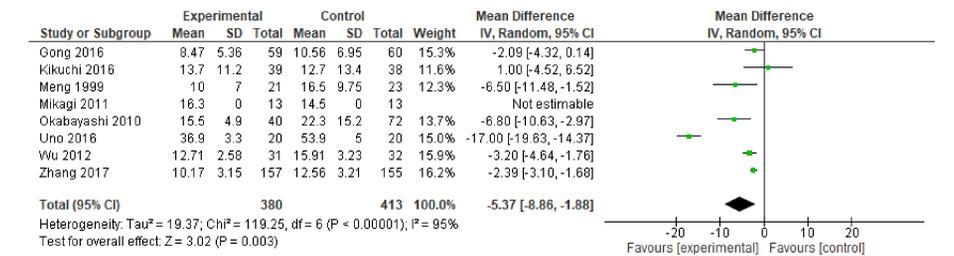
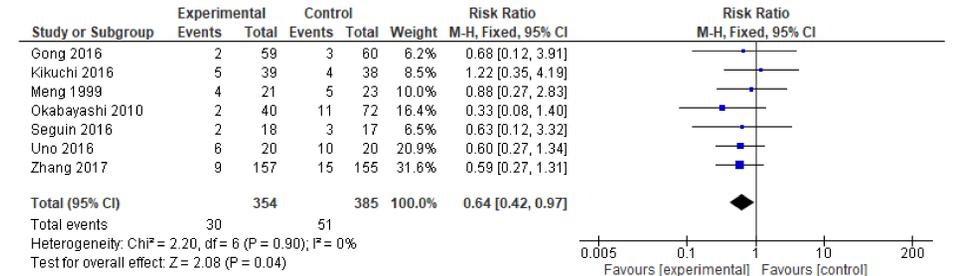


Introduction

- The role and effectiveness of immunonutrition have not been established.
- To date, there is no meta-analysis about the effects of peri-operative immunonutrition in patients undergoing elective hepatectomy.
- The purpose of this study is to clarify the effects of immunonutrition on clinical outcomes and to improve and examine current associated levels of evidence.

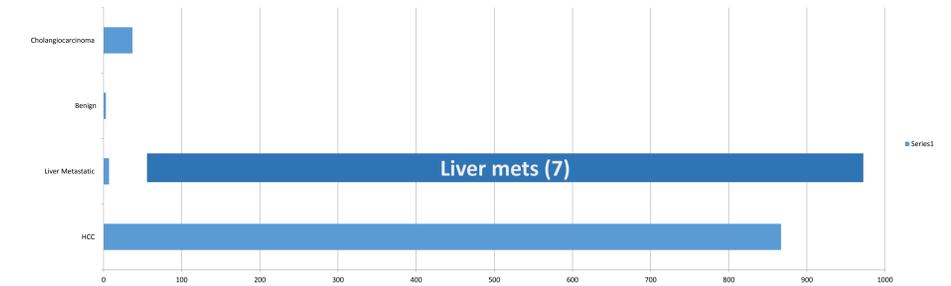
Methods and Materials

- Main electronic databases [MEDLINE via Pubmed, EMBASE, Scopus, Web of Knowledge, Cochrane Central Register of Controlled Trials (CENTRAL) and the Cochrane Library, and clinical trial registry (ClinicalTrial.gov)] were searched for studies reported clinical outcomes or effects of IM.
- The systematic review was conducted in accordance with the PRISMA guidelines and meta-analysis was analysed using fixed and random-effects models.



Results

- Ten RCTs were identified. A total of 960 patients (465 IM and 495 control) were included in the final pooled analysis. Of these patients, **867** (90%) underwent hepatectomy for primary hepatocellular carcinoma.
- IM significantly reduced post-operative wound infection (risk ratio (RR) 0.64, 95% confidence interval (CI) 0.42 to 0.97; p = 0.04).
- Although, the combined results showed that IM had a shorter hospital stay (MD -5.37 days, 95% CI -8.86 to -1.88; p < 0.00001), there was significant heterogeneity observed across these studies.
- There was no statistically significant benefit on other post-operative morbidities of interest (e.g. bile leak, liver failure, ascites) and mortality.



Conclusions

IM decreases wound infection rates and reduces length of stay. It should be recommended as routine nutritional support as part of the Enhanced Recovery after Surgery (ERAS) programmes for hepatobiliary surgery.

References

- Richter B, Schmandra TC, Golling M, Bechstein WO. Nutritional support after open liver resection: a systematic review. Digestive surgery. 2006;23(3):139-45.
- Plauth M, Cabre E, Riggio O, Assis-Camilo M, Pirlich M, Kondrup J, et al. ESPEN Guidelines on Enteral Nutrition: Liver disease. Clin Nutr. 2006;25(2):285-94.
- Plauth M, Cabre E, Campillo B, Kondrup J, Marchesini G, Schutz T, et al. ESPEN Guidelines on Parenteral Nutrition: hepatology. Clin Nutr. 2009;28(4):436-44.
- Marik PE, Zaloga GP. Immunonutrition in high-risk surgical patients: a systematic review and analysis of the literature. JPEN Journal of parenteral and enteral nutrition. 2010;34(4):378-86.
- Hegazi RA, Husted DS, Evans DC. Preoperative standard oral nutrition supplements vs immunonutrition: results of a systematic review and meta-analysis. Journal of the American College of Surgeons. 2014;219(5):1078-87.