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## INTRODUCTION

- Anemia is the most common extra-intestinal complication of inflammatory bowel diseases (IBD)
- Anemia in IBD has been associated with worse prognosis, increased hospitalization rates, and reduced quality of life
- Regular screening for iron deficiency anemia (IDA) and appropriate treatment is crucial for IBD patients
- Iron supplementation can be administered orally or intravenously (IV)
- The choice between oral and IV iron supplementation is still debated among physicians
- The goal of the study was to compare the effectiveness and tolerability of oral and IV iron supplementation for treating anemia in adult IBD patients.

## ANALYSIS

- Data synthesis and statistical analysis performed using Review Manager 5.4 software
- Risk ratios (RRs) with corresponding 95% confidence intervals (95% CIs) calculated using a fixed-effect model for each outcome
- Heterogeneity between studies measured using I<sup>2</sup> value, with I<sup>2</sup> ≥ 50% indicating substantial heterogeneity
- Relative risk (RR) and its 95% confidence intervals used for dichotomous variables
- Significance level set at p-value less than 0.05.

## DISCUSSION

- Iron supplementation improves quality of life and illness prognosis in IBD patients
- The choice between oral and intravenous (IV) iron forms is unclear
- IV iron compounds like iron sucrose, ferric carboxymaltose, and iron isomaltoside are safe and effective
- IV iron replenishes body iron reserves quicker and more effectively than oral iron
- Existing systematic reviews lack meta-analysis and recent study inclusion
- Limitations include high risk of bias in included trials and lack of cost analysis

## METHODS

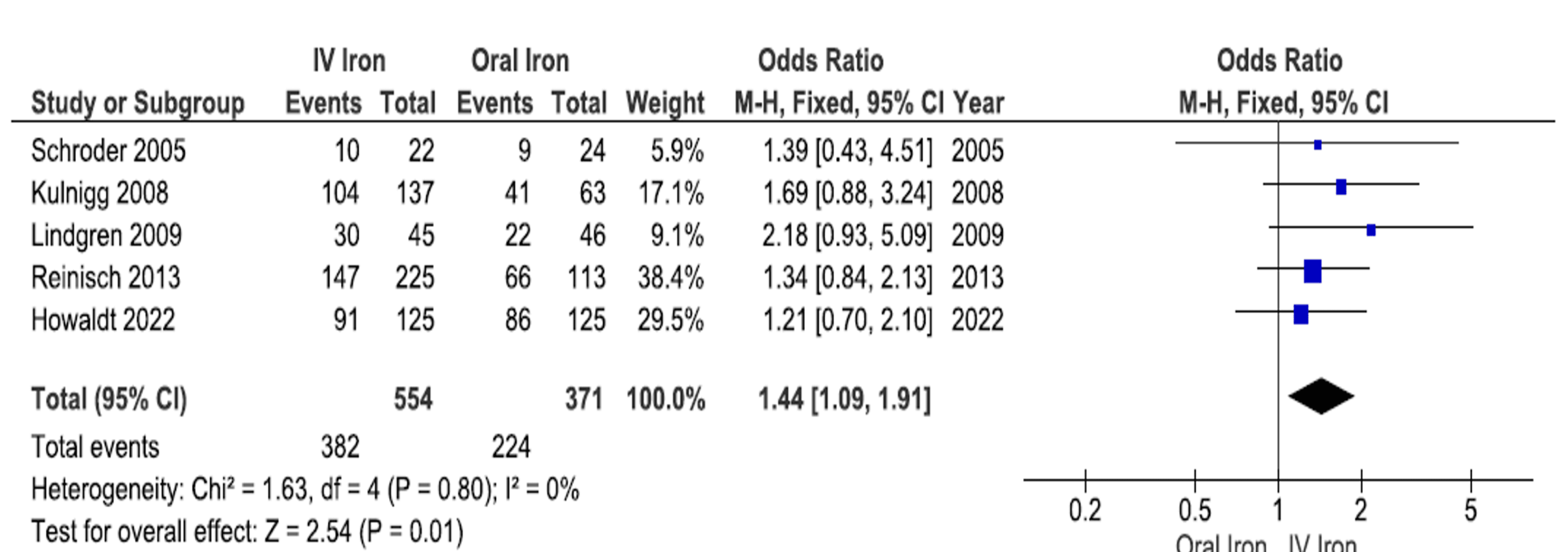
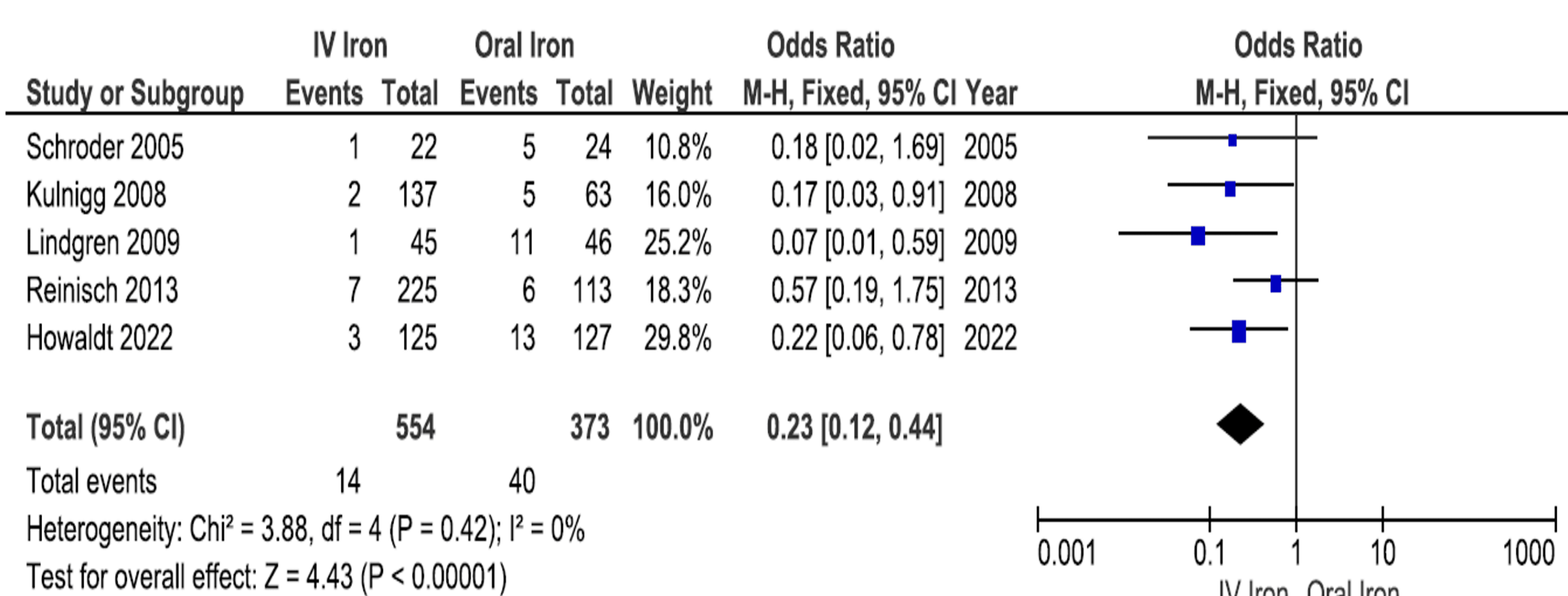
- Conducted a systematic review and meta-analysis of randomized controlled trials comparing IV to oral iron for treating iron deficiency anemia in adults with IBD
- Searched the databases PubMed, Web of Science, Scopus, and Cochrane Central Register of Controlled Trials until December 2022
- Used a fixed-effect model to obtain pooled odds ratio (OR) estimates and their 95% confidence intervals (CI).

## RESULTS

- Five trials with a total of 910 IBD patients were included in the meta-analysis
- IV iron was found to be more effective than oral iron in increasing hemoglobin levels to ≥2.0 g/dL (OR: 1.44, 95% CI: 1.09 - 1.91, P = 0.01)
- The IV iron group had lower rates of treatment withdrawal due to adverse effects or intolerance (OR: 0.23, 95% CI: 0.12 - 0.44, P < 0.0001)
- No evidence of heterogeneity was found across all studies, but there was a significant risk of bias.

## CONCLUSIONS

- IDA significantly affects healthcare expenditures and quality of life
- IV iron demonstrated higher efficacy in achieving a hemoglobin response of at least 2.0 g/dL compared to oral iron supplementation
- Patients treated with IV iron had decreased treatment termination rates due to side effects or intolerance
- Available randomized studies indicate that IV iron is more effective and well-tolerated for treating anemia in adult IBD patients compared to oral iron supplementation.



**Figure 1: Forest plot for hemoglobin response (ie, an increase of ≥2.0 g/dL): results from individual studies and meta-analysis.**  
CI = confidence interval, IV = intravenous, OR = odds ratio.

**Figure 2: Forest plot for treatment discontinuation, due to adverse events or intolerance: results from individual studies and meta-analysis.**  
CI = confidence interval, IV = intravenous, OR = odds ratio.

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