dose>0.3mcg/kg/min(OR=2.7,p=0.003),female sex(OR=1.9,p=0.046),and APACHE II score(OR=1.05,p=0.017)as independent predictors of EN intolerance
Conclusion: A NE dose>0.3mcg/kg/min emerged as an independent predictor of intolerance.Early identification of at-risk pts may help guide individualized nutritional strategies and improve tolerance
Disclosure of Interest: None declared

O021

PERSONALISED NUTRITION DELIVERY DURING GLYCAEMIC CONTROL IN INTENSIVE CARE

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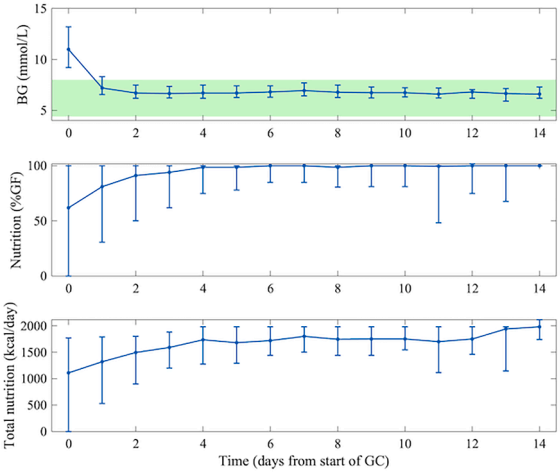
Rationale: Safe, effective glycaemic control (GC) in critically ill patients is directly linked to nutrition. Variable nutrition delivery protocols interact with patient-specific, variability in nutrition tolerance and insulin sensitivity to reduce GC safety and performance, whereas personalised nutrition delivery in conjunction with insulin delivery could enable safer, more effective GC and optimise patient outcomes.
Methods: The Stochastic TARgeted (STAR) model-based GC framework is the first protocol modulating both insulin and nutrition to control glycaemia. Insulin-nutrition interventions are based on identified patient-specific insulin sensitivity, accounting for the interplay between glycaemia, nutrition, and patient variability. GC commences after 2 consecutive blood glucose (BG) measurements over 145 mg/dL. STAR was implemented as the standard of care in the Christchurch Hospital Intensive Care Unit, New Zealand in 2010. This study analyses nutrition delivery and GC metrics for 5.5 years of data from April 2019 to December 2024.
Results: N= 734 patients and 1009 episodes of > 10 hours GC and being fed are analysed in this study. GC was safe and effective, with 72.4% of BG in normoglycaemic range (80-145 mg/dL) and only 2 (0.2%) events of severe hypoglycaemia (BG < 40 mg/dL), with 1 while receiving insulin. Nutrition delivery had high median [IQR] rates (93.7 [54.1– 100.0] % goal feed), corresponding to 1584 [960 – 1920] kcal/day at cohort level. Nutrition delivery increases over time with the lowest rates in the first 12-24 hours and most acute phase.
Image:



Conclusion: STAR provided safe, effective GC modulating insulin and nutrition in concert, achieving high time in range and extremely low incidence of severe hypoglycaemia. The large variability in nutrition rates achieved reflect high personalisation in nutrition management. These outcomes support STAR's ability to provide personalised nutrition therapy as part of GC.
Disclosure of Interest: None declared

O022

THE EFFECT OF PROTEIN DOSE ON MUSCLE PROTEIN SYNTHESIS IN CRITICAL ILLNESS

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Rationale: Muscle wasting during critical illness is partly attributed to the reduced capacity of dietary protein to stimulate muscle protein synthesis (MPS). It is unknown whether this anabolic resistance may be compensated by increasing protein dose. We compared rates of MPS following enteral administration of 40g versus 20g protein in critically ill patients.
Methods: Mechanically ventilated patients were randomised to 40g or 20g whey protein isolate delivered duodenally over 60 minutes. Stable isotope methodology with a primed continuous intravenous L-[ring-$^{13}C_6$] phenylalanine and L-[ring-3,5-$^{2}H_2$]-tyrosine infusion combined with repeated arterial blood and skeletal muscle biopsy sampling over a 2h fasting and 6h post-prandial period were used to quantify plasma amino acid responses and fractional MPS rates. Data are presented as mean±SD and total post-prandial area under the curve ($AUC_{0\text{-}360}$) and analysed with ANCOVA adjusted for baseline or paired t-tests ($P<0.05$).
Results: Twenty patients ($n=10$ per group: 40g: 90% male, 49±21y and 20g: 80% male, 51±13y) were studied. Post-prandial plasma leucine and tyrosine availability ($AUC_{0\text{-}360}$) were higher following administration of 40g than 20g protein (leucine: 263.1±87.0 vs 193.6±54.2 uM, $P=0.005$; tyrosine: 91.9±23.6 vs 62.9±16.9 uM, $P=0.006$). Fasting MPS rates did not differ between groups (40g: 0.020±0.012 vs 20g: 0.025±0.023 %/h; $P=0.558$). For the primary outcome, post-prandial fractional MPS rates did not differ between groups (40g: 0.030±0.012 vs 20g: 0.025±0.010 %/h, adjusted mean difference 0.007%/h (95% CI -0.003, 0.016); $P=0.152$). MPS increased from fasting to post-prandial periods in the 40g group only (mean difference: 0.010%/h (95% CI 0.004, 0.016); $P=0.005$).
Conclusion: Enteral provision of a higher protein dose increases plasma amino acid availability, but does not further augment post-prandial rates of MPS in critically ill patients.
Disclosure of Interest: None declared

O023

THE EFFICACY OF CALORIMETRY-BASED NUTRITIONAL SUPPORT VERSUS RECOMMENDED DIETARY INTAKE-BASED NUTRITIONAL SUPPORT IN THE SUCCESSFUL WEANING OF POST ICU CHRONICALLY VENTILATED PATIENTS: A DOUBLE-BLIND RANDOMIZED CONTROLLED TRIAL

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Rationale: Optimal nutrition care is crucial for successful weaning. Indirect calorimetry (IC) based nutritional plan may be preferable than predicted equations (PE) for weaning from prolong Mechanical ventilation (PMV) (>21 days).