

5.7 Strategies to Optimize Delivery and Minimize Risk of Enteral Nutrition: Fasting

Question: Compared to standard fasting time prior to procedures, do shorter fasts result in better outcomes in the critically adult ICU patient?

Summary of evidence: This is a new topic in 2018. There was 1 level 2 study that compared the effect of continuing EN until 45 minutes prior to a tracheostomy procedure vs fasting for 6 hours prior to the procedure.

Mortality, Infections, LOS and Ventilator Days: When the two groups in this study were compared, shorter fasting had no effect.

Other: Shorter fasting time pre-operatively resulted in better caloric delivery in the 24h period before the procedure ($p=0.01$), but statistical significance was lost when caloric delivery was assessed in the 72h period before the procedure ($p=0.387$). Fasting preoperatively did not affect caloric delivery in the 24h and 72h periods post-operatively ($p=0.16$ and 0.22 , respectively)

Conclusions:

- 1) A shorter fasting time pre-operatively has no effect on mortality, LOS or ventilator days.
- 2) A shorter fasting time pre-operatively may be associated with better caloric delivery in the 24h period pre-operatively.

Level 1 study: if all of the following are fulfilled: concealed randomization, blinded outcome adjudication and an intention to treat analysis.

Level 2 study: if any one of the above characteristics are unfulfilled.

Table 1. Randomized Studies Evaluating Fasting Procedures in Enterally Fed Critically ill Patients

Study	Population	Methods (score)	Intervention	Mortality # (%)		p-value	Infections # (%)		p-value
				Short fast	Long fast		Short fast	Long fast	
1) Gonik 2016	Intubated mixed ICU patients N=24	C. Random: yes ITT: yes Blinded: single (17)	Continuous EN administered until approx.. 45 minutes prior to tracheotomy incision vs fasting at least 6h prior to procedure. Stomach suctioned prior to procedure in both groups.	1/12 (8)	3/12 (25)	0.59	Aspiration 0/12 New Pneumonia POD 1-5 0/12	Aspiration 0/12 New Pneumonia POD 1-5 1/12 (8)	>0.99 >0.99

C.Random: concealed randomization

± : mean ± standard deviation

NR: Not Reported

POD: Post-operation day

Study	Mechanical Ventilation		p-value	LOS		p-value	Nutritional Outcomes		p-value
	Short fast	Long fast		Short fast	Long fast		Short fast	Long fast	
1) Gonik 2016	NR		0.82	7 (2-10)	ICU 4 (3-11)	0.83	Calories delivered 24h pre-op day 1050 (825-1410) 429 (57-1125) Calories delivered 72h pre-op day 2782 (1481-4667) 2700 (842-4297) Calories delivered 24h post-op day 1295 (825-1905) 1045 (721-1230) Calories delivered 72h post-op day 4440 (3202.5-5635) 3693 (2358-4882.5) Length of fast, hours 14 (5-25) 22 (18-24)	0.01 0.387 0.16 0.22 <0.001	