

Supplementary Tables

Supplementary Table 1. Quality assessment of included studies reporting HRQoL

Trial; NCT	Sample Size	Respondent Selection and Recruitment	Inclusion/ Exclusion Criteria	Response Rates to Instruments Used	Loss to Follow-up	Missing Data	Any Other Problems With the Study
NCT03671265 ¹	N = 20	As a primary endpoint of the trial, HRQoL was assessed for patients receiving camrelizumab added to docetaxel, cisplatin, and radiation therapy in patients with locally advanced ESCC.	<p>Patients were included if they had advanced ESCC, had not received prior anti-tumor treatment, were amenable to surgery, had evaluable lesions per RECIST criteria, had ECOG PS score of 0 or 1, life expectancy of at least 6 months, normal bone marrow reserve and blood cell counts, normal renal function and liver function.</p> <p>Patients were excluded if they had any active autoimmune diseases or a</p>	<p>Baseline: 100%</p> <p>Week 31: 44%</p>	30% of patients died at a median follow-up of 23.7 months	Handling of missing data is unclear	Study was of a single-arm design

Trial; NCT	Sample Size	Respondent Selection and Recruitment	Inclusion/ Exclusion Criteria	Response Rates to Instruments Used	Loss to Follow-up	Missing Data	Any Other Problems With the Study
			<p>history of immune diseases; ongoing systemic immunosuppressive therapy; abnormal heart disease; pulmonary fibrosis, interstitial pneumonitis, pneumoconiosis, radiation pneumonitis, drug-associated pneumonitis, and severely impaired lung function; congenital or acquired immunodeficiency; and clinically significant concurrent cancer.</p>				

Trial; NCT	Sample Size	Respondent Selection and Recruitment	Inclusion/ Exclusion Criteria	Response Rates to Instruments Used	Loss to Follow-up	Missing Data	Any Other Problems With the Study
E-DIS ² ; NCT01248299	N = 67	As a secondary endpoint of the trial, HRQoL was assessed for patients who continued or discontinued treatment with chemotherapy for mESCC.	<p>Patients were included before starting a 1L 5-FU/platinum-based chemotherapy, had histologically confirmed mESCC, measurable disease, >18 years old, ECOG PS of 0-2. Prior chemotherapy was permitted only if it was delivered as a neoadjuvant treatment.</p> <p>Exclusion criteria were not described.</p>	All randomized patients were included in the HRQoL analysis	At time of analysis, 53 deaths occurred; loss to follow-up following randomization occurred due to PD (n = 2) and patient decision (n = 1)	<p>Patients alive without reported definitive deterioration were censored at the date of last follow-up visit.</p> <p>Patients without any HRQoL questionnaires were censored at randomization.</p>	Study was a non-comparative discontinuation trial

Trial; NCT	Sample Size	Respondent Selection and Recruitment	Inclusion/ Exclusion Criteria	Response Rates to Instruments Used	Loss to Follow-up	Missing Data	Any Other Problems With the Study
NICE ³ ; NCT01249352	N = 107	As a secondary endpoint of the trial, HRQoL was assessed among patients receiving chemoradiotherapy with or without nimotuzumab for the treatment of locally advanced ESCC	<p>Patients were included if they were treatment-naïve with histologically confirmed SCC or an AC of the esophagus that was locally advanced disease and not amenable for surgery, ≥18 years old, ECOG PS of 0-2, appropriate caloric intake, and adequate hematological, liver and kidney function.</p> <p>Patients were excluded if they had aerodigestive fistula or tracheobronchial tree infiltration.</p>	Response rates not reported for instruments used	Loss to follow-up during post randomization occurred in the intervention and control groups due to progression (n= 2 vs 2), toxicity (n=6 vs 2), death (n=6 vs 7), and other causes (n=4 vs 11)	<p>To handle missing items of the questionnaire, a validated method was used:</p> <p>In the case of subscales in which greater than 50% of the items were answered, the subscale sum was multiplied by the number of items that were actually answered. When less than 50% of items in a subscale were answered, this method was not used and the data set was not</p>	Small proportion (6.5%) of sample includes patients with AC; trial is open label.

Trial; NCT	Sample Size	Respondent Selection and Recruitment	Inclusion/ Exclusion Criteria	Response Rates to Instruments Used	Loss to Follow-up	Missing Data	Any Other Problems With the Study
						considered for analysis.	
Conroy 2002 ⁴	N = 71	As a secondary endpoint of the trial, HRQoL was assessed for enrolled patients receiving vinorelbine plus cisplatin for the treatment of mESCC	<p>Patients were included if they were <75 years old, had previously untreated, histologically proven mESCC; WHO performance status <3; peripheral neuropathy less than grade 2.</p> <p>Patients were excluded if they had brain or leptomeningeal involvement or with uncontrolled infection, prior malignancies (other than basal cell carcinoma of the skin) except prior Tis, T1 N0 or T2 N0 squamous cell carcinoma of the head and neck, or</p>	<p>Questionnaire compliance:</p> <p>Baseline: 83%</p> <p>2nd assessment: 95%</p> <p>3rd assessment: 61%</p>	Although study does not report number of those lost to follow-up, reasons for dropout include death, disease progression, and toxicity	If there were items missing within a questionnaire scale, provided at least half of the items in the scale are completed, the scale score was calculated using only those items for which there were known values.	Study was of single-arm design; Study noted that patients with low scores dropped out earlier than patients with high scores, which indicates a selection bias in the HRQoL analysis at the second and fourth cycles.

Trial; NCT	Sample Size	Respondent Selection and Recruitment	Inclusion/ Exclusion Criteria	Response Rates to Instruments Used	Loss to Follow-up	Missing Data	Any Other Problems With the Study
			tracheal involvement or angina or prior myocardial infarction, or factors preventing follow-up.				

AC, adenocarcinoma; ECOG PS, European Co-operative Oncology Group Performance Status; EORTC QLQ-C30, EORTC Core Quality of Life questionnaire; EORTC QLQ OES-18, European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire - Oesophageal Cancer Module; ESCC, esophageal squamous cell carcinoma; HRQoL, health-related quality of life; mESCC, metastatic esophageal squamous cell carcinoma; RECIST, response evaluation criteria in solid tumors; PD, progressive disease; SCC, squamous cell carcinoma; WHO, World Health Organization.

Supplementary Table 2. Quality assessment of included economic evaluations (Table 1 of 2)⁵⁻¹⁴

	1-Zheng-2023	2-Zheng-2023	9-Xu-2023	41-Lu-2023	44-Liu-2023	45-Liu-2023	47-Liu-2023	59-Kang-2023	71-Gong-2023	75-Fang-2023
Study Design										
The research question is stated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The economic importance of the research question is stated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The viewpoint(s) of the analysis are clearly stated and justified	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The rationale for choosing the alternative programmes or interventions compared is stated	Yes	Yes	Yes	Yes	Not clear	Yes	Yes	Yes	Yes	Yes
The alternatives being compared are clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

	1-Zheng-2023	2-Zheng-2023	9-Xu-2023	41-Lu-2023	44-Liu-2023	45-Liu-2023	47-Liu-2023	59-Kang-2023	71-Gong-2023	75-Fang-2023
The form of economic evaluation used is stated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The choice of form of economic evaluation is justified in relation to the questions addressed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Collection										
The source(s) of effectiveness estimates used are stated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Details of the design and results of effectiveness study are given (if based on a single study)	Yes	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes

	1-Zheng-2023	2-Zheng-2023	9-Xu-2023	41-Lu-2023	44-Liu-2023	45-Liu-2023	47-Liu-2023	59-Kang-2023	71-Gong-2023	75-Fang-2023
Incremental analysis is reported	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Major outcomes are presented in a disaggregated as well as aggregated form	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No
The answer to the study question is given	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Conclusions follow from the data reported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Conclusions are accompanied by the appropriate caveats	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

NA, not applicable.

Supplementary Table 3. Quality assessment of included economic evaluations (Table 2 of 2)¹⁵⁻²⁵

	89- Zhu- 2022	93- Zheng- 2022	101- You- 2022	131- Shen- 2022	132-Shao- 2022	136-Qu- 2022	156-Liu- 2022	214- Cao- 2022	232- Zhang- 2021	269- Marguet- 2021	455- Janmaat- 2016
Study Design											
The research question is stated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The economic importance of the research question is stated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The viewpoint(s) of the analysis are clearly stated and justified	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The rationale for choosing the alternative programmes or interventions compared is stated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The alternatives being compared are clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Not clear	Yes

	89- Zhu- 2022	93- Zheng- 2022	101- You- 2022	131- Shen- 2022	132-Shao- 2022	136-Qu- 2022	156-Liu- 2022	214- Cao- 2022	232- Zhang- 2021	269- Marguet- 2021	455- Janmaat- 2016
Incremental analysis is reported	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Major outcomes are presented in a disaggregated as well as aggregated form	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	No
The answer to the study question is given	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Conclusions follow from the data reported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Conclusions are accompanied by the appropriate caveats	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

NA, not applicable.

Supplementary Table 4. Summary of disutility values reported by included studies.

Reference	Treatment	Region (n studies)	Disutility Values
Lu 2023 ⁸	TIS + CT vs. PBO + CT	China (n=1)	Neutropenia: 0.2; Leukopenia: 0.2; Anemia: 0.07
Liu 2023 ⁹ Gong 2023 ¹³	CAM + CT vs. CT	China (n=2)	Decreased neutrophil count: 0.200; Anemia: 0.07 to 0.078
Umeh 2023 ²⁶ NICE 2023 ²⁷ Liu 2023 ⁹ Liu 2022 ²¹ Cao 2022 ²²	NIV + CT vs. NIV + IPI vs. CT	US (n=1) UK (n=1) China (n=2) US/China (n=1)	Vomiting: 0.048 to 0.13; Hyponatremia: 0.000; Pneumonitis: 0.037 Hepatic function abnormal: 0.037; Adrenal insufficiency: 0.119; Acute kidney injury: 0.048; Colitis: 0.047; Nausea: 0.05 to 0.048 Dehydration: 0.119; Febrile neutropenia: 0.090 Decreased appetite: 0.07; Stomatitis: 0.01 to 0.15; Anemia: 0.07 to 0.20 Decreased neutrophil count: 0.20; Fatigue: 0.07; Vomiting: 0.13; Rash 0.03
Qu 2022 ²⁰ Liu 2023 ⁹ Zheng 2022 ¹⁶ Zhu 2022 ¹⁵	PEM + CT vs. PBO + CT	US (n=1) China (n=2) US/China (n=1)	Decreased platelet count: 0.65; Vomiting: 0.2; Fatigue: 0.07 Anemia: 0.07 to 0.074; Decreased neutrophil count: 0.09 Neutropenia: 0.09; Decreased white blood cells: 0.09; Nausea: 0.048
Zheng 2023 ⁶ Liu 2023 ⁹ Liu 2023 ¹⁰	SER + CT vs. PBO + CT	China (n=3)	Anemia: 0.07 to 0.074; Vomiting: 0.13; Nausea: 0.13 Hyponatremia: 0.04; Hypokalemia: 0.04; Neutropenia: 0.09 to 0.20 Leukopenia: 0.20; Thrombocytopenia: 0.11 to 0.2 Decreased white blood cell count: 0.09
Liu 2023 ⁹ Liu 2023 ¹¹ Shen 2022 ¹⁸ Shao 2022 ¹⁹	SIN + CT vs. PBO + CT	China (n=4)	Neutrophil count decreased: 0.20; Lymphocyte count decreased: 0.20; White blood cell count decreased: 0.20; Platelet count decreased: 0.11; Anemia: 0.07; Pneumonia: 0.05; Increase in blood pressure: 0.08; Hypokalemia: 0.03; Asthenia: 0.10 Grade 1/2 AE: 0.01 to 0.09; Grade 3+ AE: 0.16 to 0.20
Zheng 2023 ⁵ Xu 2023 ⁷ Liu 2023 ⁹ Kang 2023 ¹²	TOR + CT vs. PBO + CT	China (n=4)	Anemia: 0.07 to 0.074; Leukopenia: 0.2 to 0.09; Neutropenia: 0.09 to 0.2; Hypokalemia: 0.12; Pneumonia: 0.2

AE, adverse event; CAM, camrelizumab; CT, chemotherapy; HSUV, health state utility value; IPI, ipilimumab; NIV, nivolumab; PBO, placebo; PD, progressive disease; PEM, pembrolizumab; PFS, progression free survival; SER, serplulimab; SIN, sintilimab; TIS, tislelizumab; TOR, toripalimab; UK, United Kingdom; US, United States.

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