10.3 Strategies to optimize Parenteral Nutrition: Mode of lipid delivery

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

Question: Does the mode of delivery of lipids affect outcomes in the critically ill adult patient?

Summary of evidence: There was 1 level 2 study reviewed. D'Angio et al 1992 compared infectious outcomes of lipids administered through a total nutrient admixture (TNA) for 24 hrs vs. lipids piggybacked into the PN solution for 12 hrs. This study did not report on mortality, LOS or ventilator days, only reported infections.

Mortality: Not reported.

Infections: No difference in infection rate between the group that received lipids in a TNA or piggybacked into PN.

LOS/Ventilator days: Not reported.

Conclusion: Lipids via TNA or via piggyback has no effect on infections in critically ill patients.

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 mode of lipid delivery in critically ill patients

Study	Population	Methods (score)	Intervention	Mortality # (%)		RR (CI)**	Infections # (%)‡		RR (CI)**
1) D'Angio 1992	Critically ill N=96	C.Random: not sure ITT: no Blinding: no (6)	Lipid administration Total Nutrient Admixture (24 hrs) vs piggyback (12 hrs)	NR	NR	NR	TNA 7/44 (16)	Piggyback 7/52 (13)	1.18 (0.45-3.11)

Table 1. Randomized studies evaluating mode of lipid delivery in critically ill patients (continued)

Study	LOS days		Ventilator days		Cost		Other	
1) D'Angio 1992	NR	NR	NR	NR	NR	NR	NR	NR

C.Random: concealed randomization
TNA: Total Nutrient Admixtures
± ( ) : mean ± Standard deviation (number)
‡ refers to the # of patients with infections unless specified
LOS: length of stay
ITT: intent to treat; NA: not available
** RR= relative risk, CI= Confidence intervals
± (-): median (range)
NR: not reported