

EFFECT OF POST ICU ENTERAL NUTRITION ON 30-DAY READMISSION RATE

An Interim Analysis

Michele ApSimon MSc RD¹, Carrie Johnston MSc RD¹, Barb Winder RD¹, Cindy Steel MSc RD², David Armstrong MD FRCPC³

¹Hamilton Health Sciences, Hamilton, ON, Canada; ²Nestlé Health Sciences Canada; ³McMaster University, Hamilton, ON, Canada

BACKGROUND

- 60-80% of intensive care unit (ICU) survivors will suffer functional impairments lasting months to years¹ and 25-30% will be readmitted within 3 months².
- Significant challenges have been reported in meeting the increased demand for nutrition by oral intake alone in the post ICU period³.
- The impact of maintaining enteral nutrition (EN) post ICU has received little attention in the literature.

OBJECTIVES

- To assess the effect of maintaining EN upon ICU discharge on unplanned 30-day hospital readmission in survivors of critical illness.
- Assess the prevalence of maintaining EN post discharge from ICU.

METHODS

- Interim analysis of retrospective review of EN fed, mechanically ventilated patients in a medical-surgical ICU between December 2018 – February 2020.
- Inclusion criteria: EN ≥ 3 days in ICU, survived ICU, live within the hospital catchment geographical area.
- Exclusion criteria: Parenteral nutrition post ICU, palliative patients.
- Variables collected: EN days in ICU, prevalence of EN maintained post ICU discharge (yes/no), ICU length of stay (LOS), 30-day hospital readmission.

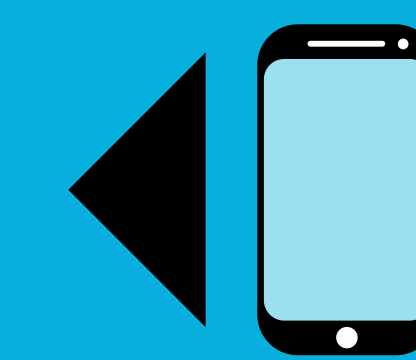
RESULTS

- 51 subjects.
- 21/51 (41%) maintained EN feeding after ICU discharge.
- Those who maintained EN after ICU discharge:
 - Had longer ICU LOS [19.6 (sd 14.5) vs 9.8 (sd 5.1)] (p<0.006)
 - Were fed longer in ICU [18.7 days (sd 14.4) vs 6.2 (sd 3.9)]
 - Had readmission rates of 4.8% (1/21) compared to those that did not maintain EN 26.7% (8/30) (p=0.064) Table 3.

CONCLUSION

- A longer ICU stay, suggesting greater burden of critical illness, was associated with maintenance of EN post ICU.
- Despite longer ICU stays, there was a trend for maintenance of EN post ICU to be associated with a lower 30-day unplanned hospital readmission rate.
- Analysis of the full data set will help further explore associations between maintenance of EN post ICU discharge and readmission.

Maintenance of enteral nutrition post ICU was associated with lower 30-day hospital readmission rates, despite longer ICU stays.



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Table 1. Interim Analysis - Descriptive Analysis, N=51

	All Subjects N=51	Maintained EN after ICU N=21	Did Not Maintain EN after ICU N=30
Characteristic	Mean [SD] Range or N (%)	Mean [SD] Range or N (%)	Mean [SD] Range or N (%)
Age, years	58.5 [14.5] 21-83	57.8 [17.6] 21-83	59.1 [12.3] 21-83
Sex			
Male	25 (49.0%)	9 (42.9%)	16 (53.3%)
Female	26 (51.0%)	12 (57.1%)	14 (46.7%)
Admission Diagnosis			
Respiratory	16 (31.4%)	4 (19.0%)	12 (40.0%)
Neurological	10 (19.6%)	4 (19.0%)	6 (20.0%)
Trauma	8 (15.7%)	5 (23.8%)	3 (10.0%)
Sepsis	7 (13.7%)	3 (14.3%)	4 (13.3%)
Gastrointestinal	4 (7.8%)	2 (9.5%)	2 (6.7%)
Cardiovascular	1 (2.0%)	1 (4.8%)	0 (0%)
Metabolic	1 (2.0%)	0 (0%)	1 (3.3%)
Other	3 (5.9%)	2 (9.5%)	1 (3.3%)
APACHE Score	21.1 [6.9] 8-36	21.4 [7.3] 12-34	20.9 [6.9] 8-36
ICU Length of Stay, days	13.8 [11.1] 3-47	19.6 [14.5] ^a 4-47	9.8 [5.1] ^a 3-26
EN Feeding Days in ICU	11.4 [11.4] 2-47	18.7 [14.4] 2-47	6.2 [3.9] 2-14

^a p=0.006

Table 2. Association between Readmission within 30 Days and EN Maintenance Post ICU Discharge, N=51

		EN Maintained Post ICU Discharge		
		Yes	No	Total
Readmitted within 30 days	Yes	1 (4.8%)	8 (26.7%)	9 (17.6%)
	No	20 (95.2%)	22 (73.3%)	42 (82.3%)
	Total	21 (100%)	30 (100%)	51 (100%)

Fisher's Exact Test p-value = 0.064

REFERENCES

1. Wischmeyer P. Crit Care 2017; 21(supp3): 316.
2. Walsh TS et al. BMJ Open 2016; 6:e12590.
3. Moisey L et al. Nutr Clin Pract 2021; 36(1): 201-212



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