

Abstract Title

Lipid formulations for patients requiring parenteral nutrition: A review of clinical and cost-effectiveness and guidelines;

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Abstract

INTRODUCTION: Although intravenous lipid emulsions are routinely provided to patients requiring parenteral nutrition (PN), the evidence on the clinical effectiveness and safety of various formulations remains unclear.

OBJECTIVES: CADTH's objectives of this review were to examine the clinical effectiveness, cost-effectiveness and evidence-based guidelines associated with lipid formulations in adult and pediatric patients requiring PN.

METHODS: A limited literature search was conducted. The included SRs were critically appraised using AMSTAR, RCTs were critically appraised using the Downs and Black checklist, economic studies were assessed using the Drummond checklist, and guidelines were assessed with the AGREE II instrument.

RESULTS: Low to moderate quality evidence from eight RCTs and ten SRs demonstrated that non-100% soybean emulsions, especially fish oil-containing emulsions, are no less safe than pure soybean emulsions and may confer clinical benefits in post-operative adult patients. Safety parameters related to liver function, inflammation, and adverse events were not adversely affected by non-100% soybean emulsions. The economic evaluations demonstrated the cost-effectiveness of fish oil emulsion over soybean-based emulsions. However, there were substantial limitations in the economic analyses and the results should be interpreted with caution. European guidelines suggest the use of fish-oil containing emulsions in post-operative adult patients.

CONCLUSIONS: Due to the lack of high-quality evidence for the comparison of clinical outcomes between patients receiving PN with different intravenous lipid emulsions, it is not possible to draw any conclusions with a high level of confidence. However, there were consistent trends among studies.

SIGNIFICANCE TO THE FIELD OF DIETETICS: Clinical dietitians receive conflicting messages on formulations of intravenous lipid emulsions for PN. CADTH's review provides the latest evidence to inform decision making both in clinical practice as well as product procurement efforts within institutional settings.