

Preoperative Exclusive Enteral Nutrition Reduces Postoperative Complications in Adults with Crohn’s Disease Undergoing Elective Surgery

SYSTEMATIC REVIEW AND META-ANALYSIS

Dóra Demeter^{1,2}, Gergely Kollányi^{1,3}, Amir Makolli^{1,4,5}, Mahmoud Obeidat¹, Ayano Yoshida¹, Péter Hegyi^{1,6,7}, Petra Anna Golovics^{1,2}, Tibor Gyökeres^{1,2}



1. Centre for Translational Medicine, Semmelweis University, Budapest, Hungary
2. Department of Gastroenterology, Central Hospital of Northern Pest-Military Hospital, Budapest, Hungary.
3. Department of Gastroenterology, St. Imre Teaching Hospital, Budapest, Hungary
4. Department of Pharmacology and Pharmacotherapy, Semmelweis University, Budapest, Hungary
5. Center for Pharmacology and Drug Research & Development, Semmelweis University, Budapest, Hungary
6. Institute of Pancreatic Diseases, Semmelweis University, Budapest, Hungary
7. Institute for Translational Medicine, Medical School, University of Pécs, Pécs 7623, Hungary

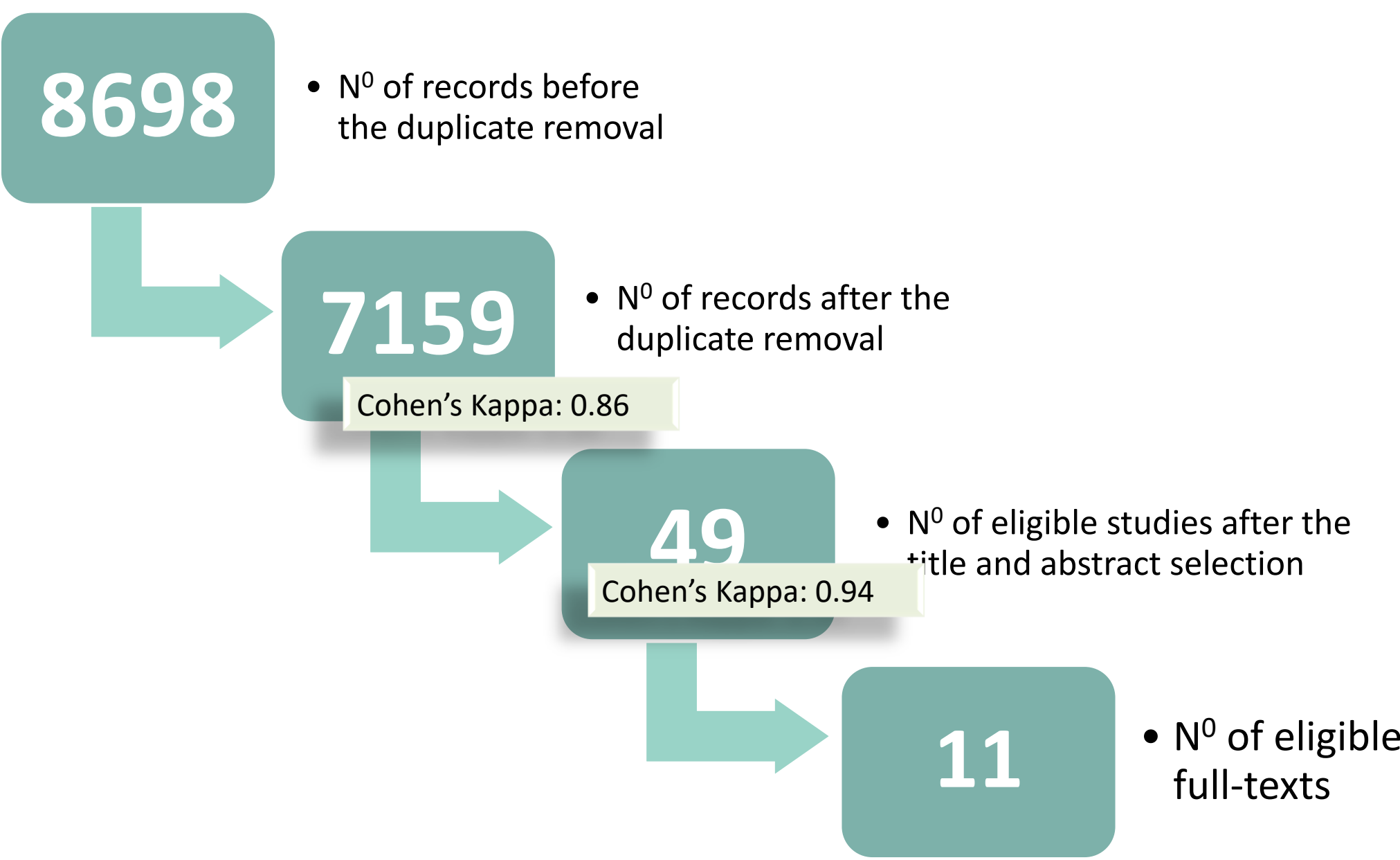
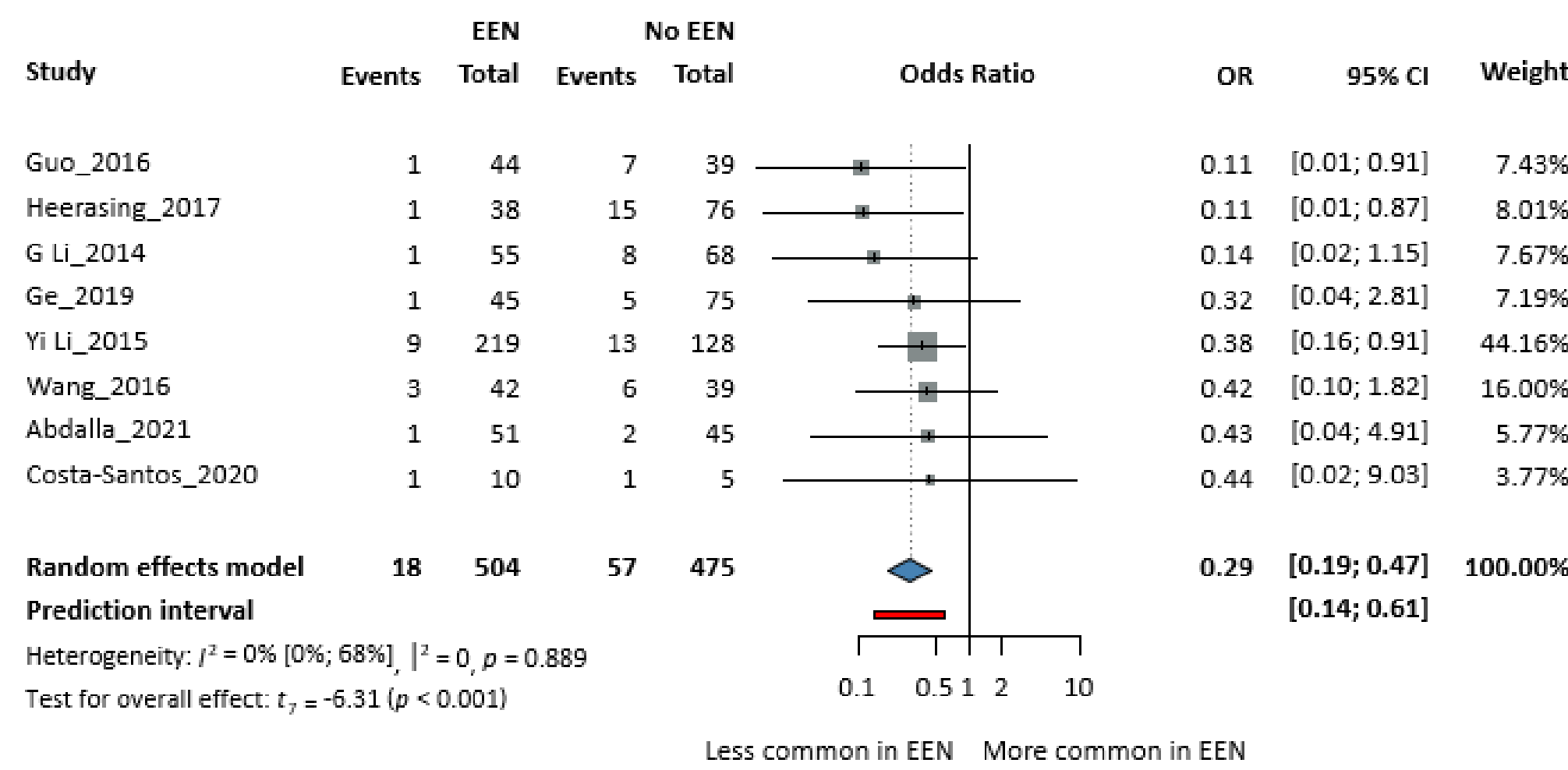
BACKGROUND

Exclusive enteral nutrition (EEN) is a well-established first-line treatment for inducing remission in paediatric Crohn's disease. However, its use in adult Crohn’s disease treatment remains limited. In adults, 22%¹ of patients require surgery within the first five years after diagnosis, with postoperative complication rates reaching around 25%². This study investigates whether preoperative EEN can reduce postoperative complications in adults with Crohn’s disease undergoing elective surgery.

METHODS

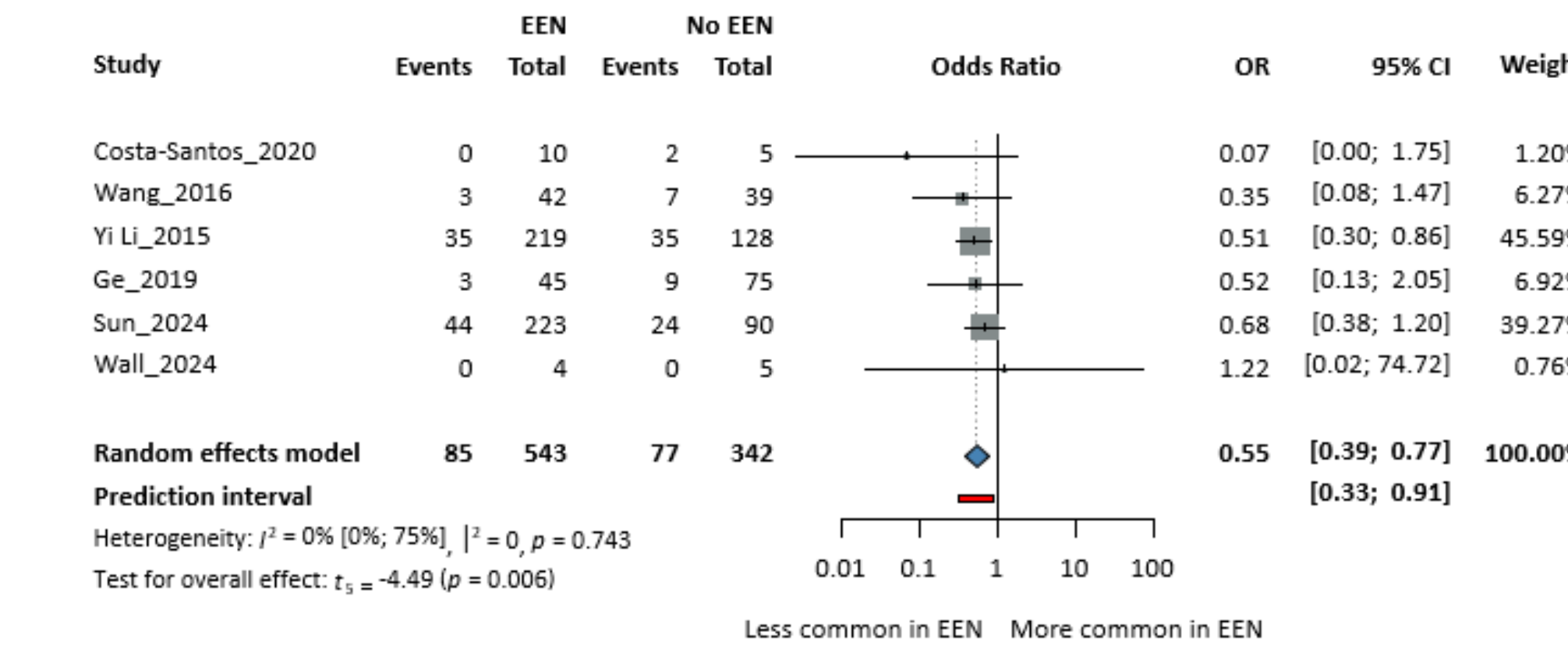
A systematic search was conducted on October 26, 2024, across three databases: PubMed, EMBASE, and the Cochrane Library. Studies were included if they involved at least two weeks of preoperative EEN and reported postoperative outcomes. Prospective and retrospective cohort studies were included. The primary outcomes were anastomotic leakage wound infection, and abscess formation, while the secondary outcome was six month endoscopic recurrence rate. The odds ratio (OR) and mean differences (MD) with their 95% confidence interval (CI) were calculated using a random-effect model.

Anastomotic leakage



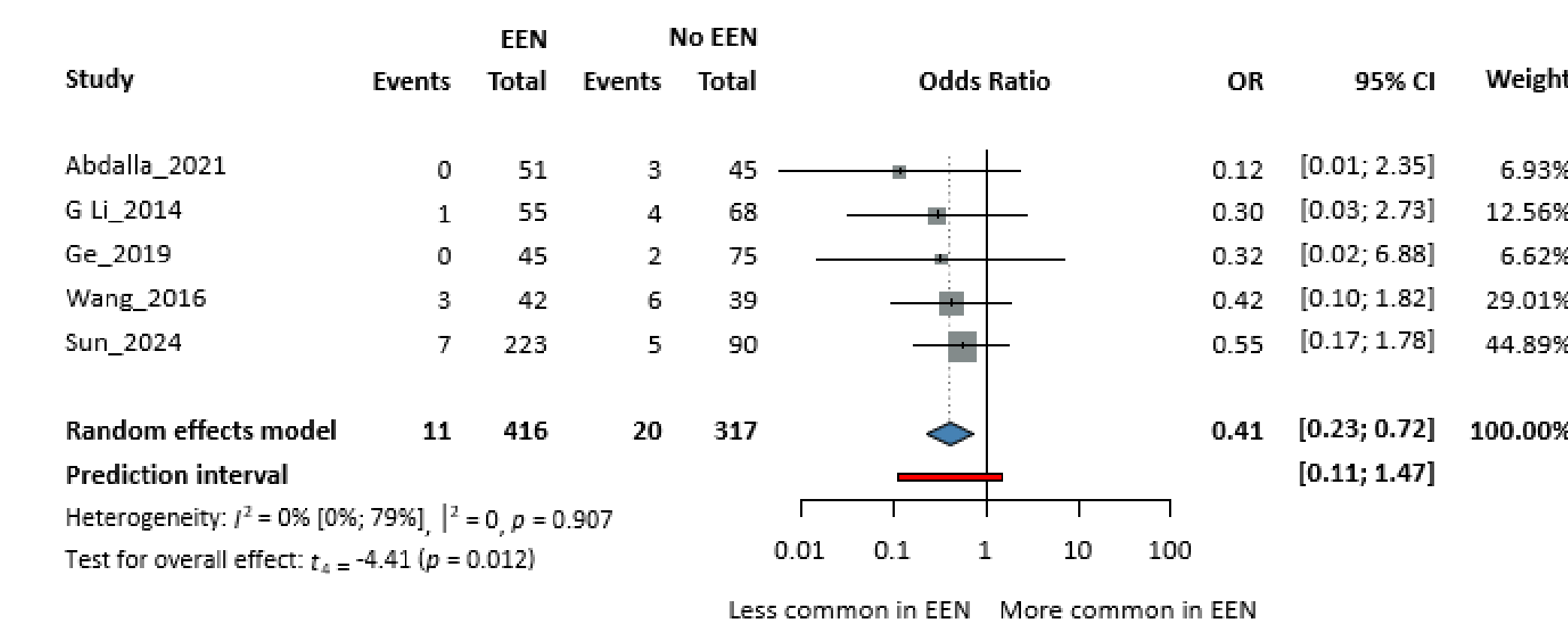
RESULTS

Wound infection



A total of 11 studies, including 2112 patients, were included in the analysis. EEN significantly reduced the odds of anastomotic leakage (OR=0.29, CI: 0.19-0.47), wound infection (OR=0.55, CI: 0.39-0.77), and abscess formation (OR=0.41, CI: 0.23-0.72). The six month endoscopic recurrence rate was also significantly reduced (OR=0.36, CI: 0.04-3.24).

Abscess formation



CONCLUSION

Preoperative EEN significantly reduces the risk of anastomotic leakage, stoma formation, and abscess formation, leading to improved postoperative outcomes. These findings support adding EEN into preoperative management for adult Crohn’s disease patients undergoing elective surgery to enhance recovery and minimize complications. Further research is needed with a control group matching energy and protein intake.

1. Burisch, J., et al.,(2019)
2. Luglio, G., et al.,(2022)

