Guideline
MNHHS-Wide

Effective from: July 2015
Review due by: July 2018

Refeeding Syndrome Identification and Management in Adults

Background

Refeeding syndrome is a cluster of physiological manifestations commonly observed in severely malnourished and cachectic patients, resulting from aggressive nutrition support following a period of adaptation to prolonged starvation or malnutrition[1]. The hallmark features are fluid and electrolyte imbalances including hypophosphataemia, hypokalaemia and hypomagnesaemia, abnormalities of glucose metabolism, vitamin deficiencies including thiamine and trace element deficiencies [1-3]. Failure to identify refeeding risk and appropriately manage reintroduction of nutrition can result in a range of complications affecting multiple organ systems including cardiac, respiratory, neurologic and haematologic [1, 4].

Purpose and intent

To describe refeeding syndrome and its management in the adult population.

Outcome

Patients at risk of refeeding syndrome are identified and receive safe, appropriate administration of nutrition support to prevent complications based on the best available evidence.

Scope and target audience

This guideline applies to all Metro North Hospital and Health Service (MNHHS) clinical staff for use for adult patients.

Principles

These guidelines are to be used in consultation with the multidisciplinary team and exercising clinical judgement.

Nutrition Management Guidelines for Refeeding Syndrome

Recognise at risk patients [5]	**Patient has one or more of the following:** • BMI less than 16 kg/m^2 • Unintentional weight loss greater than 15% within the last 3-6 months • Little or no nutritional intake for more than 10 days • Low levels of potassium, phosphate or magnesium prior to feeding attributable to malnutrition	**Patient has two or more of the following:** • BMI less than 18.5kg/m^2 • Unintentional weight loss greater than 10% within the last 3-6 months • Little or no nutritional intake for more than 5 days • A history of alcohol abuse

Check electrolytes especially phosphate, potassium and magnesium	• Check and correct electrolytes. If bloods unavailable, start feeding and supplement electrolytes as required alongside feeding (3, 5) • Recheck 6-8 hours after commencing nutrition support and then daily until stable **Staff Responsible:** Doctors
Supplement thiamine	• For non-alcoholics, supplement with a stat dose of 300 mg IV/IM thiamine at least 30 minutes before feeding and then (6) 200-300 mg IV or oral thiamine for 3 days (5, 7)
	• For alcoholics with suspected Wernicke's encephalopathy: 300mg IM/IV t.d.s. for 3-5 days, and then 100mg t.d.s. oral for >1 month • For alcoholics at risk of developing Wernicke's encephalopathy: 100mg IM/IV t.d.s. for 3 days, and then 100mg t.d.s. oral for >1 month **These thiamine dosing recommendations for alcoholics are based on recent guidelines (6, 8, 9) in conjunction with local practice.** **Staff Responsible:** Doctors
Multivitamin supplement	• Patients should receive a multivitamin supplement daily for the first 10 days of refeeding or at least until intake of all RDIs is achieved through goal nutrition support or adequate oral intake (2, 3, 5) • Refer to pharmacy for advice on suitable multivitamin preparations for oral, enteral or parenteral routes **Staff Responsible:** Doctors, Pharmacists
Supplement phosphate, potassium and magnesium as required	• Replace as required as per the *Queensland Health Prescribing Intravenous Fluids and Electrolytes for Adult Patients (4th Edition),* also found in all QLD Health bed charts • Hypophosphataemia (less than 0.7mmol/L, severe less than 0.4 mmol/L) • Hypokalaemia (mild 3.1-3.5mmol/L, moderate 2.5-3.0mmol/L, severe less than 2.5mmol/L) • Hypomagnesaemia (less than 0.7mmol/L, severe less than 0.4mmol/L) **Staff Responsible:** Doctors, Pharmacists
Commence feeding slowly	• For RBWH inpatients with eating disorders follow: *The guidelines on admission and inpatient treatment for people with eating disorders at the Royal Brisbane and Women's Hospital* Or for inpatients with eating disorders at all other hospitals in MNHHS: *A Guide to Admission and Inpatient Treatment for People with Eating Disorders in Queensland* • For all other patients, commence nutrition support at no more than 50% of estimated goal energy and protein requirements (5) • See following resource for guidance on *estimating energy, protein and fluid requirements for adult clinical conditions:* • Increase nutrition support over subsequent days to meet goal requirements if clinical and biochemical monitoring reveals no refeeding problems (5).

	Staff Responsible: Dietitians
Sodium and Fluid	• Monitor fluid balance. Avoid excess sodium and fluid to prevent fluid overload (1). **Staff Responsible:** Doctors, Nurses, Dietitians
Monitor	• Biochemistry including phosphate, potassium, magnesium, sodium, LFTs and glucose. • Daily observations including heart rate, blood pressure and temperature. • Monitor fluid status and regular weights. **Staff Responsible:** Doctors, Nurses, Dietitians

References and benchmarking

1. Boateng AA, Sriram K, Meguid MM, Crook M. Refeeding syndrome: treatment considerations based on collective analysis of literature case reports. Nutrition. 2010;26(2):156-67.
2. Marinella MA. The refeeding syndrome and hypophosphatemia. Nutrition Reviews. 2003;61(9):320-3.
3. Mehanna HM, Moledina J, Travis J. Refeeding syndrome: what it is, and how to prevent and treat it. BMJ. 2008;336(7659):1495-8.
4. Rio A, Whelan K, Goff L, Reidlinger DP, Smeeton N. Occurrence of refeeding syndrome in adults started on artificial nutrition support: prospective cohort study. BMJ Open. 2013;3(1).
5. National Institute for Health and Clinical Excellence. Nutrition support in adults. Oral nutrition support, enteral tube feeding and parenteral nutrition. 2006; Available from: www.nice.org.uk/page.aspx?o=cg032.
6. National Institute for Health and Clinical Excellence. Alcohol-use disorders: Diagnosis and clinical management of alcohol-related physical complications. 2006; Available from: http://www.nice.org.uk/guidance/cg100.
7. Manzanares W, Hardy G. Thiamine supplementation in the critically ill. Current Opinion in Clinical Nutrition and Metabolic Care. 2011;14(6):610-7.
8. Galvin R, Brathen G, Ivashynka A, Hillbom M, Tanasescu R, Leone MA. EFNS guidelines for diagnosis, therapy and prevention of Wernicke encephalopathy. European Journal of Neurology. 2010;17(12):1408-18.
9. Lingford-Hughes AR, Welch S, Peters L, Nutt DJ. BAP updated guidelines: evidence-based guidelines for the pharmacological management of substance abuse, harmful use, addiction and comorbidity: recommendations from BAP. Journal of Psychopharmacology. 2012;26(7):899-952.

Related documents

- Estimating energy, protein and fluid requirements for adult clinical conditions
- A Guide to Admission and Inpatient Treatment for People with Eating Disorders in Queensland
- The guidelines on admission and inpatient treatment for people with eating disorders at the Royal Brisbane and Women's Hospital
- Queensland Health Prescribing Intravenous Fluids and Electrolytes for Adult Patients (4th Edition)

Relevant standards

National Standard 1 – Governance: 1.1.1, 1.7.1, 1.7.2, 1.8.1, 1.8.2,

National Standard 4 – Medication Safety: 4.1.1, 4.1.2, 4.14.1

National Standard 6 – Clinical Handover: 6.2.1

National Standard 9 – Recognising and Responding to Clinical Deterioration: 9.1.2

EQuIPNational Standard 12 – Provision of Care: 12.3.1, 12.5.1, 12.6.1, 12.6.2, 12.6.3, 12.7.1

Document history

Custodian	Director – Nutrition and Dietetics, Chair Metro North Nutrition and Dietetics Community of Practice
Risk rating	Low
Compliance evaluation and audit	• Report and review any patient incident related to the subject matter via PRIME with escalation as indicated to the relevant governance committee. • Compliance with guidelines to be audited by the sites and the results fed back to local key stakeholders.
Replaces document/s	09407/Guid: Refeeding Syndrome Identification and Management
Previous issue date/s	N/A
Key stakeholders	• MNHHS Facility Nutrition and Dietetics Departments • MNHHS Facility Senior Dietitians • MNHHS Facility Directors of Pharmacy • MNHHS Facility Directors of Internal Medicine Services • MNHHS Facility Nursing Directors Internal Medicine Services • MNHHS Facility Directors of Intensive Care • MNHHS Facility Directors of Critical Care • MNHHS Facility Directors Alcohol and Drug Service • Director of Eating Disorders Outreach Service • Dietitians, Eating Disorders Outreach Service • MNHHS Facility Safety and Quality Units • Medication Advisory Committee
Marketing strategy	Marketing through regular emails to all line managers of new and updated policies and procedures. Also a notification through Safety and Quality Units to key stakeholders
Key words	Refeeding; syndrome; malnutrition; starvation; alcoholism; eating; disorder; thiamine; nutrition; dietitian; hypophosphataemia; hypokalaemia; hypomagnesaemia; Metro; North; MNHHS

Authorisation

Signature Date

Executive Director Medical Services – Metro North Hospital and Health Service.

The signed version is retained by the relevant Facility Safety and Quality area, Metro North Hospital and Health Service.