

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

There were no new randomized controlled trials since the 2015 update and hence there are no changes to the following summary of evidence.

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)	0.01
							Calories delivered 72h pre-op day 2782 (1481-4667)	2700 (842-4297)	0.387
							Calories delivered 24h post-op day 1295 (825-1905)	1045 (721-1230)	0.16
							Calories delivered 72h post-op day 4440 (3202.5-5635)	3693 (2358-4882.5)	0.22
							Length of fast, hours 14 (5-25)	22 (18-24)	<0.001

References

Included Studies

1-Gonik N, Tassler A, Ow TJ, Smith RV, Shuaib S, Cohen HW, Sarta C, Schiff BA. Randomized Controlled Trial Assessing the Feasibility of Shortened Fasts in Intubated ICU Patients Undergoing Tracheotomy. *Otolaryngol Head Neck Surg.* 2016 Jan;154(1):87-93. doi: 10.1177/0194599815611859. Epub 2015 Oct 12. PubMed PMID: 26459247."