



Baxter

FISH OIL-CONTAINING LIPID EMULSIONS IN ADULT PARENTERAL NUTRITION: A REVIEW OF THE EVIDENCE.

There is very little high quality evidence to indicate that fish oil-containing (FOC) intravenous lipid emulsions (IVLEs) have a more beneficial effect than other IVLEs on clinical outcomes in adult patients.

Abbasoglu O, et al. *JPEN* 2019;43(4):458-470

STUDY OVERVIEW

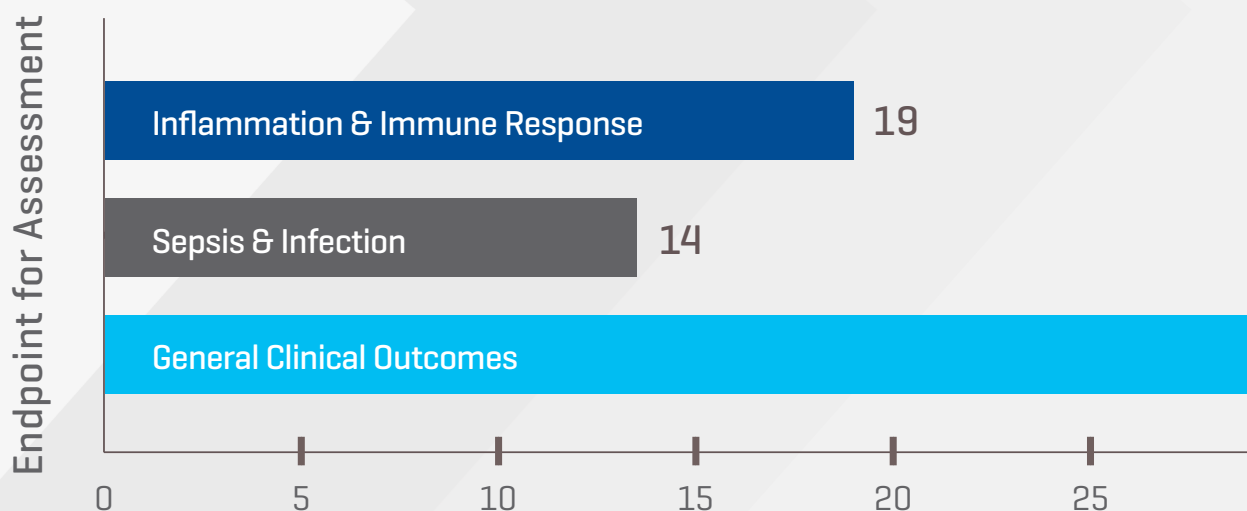
STUDY DESIGN

- A qualitative narrative review of randomized controlled clinical trials (RCTs) and other quality clinical studies

STUDY OBJECTIVE

- To present findings from recent randomized controlled clinical trials and other quality clinical studies:
 - Investigating the effects of administering intravenous fish oil alone or as part of a multi-lipid emulsion
 - Examining the quality of these studies in an objective, evidence-based manner

A total of 34 clinical studies were selected for inclusion in this evaluation



Articles eligible for review compared FOC-IVLEs with other IVLEs with respect to clinical outcomes, infection and inflammation, or immune markers

Risk of bias inherent in studies was assessed using the Cochrane Collaboration Assessment Bias Tool

- Tool considers multiple sources of bias including selection, performance, detection, attrition, reporting and other sources of bias²
- Studies classified as having low, high, unknown risk based on possible sources of bias

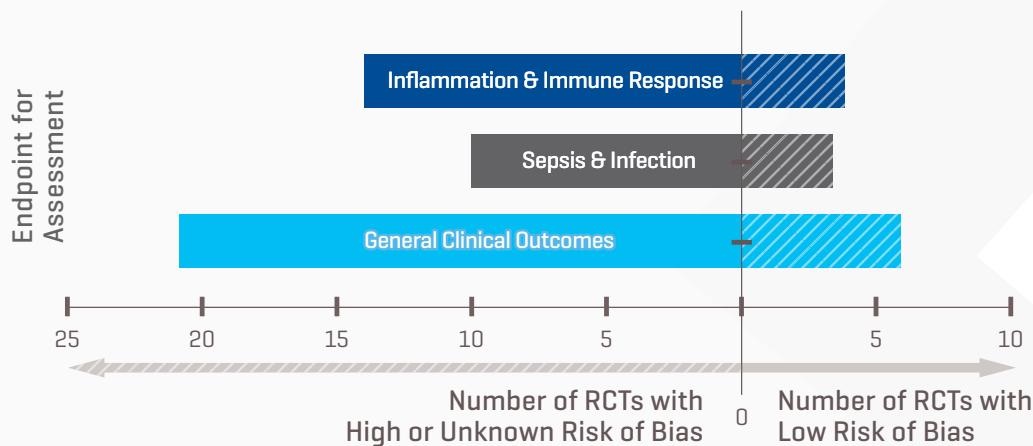
RESULTS

CONCLUSIONS BY ASSESSMENT ENDPOINT

Endpoint for Assessment	# Studies	Conclusions
Inflammation & Immune Response	19 Total 18 RCTs	Inconclusive evidence for a beneficial effect of parenteral nutrition (PN) with fish oil (FO) on inflammatory and immune markers compared with other IVLEs.
Sepsis & Infection	14 Total 14 RCTs	Comparative investigations fail to demonstrate any differences in rates of sepsis or infection after administration of PN with FO compared with other IVLEs.
General Clinical Outcomes	29 Total 27 RCTs	Current published evidence suggests there are no significant differences in length of hospital stay in Intensive Care Unit (ICU), duration of mechanical ventilation or mortality after administration of PN with FO compared with other IVLEs.

ASSESSMENT OF STUDY QUALITY

76% of RCTs Assessed Had High/Unknown Risk of Bias



Most studies were underpowered, used inappropriate statistical methods, and lacked details on study protocols and methodology.

ADDITIONAL CONCLUSIONS BY CLINICAL OUTCOME

Mortality	15 studies [of total 18] reported no significant difference in patient mortality [†]
Length of Hospitalization	17 studies [of total 22] reported no significant differences between FOC IVLE and other lipid emulsions, placebo or control
Cardiac Surgery	In infusion of fish oil before cardiac surgery: <ul style="list-style-type: none"> • 2 studies reported no significant differences between treatment arms in general postsurgical outcomes

[†] Comparison of patients receiving FOC-IVLEs vs other IVLEs or placebo

[±] Comparison of patients receiving FOC-IVLEs vs Olive Oil, Soybean Oil, Medium Chain Triglycerides/ Long Chain Triglycerides (MCT/LCT), enteral nutrition, parenteral nutrition or placebo

There is very little high quality evidence to indicate that fish oil-containing (FOC) intravenous lipid emulsions (IVLEs) have a more beneficial effect than other IVLEs on clinical outcomes in adult patients.



Open Access Link:

<https://aspenjournals.onlinelibrary.wiley.com/doi/10.1177/0148607117721907>

REFERENCES

1. Abbasoglu O, Hardy G, Manzanares W, Pontes-Arruda A [2017] Fish Oil-Containing Lipid Emulsions in Adult Parenteral Nutrition: A Review of the Evidence. *JPEN*. doi:10.1177/0148607117721907.
2. <http://methods.cochrane.org/bias/assessing-risk-bias-included-studies> accessed 6/7/17.