

Efficacy of Panitumumab vs. Cetuximab Plus Chemotherapy in Recurrent or Metastatic Squamous-Cell Carcinoma of the Head and Neck: An Anchored Matching-Adjusted Indirect Comparison

Xuan Zhang, Shrikar Reddy Badikol, Jonathan Lilley, Francie Moehring-Moskal, Fabian D'Souza

Boston Strategic Partners, Inc.

BACKGROUND

- Squamous-cell carcinoma of the head and neck (SCCHN) is a malignant cancer that originates in the mucosal linings of the oral cavity, pharynx, and larynx¹
- SCCHN is the 7th most common cancer worldwide, accounting for approximately 944,000 new cases and 480,000 deaths globally each year²
- Both cetuximab and panitumumab are monoclonal antibodies targeting the epidermal growth factor receptor
- Currently, cetuximab is approved for treatment of recurrent or metastatic SCCHN, and panitumumab is being investigated for this indication^{3,4}
- Panitumumab improved progression-free survival (PFS) in SCCHN, but failed to demonstrate a significant benefit in overall survival (OS)^{5,6}
- A lack of direct head-to-head randomized controlled trials presents an evidence gap for clinical guidelines and reimbursement

OBJECTIVE

This study utilized an anchored Matching-Adjusted Indirect Comparison (MAIC) to compare the efficacy of panitumumab plus chemotherapy versus cetuximab plus chemotherapy for SCCHN

METHODS

- Individual patient-level data (IPD) from a phase 3 randomized trial of chemotherapy with or without panitumumab (SPECTRUM^{3,4}) were weighted to match the baseline treatment effect modifiers in the aggregate data (AGD) of the cetuximab plus chemotherapy trial (EXTREME^{5,6}) population
- Pseudo-IPD for OS and PFS were reconstructed from published Kaplan-Meier curves³
- Comparative efficacy was evaluated using weighted Cox proportional hazard models to calculate Hazard Ratios (HR) for OS and PFS and weighted logistic regression to determine Odds Ratios (OR) for best overall response (BOR)
- All endpoints were anchored to the common chemotherapy arm and evaluated at a statistical significance level $\alpha=0.05$

RESULTS

- The MAIC successfully balanced key baseline characteristics between cohorts: effective sample size (ESS) was 208 (from an unweighted N=260) compared to the cetuximab trial population (N=266) (**Figure 1**)
- Compared with cetuximab, panitumumab was associated with significantly inferior PFS (HR [95% CI]: 1.55 [1.14-2.10]; $p=0.005$; **Figure 2**)
- No statistically significant difference in OS was observed, although the point estimate favored cetuximab (HR [95% CI]: 1.27 [0.94; 1.72]; $p=0.112$; **Figure 3**)
- No significant difference in BOR was observed between the two treatments (OR [95% CI]: 0.74 [0.40, 1.37]; $p=0.337$; **Figure 4**)

FIGURE 1. Standardized mean differences, before and after MAIC

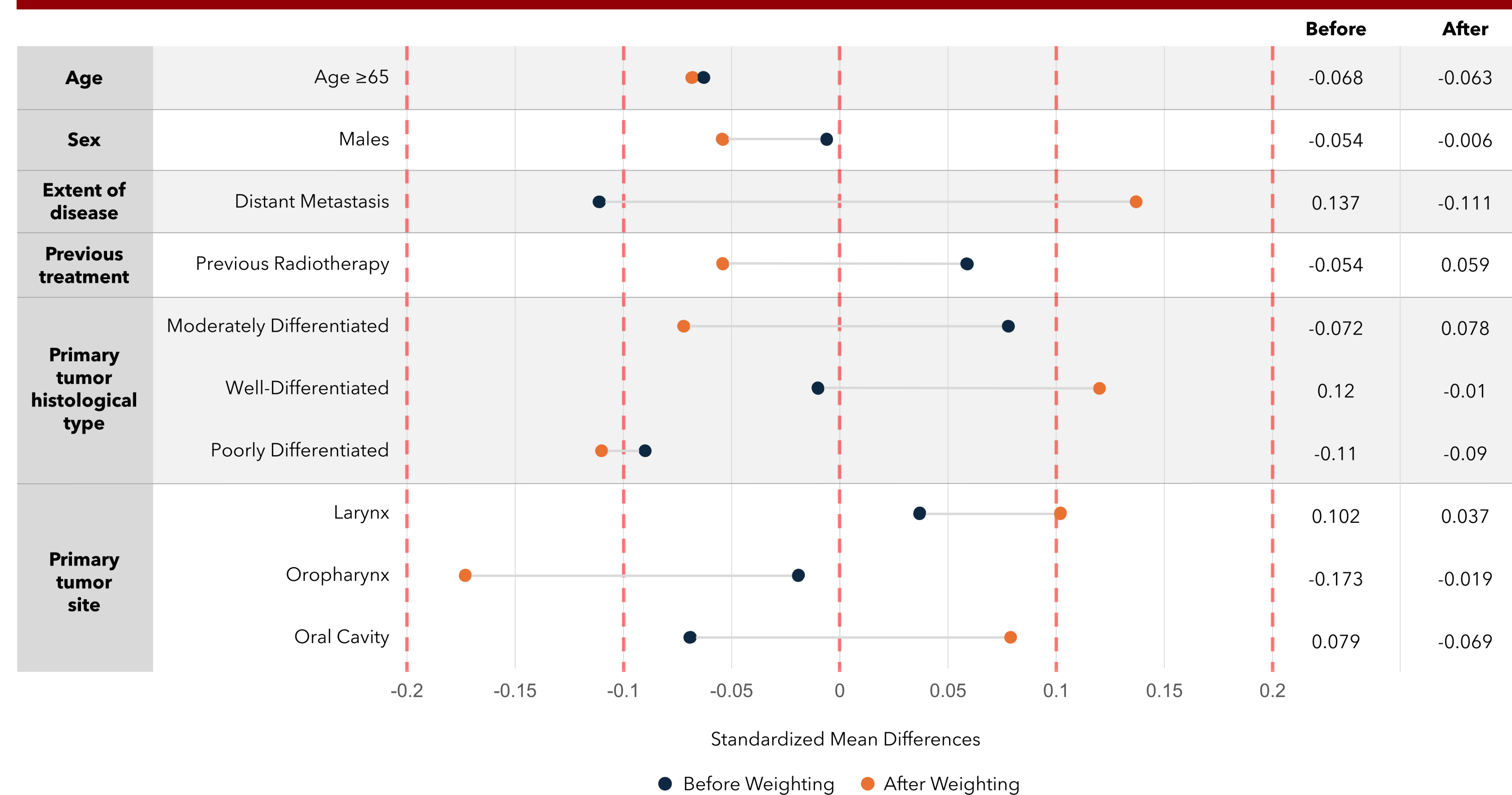
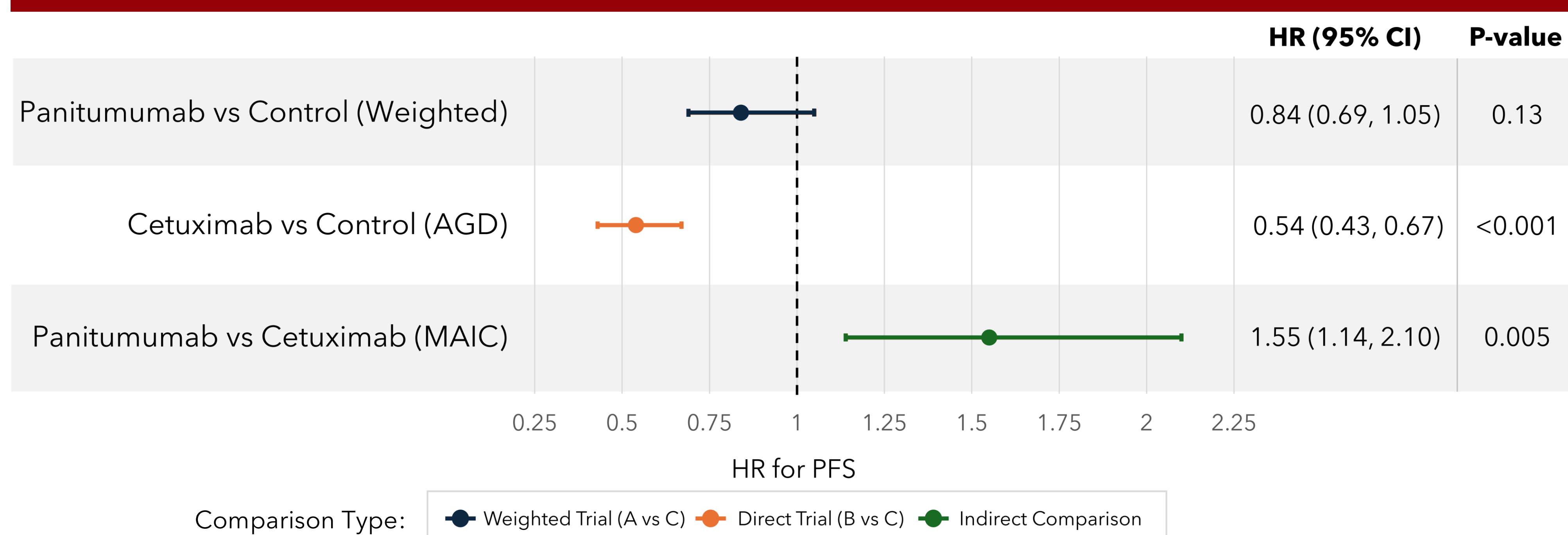


FIGURE 2. Hazard ratios for progression-free survival



REFERENCES

1. Mody M, Rocco J, Yom S et al. Head and neck cancer. *The Lancet*, 2021; 398, 2289-2299. doi: 10.1016/S0140-6736(21)01550-6;
2. Sun H, et al. *Front Oncol*. 2025; 15:1665019. doi: 10.3389/fonc.2025.1665019
3. Vermorken JB, et al. *N Eng J Med*. 2008; 359(11): 1116-1127. doi: 10.1056/NEJMoa0802656;
4. SPECTRUM. *Clinicaltrials.gov*: NCT004460265. Updated March 17, 2014. Accessed Oct 27, 2025;
5. Misiukiewicz K and Posner M. *J Comp Eff Res*. 2013; 2(6). doi:10.2217/ce.13.72;
6. EXTREME. *Clinicaltrials.gov*: NCT00122460. Updated July 23, 2014. Accessed Oct 27, 2025.

FIGURE 3. Hazard ratios of overall survival

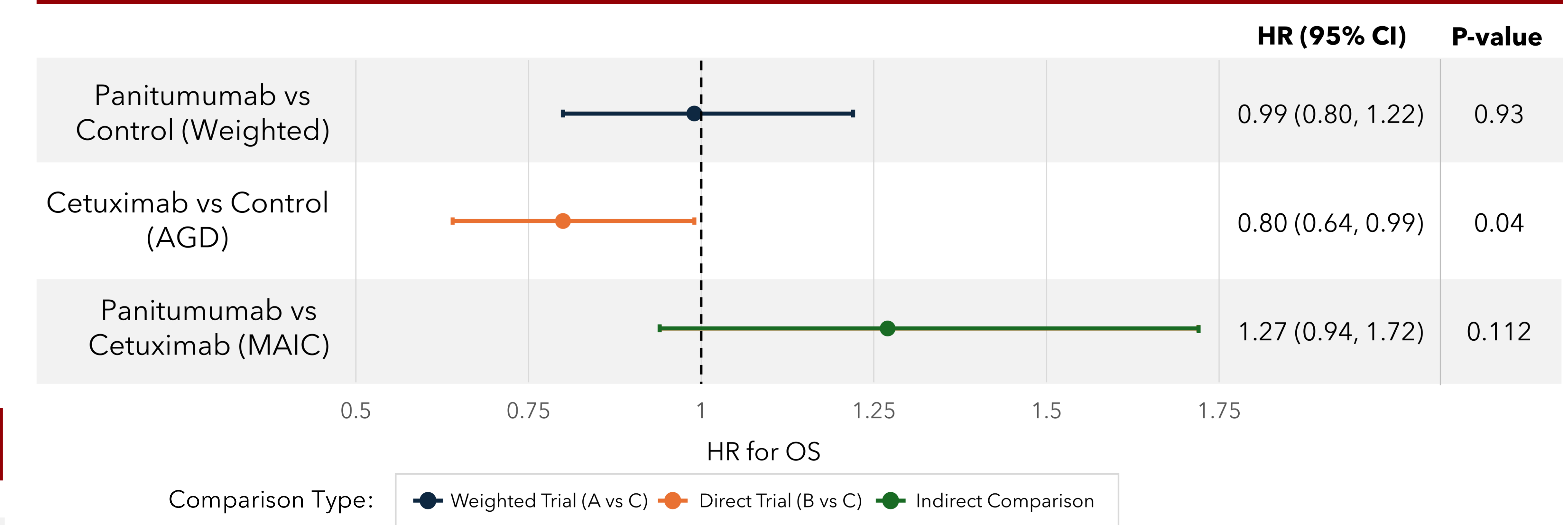
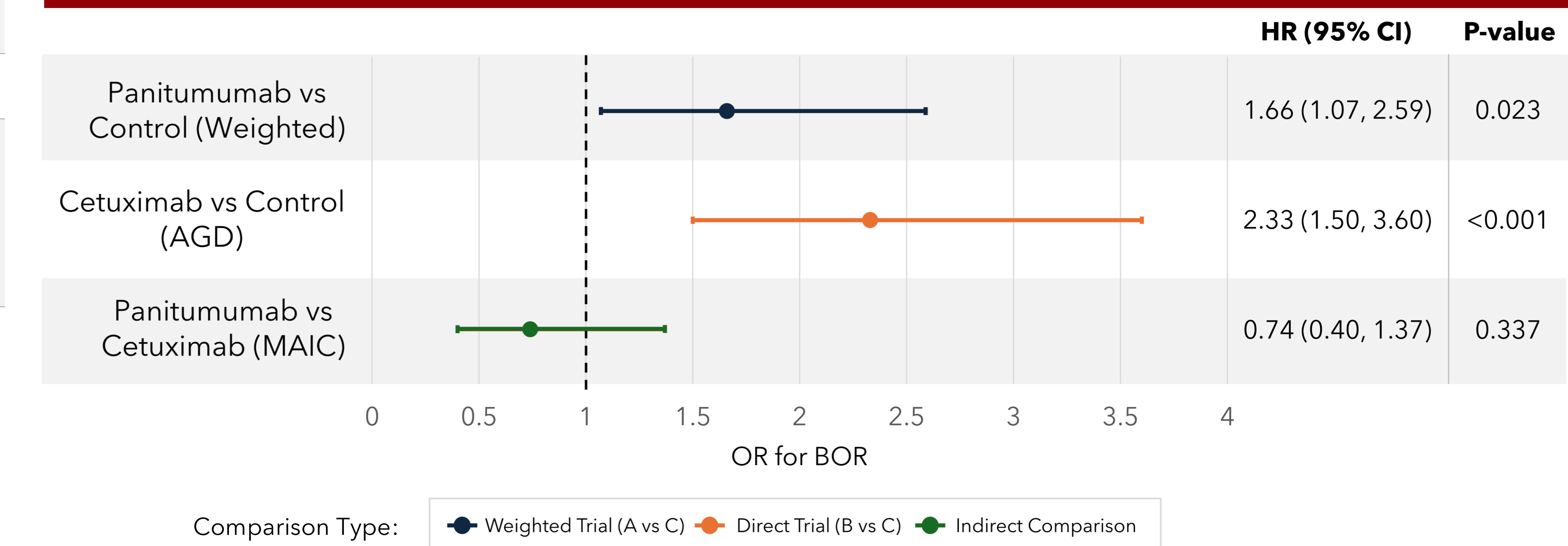


FIGURE 4. Odds ratios of best overall response



CONCLUSIONS

- This anchored MAIC supports cetuximab plus chemotherapy as a more efficacious treatment compared to panitumumab plus chemotherapy for recurrent or metastatic SCCHN, primarily based on the statistically significant improvement in PFS
- These findings address a critical evidence gap for treatment of recurrent metastatic SCCHN and may prove important for future Health Technology Assessment (HTA) decision-making processes

ABBREVIATIONS

AGD, aggregate data; BOR, best overall response; CI, confidence interval; ESS, effective sample size; HTA, Health Technology Assessment; HR, hazard ratio; IPD, individual patient-level data; MAIC, Matching-Adjusted Indirect Comparison; OR, odds ratio; OS, overall survival; PFS, progression-free survival; SCCHN, squamous cell carcinoma of the head and neck

