Comparative efficacy and safety of tislelizumab versus other anti–PD-1 therapies in first-line treatment of gastric or gastroesophageal junction cancer: a network meta-analysis

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ABSTRACT

Objectives: To compare the efficacy and safety of tislelizumab (TIS) plus chemotherapy (CT) with other anti–PD-1 therapies—nivolumab (NIV) and pembrolizumab (PEM)—plus CT in the first-line (1L) treatment of unresectable, locally advanced, or metastatic gastric cancer (GC) or gastroesophageal junction cancer (GEJC) using network meta-analysis (NMA).

Methods: A systematic literature review identified five relevant trials: ATTRACTION-4 (part 2) and CheckMate 649 for NIV+CT; KEYNOTE-062 and KEYNOTE-859 for PEM+CT; and RATIONALE-305 for TIS+CT. Bayesian fixed-effect NMAs were conducted using extracted trial data, with placebo+CT as the common comparator. Outcomes assessed included overall survival (OS), progression-free survival (PFS), and grade ≥3 treatment-related adverse events (TRAEs). Markov chain Monte Carlo methods were applied to estimate hazard ratios (HRs) or odds ratios (ORs) and 95% credible intervals (CrIs). Subgroup analyses were performed for PD-L1 expression levels (≥5% and ≥1%).

Results: The included trials were sufficiently similar in baseline characteristics, design, and eligibility criteria to enable network formation. TIS+CT demonstrated comparable efficacy to both NIV+CT and PEM+CT in terms of OS and PFS across all patients and PD-L1 subgroups (≥1% and ≥5%). For safety, TIS+CT was associated with a statistically significant reduction in grade ≥3 TRAEs compared to NIV+CT and a numerical advantage compared to PEM+CT (Table).

Conclusions: TIS+CT provides similar efficacy to established anti–PD-1 therapies with a potentially improved safety profile in the 1L treatment of GC/GEJC. These findings may support its consideration as an alternative treatment option.

Table. Results for key efficacy and safety outcomes		
	TIS+CT vs NIV+CT HR/OR (95% CrI)	TIS+CT vs PEM+CT HR/OR (95% CrI)
OS	0.98 (0.83, 1.16)	1.00 (0.85, 1.19)
OS PD-L1 ≥1%	1.03 (0.85, 1.25)	1.01 (0.84, 1.20)
OS PD-L1 ≥5%	1.01 (0.79, 1.30)	1.01 (0.79, 1.30)
PFS	1.02 (0.85, 1.22)	1.00 (0.83, 1.19)
TRAEs	**0.69 (0.51, 0.93)**	0.86 (0.64, 1.17)