

Category : **Nutritional support**

**A156 - Comparative effects of intermittent vs continuous enteral feeding and time of day on glycaemic variability in critically ill patients.**

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### **Introduction:**

In critical illness, increased glycaemic variability is associated with greater mortality and morbidity [1] and the relationship with the mode and timing of enteral nutrition (EN) delivery are unknown [2]. We assessed the effect of intermittent vs continuous EN delivery and delivery time on glycaemic variability.

### **Methods:**

Preliminary data of an active parallel, single-centre, single-blinded, trial in non-diabetic ICU patients (age $\geq$ 18 y; receiving or eligible to receive nasogastric EN), who were randomised to 24h of isocaloric EN delivered intermittently (INT: 6-hourly bolus, T1=8:00h, T2=14:00h, T3=20:00h, T4=2:00h) or continuously (CONT) were analysed. Subcutaneous continuous glucose monitoring (DEXCOM G6) was used to assess glycaemic variability (standard deviation; SD, coefficient of variation; CV, and mean absolute glucose concentrations; MAG) and 6h postprandial blood glucose levels (area under curve; AUC) were calculated. Variables were compared between EN mode and over time. Data are expressed as mean $\pm$ SD.

### **Results:**

Groups were not different at baseline (INT vs CONT:  $n=11$  vs  $9$ ; age:  $49\pm 16$  vs  $55\pm 11$  y; BMI:  $31\pm 11$  vs  $32\pm 6$  kg/m<sup>2</sup>; APACHE II:  $19\pm 9$  vs  $16\pm 5$ ). Glycaemic variability over 24h (SD:  $1.3\pm 0.6$  vs  $1.0\pm 0.5$  mmol/L; CV:  $17.8\pm 10.5$  vs  $14.2\pm 3.9$  %; MAG:  $1.7\pm 0.8$  vs  $1.3\pm 0.3$  mmol/L) did not differ between INT and CONT, respectively (**Figure 1**; all  $P>0.05$ ). In INT, postprandial peak glucose levels were higher at T4 ( $10.7\pm 2.3$  mmol/L) than T1 ( $9.8\pm 2.2$  mmol/L,  $P=0.02$ ) and T2 ( $9.5\pm 2.6$  mmol/L,  $P=0.01$ ), while the postprandial rise in glucose did not differ between bolus times (all  $P>0.05$ ). Postprandial glucose AUC was higher in both T3 and T4 when compared to T1 and T2 (all  $P<0.05$ ).

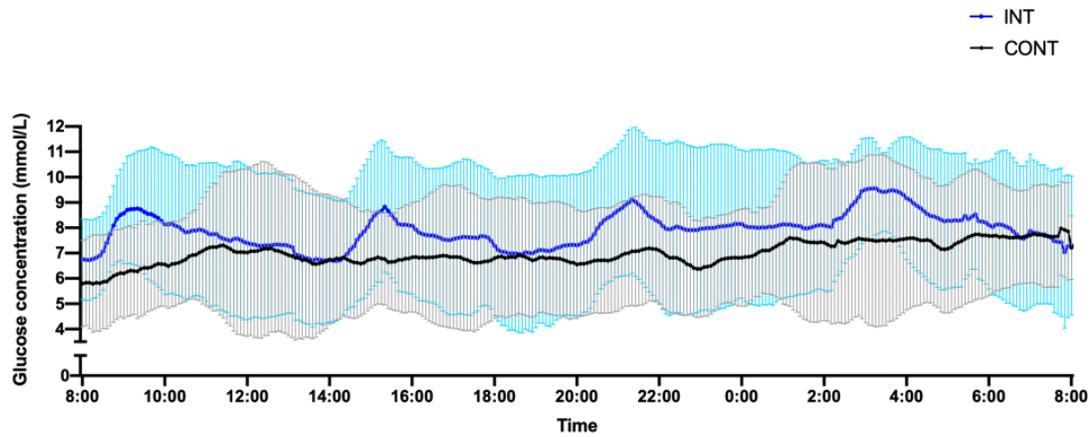
### **Conclusion:**

In critical illness, intermittent delivery of EN is likely not associated with increased glycaemic variability compared to continuous feeding and the glycaemic response to intermittent EN appears to be increased at night.

### **References:**

1. Eslami S *et al.* Intensive Care Med 37(4):583-93, 2011.
2. McNelly AS *et al.* Chest 158(1):183-94, 2020.

**Image :**



*Interstitial glucose concentrations during 24h of intermittent (INT) or continuous (CONT) isocaloric enteral nutrition in 20 critically ill patients.*