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Refeeding hypophosphataemia after enteral nutrition in a Malaysian intensive care unit: risk factors and outcome

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Abstract

Background and Objectives: Refeeding hypophosphataemia (RH) is characterized by an acute electrolyte derangement following nutrition therapy. Complications associated include heart failure, respiratory failure, paraesthesia, seizure and death. We aim to assess its incidence, risk factors, and outcome in our local intensive care unit (ICU). **Methods and Study Design:** A prospective observational cohort study was conducted at the mixed medical-surgical of a tertiary ICU in Kuantan, Malaysia. The study was registered under the National Medical Research Register (NMRR-14-803-19813) and has received ethical approval. Inclusion criteria include adult admission longer than 48 hours who were started on enteral feeding. Chronic renal failure patients and those receiving dialysis were excluded. RH was defined as plasma phosphate less than 0.65 mmol/L and a drop of more than 0.16 mmol/L following feeding. **Results:** A total of 109 patients were recruited, of which 44 (42.6%) had RH. Patients with RH had higher SOFA score compared to those without ($p=0.04$). There were no differences in the APACHE II and NUTRIC scores. Serum albumin was lower in those with RH ($p=0.04$). After refeeding, patients with RH had lower serum phosphate, magnesium and albumin, and higher supplementation of phosphate, potassium and calcium. There were no differences in mortality, length of hospital or ICU stay. **Conclusions:** Refeeding hypophosphataemia occurs in almost half of ICU admission. Risk factors for refeeding include high organ failure score and low albumin. Refeeding was associated with imbalances in phosphate, magnesium, potassium and calcium. Future larger study may further investigate these risk factors and long-term outcomes.

Keywords

Author Keywords: [refeeding syndrome](#); [refeeding hypophosphataemia](#); [organ failure](#); [intensive care unit](#); [risk factors](#)**KeyWords Plus:** [PARENTERAL-NUTRITION](#); [MORTALITY](#); [SUPPORT](#); [ADULT](#)

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79 of 155

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