in 10ml) contains 2.25mmol Ca • Can be used undiluted • ECG monitoring required during and after injection
Calcium	PO	• Calcichew tablets 1 TDS	• Each tablet contain 12.5mmol Ca • Caution may act as a PO_4 binder in renal patients

Reference: NICE Nutrition Support in Adults, February 2006, SPS and Medusa
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