

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Refeeding syndrome and vitamin supplementation

Patients who have been fasting for five days or more and are commenced on oral, enteral or parental feeding may experience shifts in fluids and electrolytes, resulting in hypophosphatemia, hypokalaemia, hypomagnesaemia and thiamine deficiency. With the introduction of carbohydrate, insulin is released into the blood stream and there is a shift from fat to carbohydrate metabolism. This creates a sudden intracellular demand for phosphate, potassium and magnesium.

Risk factors for refeeding syndrome include negligible food intake for more than five days, low BMI, chronic malnourishment (eg. due to alcoholism or dysphagia) and low levels of potassium, phosphate or magnesium before feeding. Elderly patients may be at increased risk due to the presence of comorbidities and decreased physiological reserve.

Recommendations for avoidance and treatment of refeeding syndrome in adults based on best available evidence were published by The National Institute for Health and Clinical Excellence (NICE) in the United Kingdom in 2006. These guidelines state that correcting electrolyte and fluid imbalances before feeding commences is not necessary and that this should be done during feeding (with initial nutritional support being at a lower rate in at risk individuals). The hospital dietetics team should always be involved in the management of these patients.

The NICE guidelines recommend supplementation of the following vitamins immediately before and during the first ten days of feeding.

Thiamine

Thiamine is required in carbohydrate metabolism and glucose utilization, and deficiency can have serious clinical consequences. The suggested oral dose in this context is 200 to 300 mg daily. It is available as 100 mg oral tablets. If oral administration is not possible, it can be administered via IM injection or by slow IV injection over at least ten minutes. This should be given at least 30 minutes before feeding and continued for at least three days.

Multivitamins

Orally, Vitaminorum® 1 -2 tablets a day should be prescribed, depending on nutritional status. Alternatively Supradyn® Effervescent tablets can be given orally or through fine bore feed tubes due to its solubility.

In Australia Cernevit® is the most commonly prescribed IV multivitamin preparation, containing water and fat soluble vitamins. The dose is one vial daily (reconstituted with 5mL of an appropriate diluent). It can be administered via infusion or by slow IV injection over at least ten minutes. It is commonly added to TPN solutions.

The NICE guidelines also recommend supplementation with B Group Vitamins, however this is not routinely undertaken in clinical practice.

Oral, enteral or intravenous supplementation of potassium, phosphate and magnesium is also recommended (unless pre-feeding plasma levels are elevated), with monitoring of serum electrolyte levels at appropriate intervals.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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