

Risk Factors for Pancreatic Exocrine Insufficiency after Acute Pancreatitis: A Systematic Review and Meta-analysis



INTRODUCTION

Pancreatic exocrine insufficiency (PEI) may develop after acute pancreatitis (AP). The incidence and predisposing factors are not well described, nor is optimal pancreatic enzyme replacement (PERT) in this setting.

AIMS

We investigated the proportion, risk factors, and effect of PERT in patients with PEI after AP.

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METHODS

The study protocol was registered on PROSPERO (CRD42024516403). We systematically searched three databases (PubMed, EMBASE, and CENTRAL) on February 23, 2024. We included studies reporting on risk factors and PERT efficacy in PEI associated with AP. Pooled proportions and odds ratios (OR) with the 95% confidence intervals (CI) were calculated using a random-effects model.

RESULTS

We identified **54 eligible articles**. PEI occurred in 22% (CI: 17–28) of the 17,365 analysed AP patients. The **PEI rate was high at discharge at 64%** (CI: 19–93) (Figure 1.), but decreased and stabilized at 23% (CI: 8–49) after the 1st year of follow-up. **The odds of PEI were two times higher for severe** (vs. non-severe) **AP** (OR: 2.59, CI: 1.15–5.85) cases. (Figure 2.) Necrosis did not significantly increase the risk of PEI (OR: 1.43, CI: 0.32–6.45), but necrosectomy did (OR: 3.26, CI: 1.6–6.64). (Figure 3.) Overall, **PERT was prescribed in 25%** (CI: 19–32) of patients, but efficacy could not be evaluated due to limited data.

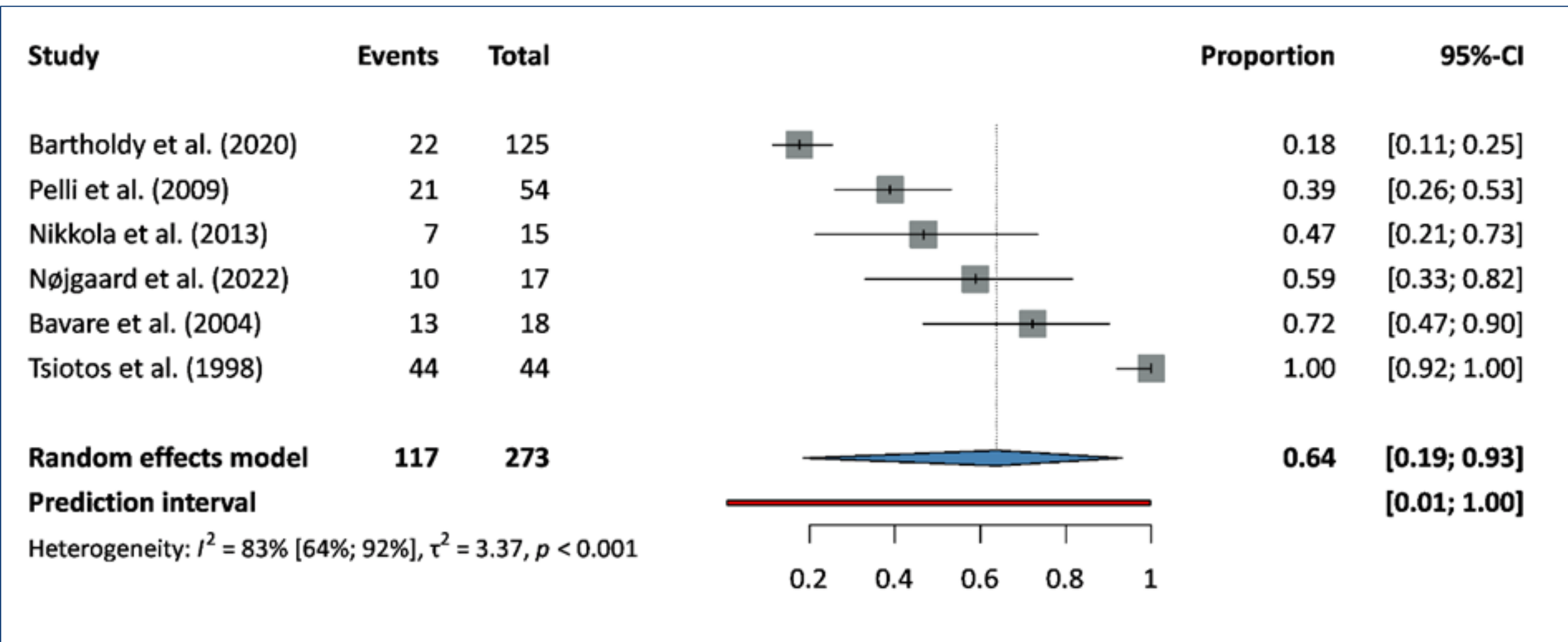


Figure 1. Proportion of pancreatic exocrine insufficiency among patients with acute pancreatitis at discharge.

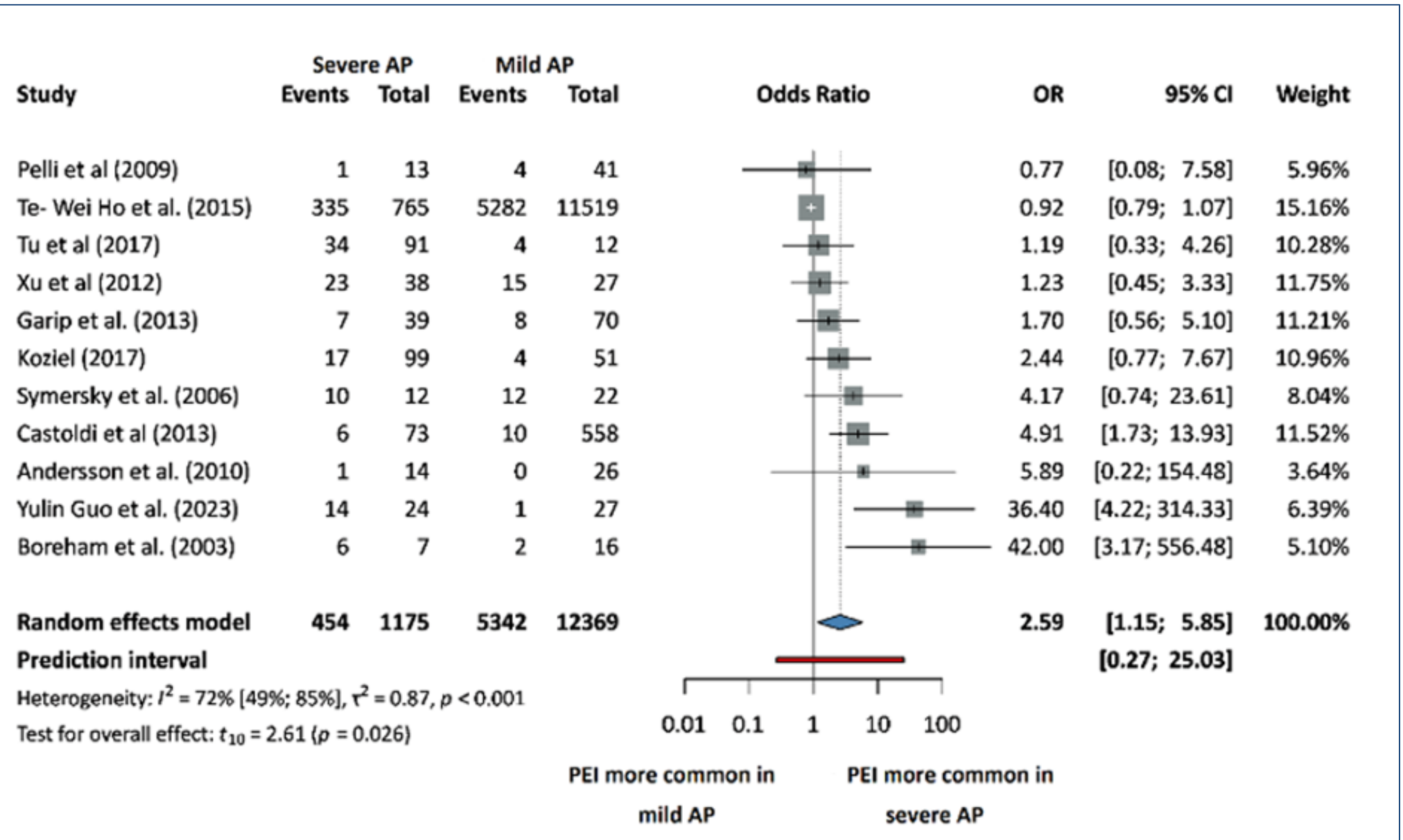


Figure 2. Odds of PEI development among patients with severe acute pancreatitis compared to patients with the mild form.

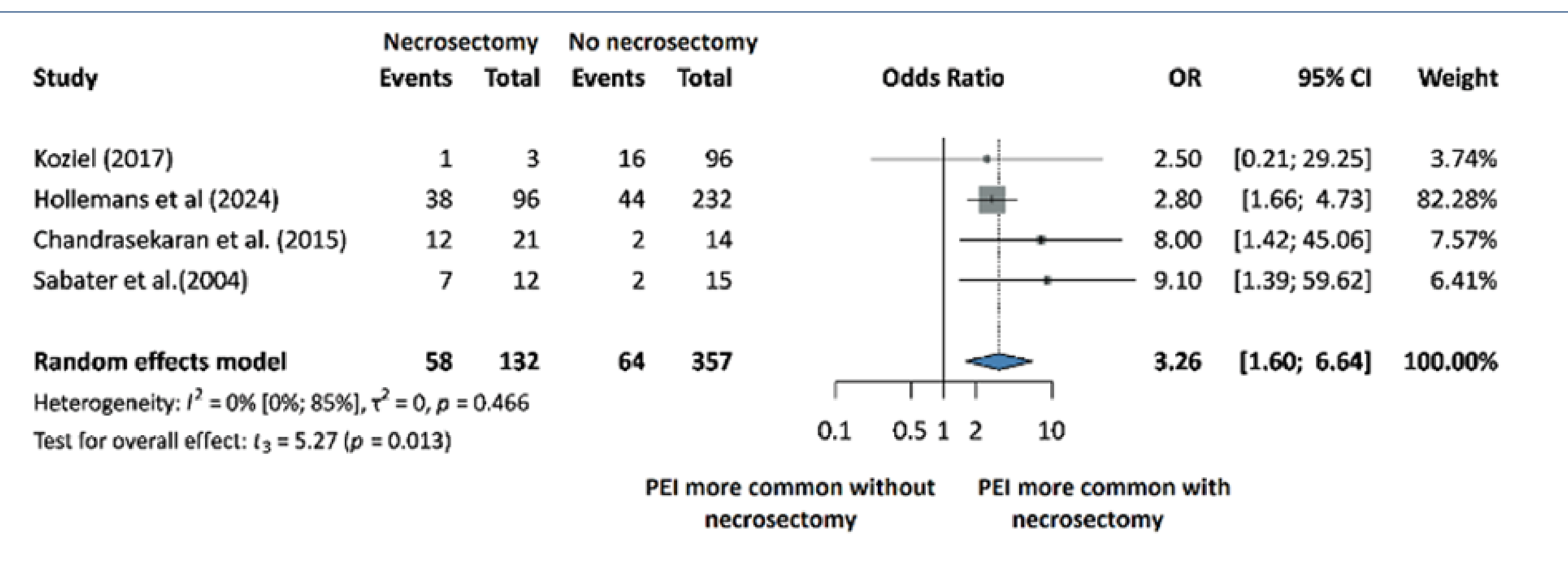


Figure 3. Odds of pancreatic exocrine insufficiency development among patients with necrosectomy compared to patients without necrosectomy.

CONCLUSIONS

PEI affects one in five AP patients in the long term. The rate is high at discharge but decreases and stabilizes after one year of follow-up. Severe disease and necrosectomy are risk factors for AP-induced PEI.

