Refeeding Syndrome Guideline

Definition:

Refeeding Syndrome (RFS) encompasses the clinical complications that occur as a result of fluid and electrolyte shifts during nutrition repletion of malnourished patients.

During starvation, intracellular electrolytes become depleted from fat and protein catabolism. Upon refeeding insulin secretion stimulates intracellular glucose and electrolyte uptake leading to:

- Derangement of serum electrolytes (PO4, Mg, K)

- Vitamin deficiencies (Thiamine, B12, folate)

- Sodium and fluid retention

RFS can be life-threatening leading to complications such as cardiac failure, arrhythmia, delirium and seizures.

Assessment:

The most important point is to recognise patients who are potentially at risk.

1. Patients at risk include:

- Marasmus: Severe protein energy malnutrition and wasting, below 60% expected weight for age.
- Kwashiorkor: Severe malnutrition characterised by protein deficiency, oedema and distended abdomen.
- 10% weight loss or < 80% ideal body weight
- 5 days IV fluids only or poor intake for >7 days
- Chronic diseases causing under-nutrition e.g. cancer and Inflammatory Bowel Disease
- Anorexia nervosa
- Hypoalbuminemia

2. Intake history

- Weight history

- Calculation of Estimated Energy and Protein requirements

3. Baseline bloods – Standard baseline bloods UEC, CMP, LFT's, Triglyceride levels and VBG as well as nutritional assessment bloods: Zn, B12, folate, iron studies.

4. Medical Assessment – cardiovascular stability, neurological assessment

5. Correct any electrolyte abnormalities prior to PN commencement – aim for mid- normal range (see RCH guidelines for IV dosing for potassium, phosphate and magnesium)

6. Prescribe supplements prior to feeding

Monitoring and Treatment:

1. Commence PN at approximately 50% of estimated energy requirement (more important to be cautious with glucose intake than total energy intake, aim for 40% energy as glucose intake). Grade up over 3-5 days.

2. Monitor UEC, CMP, BSL 6hrly once PN commenced for 24-48hrs. If re-feeding occurs then stop the PN (switch to IV fluids containing 5% dextrose) + correct electrolyte abnormalities rechecking bloods to confirm correction before re-starting PN.

- Most frequently PO4 falls first; please be aware of patients with borderline low PO4 levels pre commencement of nutrition.

3. Monitor for bradycardia with immediate medical review.

4. Strict fluid balance

5. Daily weight

6. Consider Thiamine supplementation prior to IV/enteral nutrition commencement at: 1-2mg/kg to a maximum of 100mg/day.

Continue for 5 days (IV or oral).

7. Consider multivitamin/mineral supplement (for patients on enteral/oral nutrition only): e.g. Pentavite with iron liquid (< 2yrs) or Blackmores Slow Release MVM for first 5 days or until 100% RDI met.

References:

- Afzal NA, Addai S et al. Refeeding syndrome with enteral nutrition in children: a case report, literature review and clinical guidelines. Clinical Nutrition (2002) 21 (6): 515-520.
- Refeeding Syndrome: Prevention and Management –Sydney Children's Hospital Practice, Guideline June 2013
- Crook MA. (2014). Refeeding Syndrome: Problems with Definition and Management. Nutrition (30) 1448-1455
- Royal Brisbane and Women's Hospital. Refeeding Syndrome Identification and Management Guideline January 2015
- RCH Pharmacy
- National Institute for Health and Clinical Excellence. Clinical Guideline 32: Nutrition Support in Adults. February 2006. www.nice.org.uk

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