

Supplementary Material

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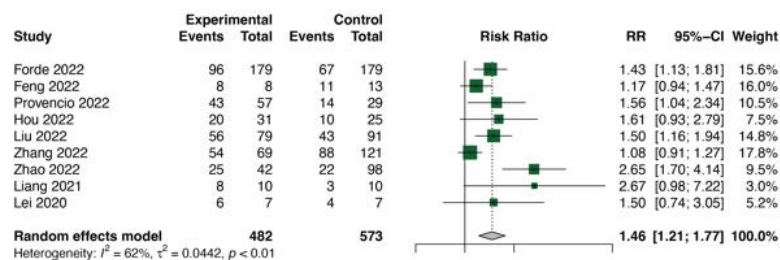
Supplementary Table 2 Quality assessment for RCTs through the Cochrane Collaboration's Tool

Supplementary Table 3 Quality assessment for dual-arm non-randomized studies using the Newcastle-Ottawa Scale

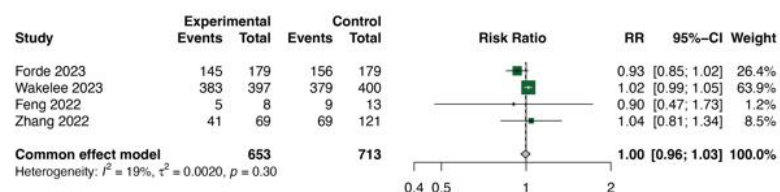
Supplementary Table 4 Quality assessment for single-arm non-randomized studies using Methodological Index for Non-Randomized Studies Criteria

Supplementary Figure 1 Comparison of secondary endpoints between neoadjuvant immunochemotherapy with neoadjuvant chemotherapy alone

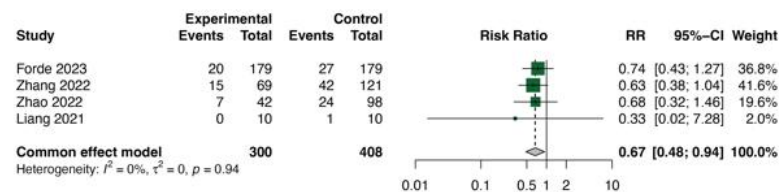
A. ORR



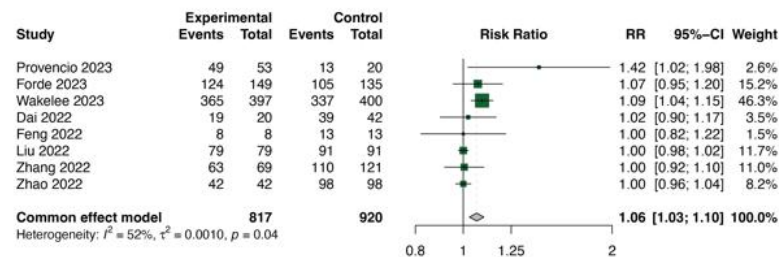
B. All grade TRAEs



C. Surgical complications

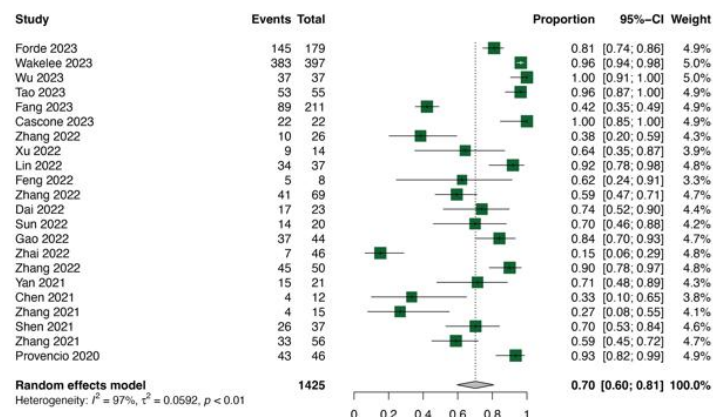


D. R0 resection rate

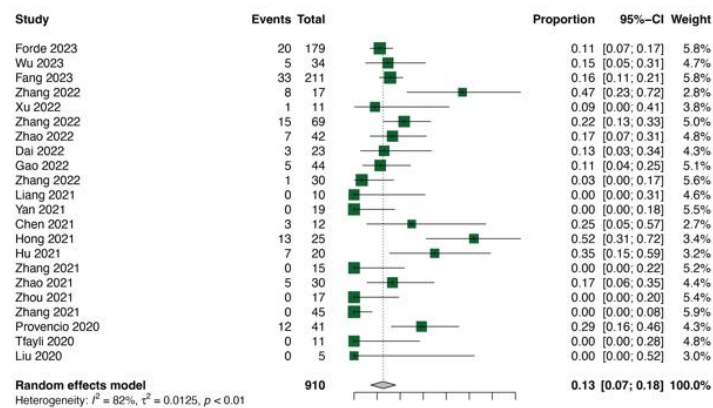


Supplementary Figure 2 Pooled secondary endpoints of neoadjuvant immunochemotherapy in resectable non-small cell lung cancer.

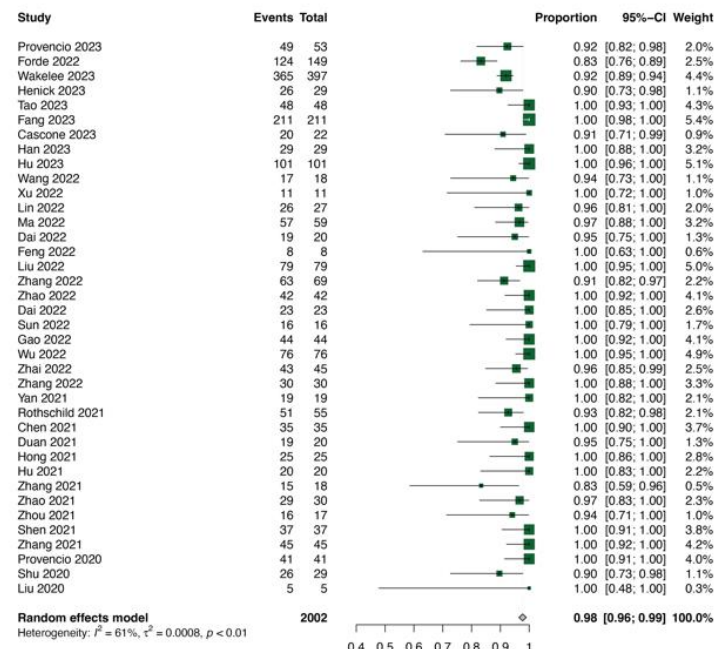
A. All grade TRAEs



B. Surgical complications

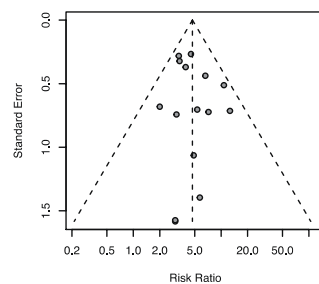


C. R0 resection rate

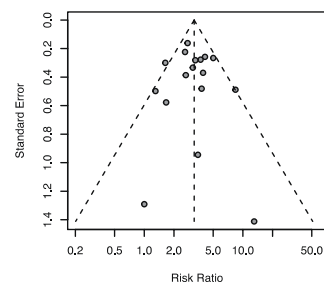


Supplementary Figure 3 Funnel plots of dual-arm studies

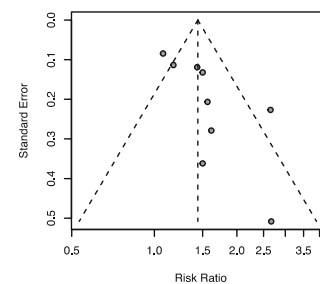
A. pCR



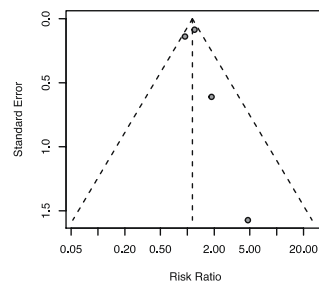
B. MPR



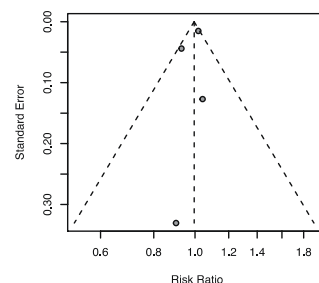
C. ORR



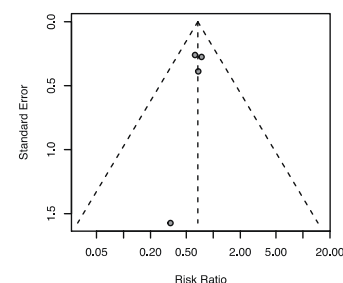
D. TRAEs >=3 grades



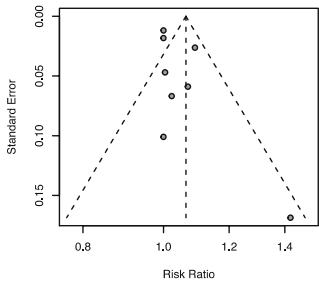
E. TRAEs - all grades



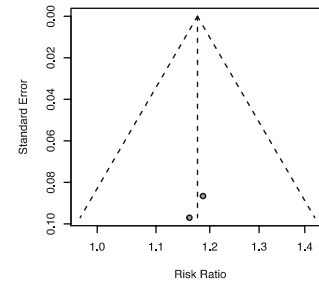
F. Surgical complications



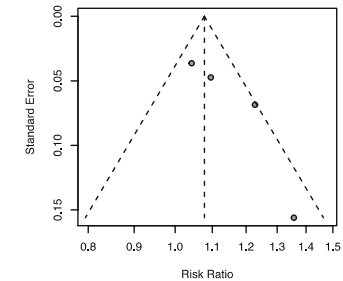
G. R0 section rate



H. 1-year OS

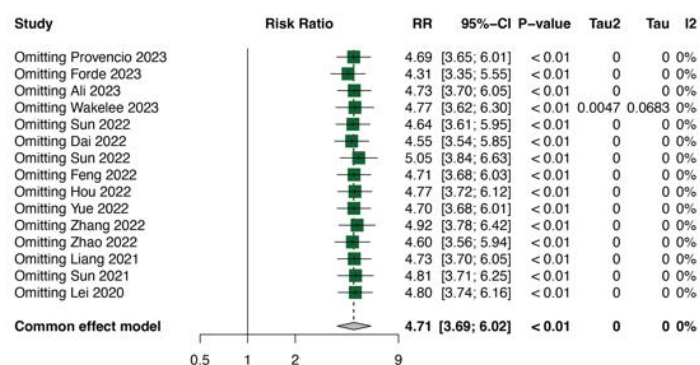


I. 2-year OS

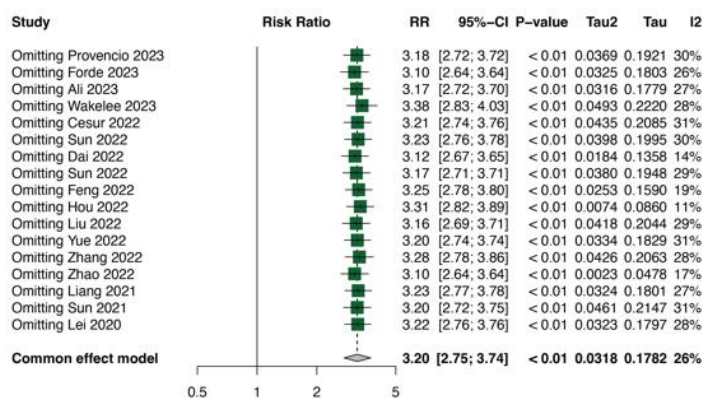


Supplementary Figure 4 Sensitivity analysis for primary outcomes of RCTs included

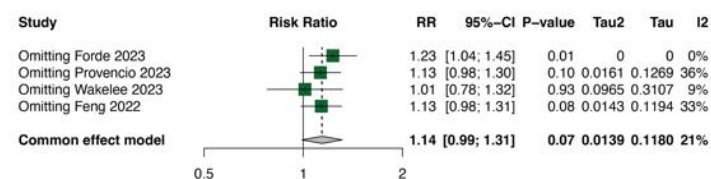
A. pCR



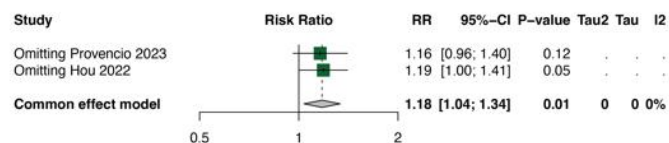
B. MPR



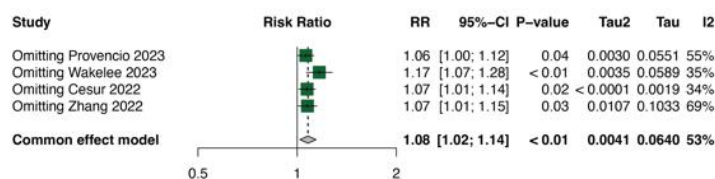
C. >= 3 Grade TRAEs



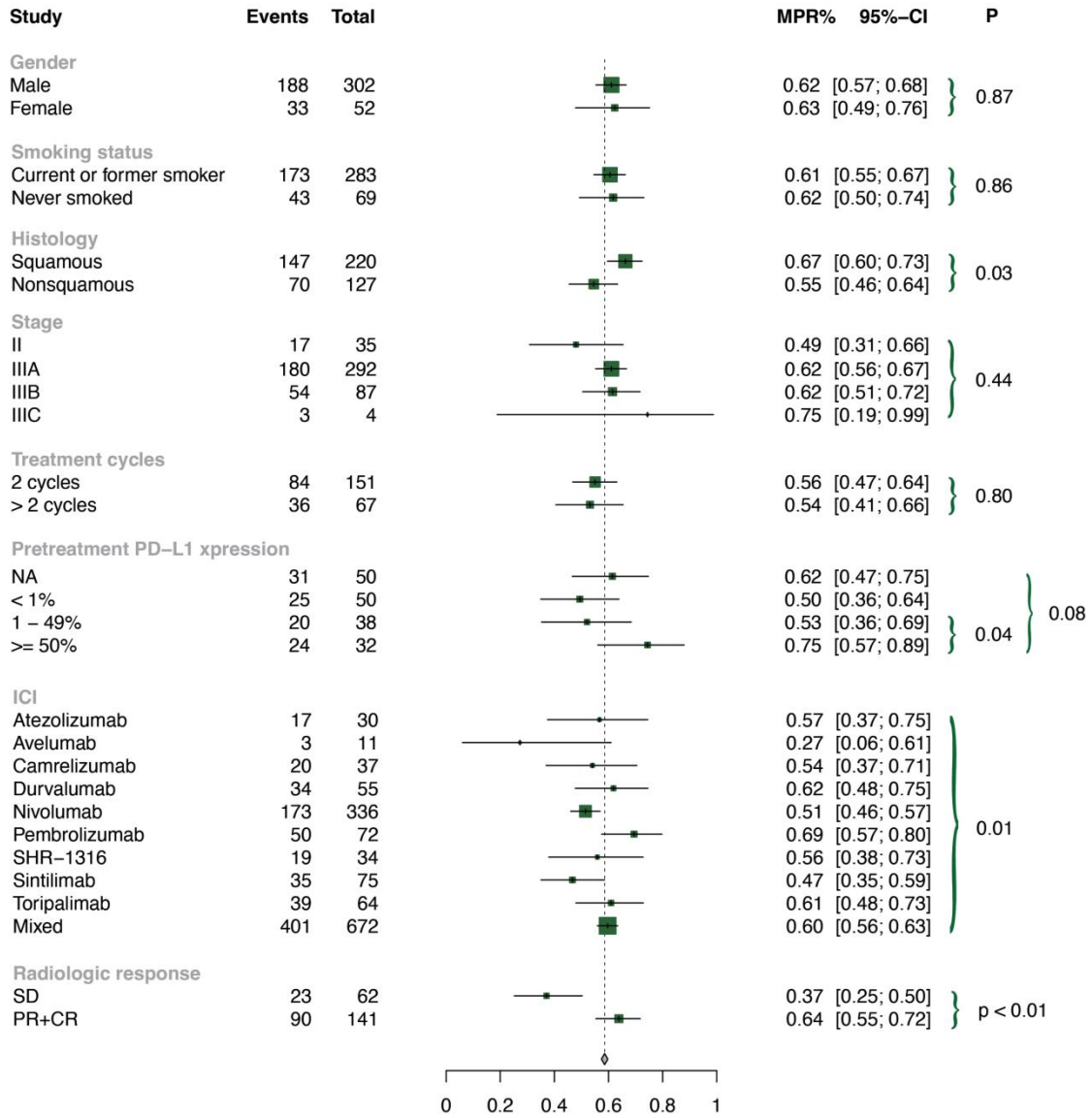
D. 1-year OS



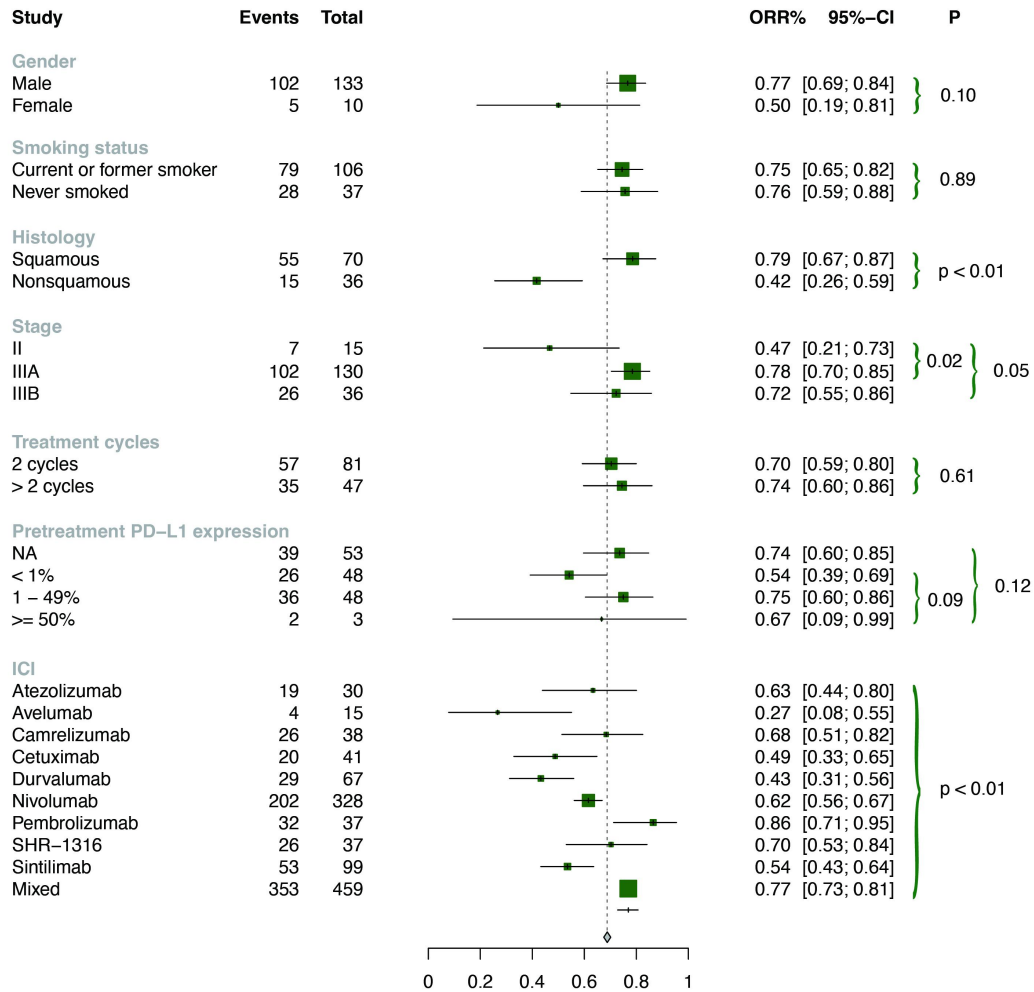
E. 2-year OS



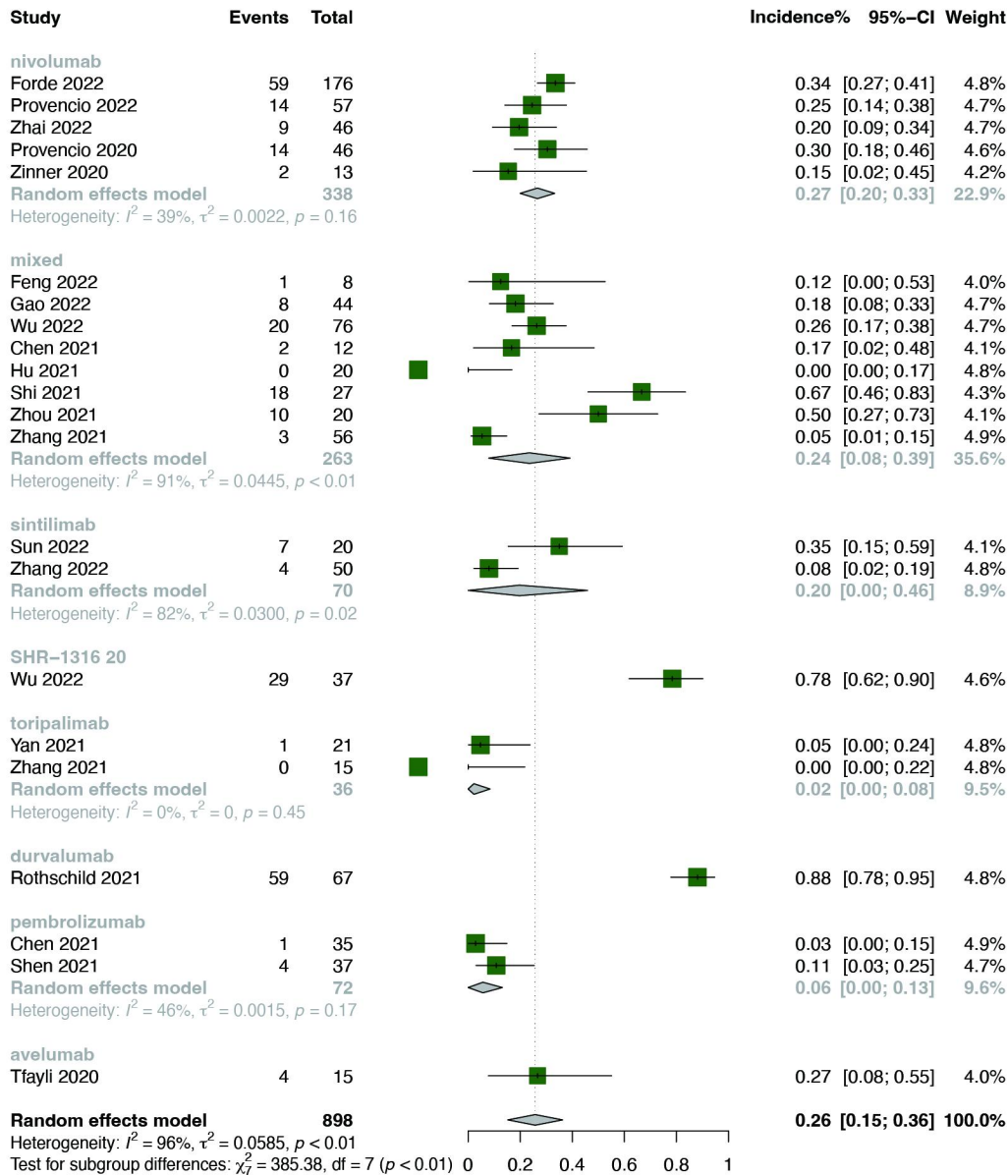
Supplementary Figure 5 Subgroup analysis of MPR by clinical characteristics



Supplementary Figure 6 Subgroup analysis of ORR by clinical characteristics



Supplementary Figure 7 Subgroup analysis of 3 or higher grade TRAEs by type of ICI



Supplementary Table 1 Search strategies

Database	Keywords
PubMed	#1 "Neoadjuvant Therapies"[All Fields] OR "neoadjuvant"[All Fields] OR "therapy neoadjuvant"[All Fields] OR "Neoadjuvant Treatment"[All Fields] OR "Neoadjuvant Treatments"[All Fields] OR "treatment neoadjuvant"[All Fields]
	#2 "immunotherapy"[All Fields] OR "immunotherapies"[All Fields] OR "immune checkpoint inhibitor"[All Fields] OR "PD-1"[All Fields] OR "PD-L1"[All Fields] OR "CTLA-4"[All Fields] OR "pembrolizumab"[All Fields] OR "atezolizumab"[All Fields] OR "nivolumab"[All Fields] OR "ipilimumab"[All Fields] OR "durvalumab"[All Fields] OR "tremelimumab"[All Fields] OR "camrelizumab"[All Fields] OR "tislelizumab"[All Fields] OR "sintilimab"[All Fields]
	#3 "therapy drug"[All Fields] OR "Drug Therapies"[All Fields] OR "therapies drug"[All Fields] OR "Chemotherapy"[All Fields] OR "Chemotherapies"[All Fields] OR "Pharmacotherapy"[All Fields] OR "Pharmacotherapies"[All Fields] OR "Cisplatin"[All Fields] OR "Carboplatin"[All Fields] OR "Gemcitabine"[All Fields] OR "Vinorelbine"[All Fields] OR "Docetaxel"[All Fields] OR "Pemetrexed"[All Fields] OR "Paclitaxel"[All Fields]
	#4 "carcinoma non small cell lung"[All Fields] OR "carcinomas non small cell lung"[All Fields] OR "lung carcinoma non small cell"[All Fields] OR "lung carcinomas non small cell"[All Fields] OR "Non-Small-Cell Lung Carcinomas"[All Fields] OR "non small cell lung carcinoma"[All Fields] OR "non-small-cell lung carcinoma"[All Fields] OR "non small cell lung carcinoma"[All Fields] OR "Nonsmall Cell Lung Cancer"[All Fields] OR "carcinoma non small cell lung"[All Fields] OR "Non-Small Cell Lung Cancer"[All Fields] OR "NSCLC"[All Fields]
	#5 #1 AND #2 AND #3 AND #4
Embase	#1 'neoadjuvant therapies' OR 'therapy, neoadjuvant' OR 'neoadjuvant treatment' OR 'neoadjuvant treatment' OR 'neoadjuvant treatments' OR 'treatment, neoadjuvant' OR 'neoadjuvant'
	#2 'immunotherapy' OR 'immunotherapies' OR 'immune checkpoint inhibitor' OR 'pd-1' OR 'pd-11' OR 'ctla-4' OR 'pembrolizumab' OR 'atezolizumab' OR 'nivolumab' OR 'ipilimumab' OR 'durvalumab' OR 'tremelimumab' OR 'camrelizumab' OR 'tislelizumab' OR 'sintilimab'
	#3 'therapy, drug' OR 'drug therapies' OR 'therapies, drug' OR 'chemotherapy' OR 'chemotherapies' OR 'pharmacotherapy' OR 'pharmacotherapies' OR 'cisplatin' OR 'carboplatin' OR 'gemcitabine' OR 'vinorelbine' OR 'docetaxel' OR 'pemetrexed' OR 'paclitaxel'
	#4 carcinoma, non small cell lung' OR 'carcinomas, non-small-cell lung' OR 'lung carcinoma, non-small-cell' OR 'lung carcinomas, non-small-cell' OR 'non-small-cell lung carcinomas' OR 'non-small cell lung carcinoma' OR 'non-small-cell lung carcinoma' OR 'non small cell lung carcinoma' OR 'nonsmall cell lung cancer' OR 'carcinoma, non-small cell lung' OR 'non-small cell lung cancer' OR 'NSCLC'
	#5 #1 AND #2 AND #3 AND #4
Wed of Science	#1 “Neoadjuvant Therapies” OR “Therapy, Neoadjuvant” OR “Neoadjuvant Treatment” OR “Neoadjuvant Treatments” OR “Treatment, Neoadjuvant” OR “Neoadjuvant”
	#2 “immunotherapy” OR “immunotherapies” OR “immune checkpoint inhibitor” OR “PD-1” OR “PD-L1” OR “CTLA-4” OR “pembrolizumab” OR “atezolizumab” OR “nivolumab” OR “ipilimumab” OR “durvalumab” OR “tremelimumab” OR “camrelizumab” OR “tislelizumab” OR “sintilimab”

#3	"Therapy, Drug" OR "Drug Therapies" OR "Therapies, Drug" OR "Chemotherapy" OR "Chemotherapies" OR "Pharmacotherapy" OR "Pharmacotherapies" OR "Cisplatin" OR "Carboplatin" OR "Gemcitabine" OR "Vinorelbine" OR "Docetaxel" OR "Pemetrexed" OR "Paclitaxel"
#4	"Carcinoma, Non Small Cell Lung" OR "Carcinomas, Non-Small-Cell Lung" OR "Lung Carcinoma, Non-Small-Cell" OR "Lung Carcinomas, Non-Small-Cell" OR "Non-Small-Cell Lung Carcinomas" OR "Non-Small Cell Lung Carcinoma" OR "Non-Small-Cell Lung Carcinoma" OR "Non Small Cell Lung Carcinoma" OR "Nonsmall Cell Lung Cancer" OR "Carcinoma, Non-Small Cell Lung" OR "Non-Small Cell Lung Cancer" OR "NSCLC"
#5	#1 AND #2 AND #3 AND #4
#1	"neoadjuvancy" OR "neoadjuvant therapy" OR "neoadjuvant therapy" OR "neoadjuvant" OR "neoadjuvants" OR "neoadjuvent" in All Text
#2	"immunotherapy" OR "immunotherapies" in All Text
Cochrane Library	
#3	"drug therapy" OR "chemotherapies" OR "chemotherapy" in All Text
#4	"carcinoma, non-small-cell lung" OR "non-small-cell lung carcinoma" OR "non small cell lung cancer" in All Text
#5	#1 AND #2 AND #3 AND #4 - (Word variations have been searched)

Supplementary Table 2 Quality assessment for RCTs though the Cochrane Collaboration's Tool

[illegible]

Supplementary Table 3 Quality assessment for dual-arm non-randomized studies using the Newcastle-Ottawa Scale

Author (Year)	Selection			Comparability		Outcome			Quality score
	<i>Representativeness of exposed cohort</i>	<i>Comparability of cohorts</i>	<i>Ascertainment of exposure</i>	<i>Outcome present at start of study</i>	<i>Comparability of cohorts</i>	<i>Assessment of Outcome</i>	<i>Length of follow- up</i>	<i>Adequacy of follow- up</i>	
Ali (2023)	★	★	★	★	★	★	★	★	8
Cesur (2022)	★	★	★	★	★	★	★	★	8
Sun (2022)	★	★	★	★	★★	★	★	★	9
Dai (2022)	★	★	★	★	★★	★	★	★	9
Sun (2022)	★	★	★	★	★	★	★	★	8
Feng (2022)	★	★	★	★	★	★	★	★	8
Hou (2022)	★	★	★	★	★★	★	★	★	9
Liu (2022)	★	★	★	★	★★	★	★	★	9
Yue (2022)	★	★	★	★		★	★	★	7
Zhang (2022)	★	★	★	★	★	★	★	★	8
Zhao (2022)	★	★	★	★		★		★	6
Liang (2021)	★	★	★	★	★★	★	★	★	9
Sun (2021)	★	★	★	★	★★	★	★	★	9

Supplementary Table 4 Quality assessment for single-arm non-randomized studies using Methodological Index for Non-Randomized Studies

Criteria

Criteria for assessment	Clearly stated aim	Inclusion of consecutive patients	Prospective data collection	Endpoints appropriate of study	Unbiased assessment of study endpoint	Follow-up period appropriate	Loss to follow up less than 5%	Prospective calculation of the study size	Adequate control group	Contemporary groups	Baseline equivalence of groups	Adequate statistical analysis	Total score
Henick (2023)	2	2	2	2	0	2	2	0	*	*	*	*	12
Tao (2023)	2	2	2	2	0	1	2	0	*	*	*	*	11
Fang (2023)	2	2	2	2	0	2	2	0	*	*	*	*	12
Cascone (2023)	2	2	2	2	0	2	2	0	*	*	*	*	12
Chen (2023)	2	2	2	2	0	1	2	0	*	*	*	*	11
Zhao (2023)	2	2	2	2	0	1	2	0	*	*	*	*	11
Han (2023)	2	2	2	2	0	1	2	0	*	*	*	*	11
Hu (2023)	2	2	2	2	0	2	2	0	*	*	*	*	12
Zhuang (2023)	2	2	2	2	0	1	2	0	*	*	*	*	11
Wu (2023)	2	2	2	2	2	2	2	0	*	*	*	*	14
Wang (2022)	2	2	2	2	0	1	2	0	*	*	*	*	11
Zhang (2022)	2	2	2	2	0	1	2	0	*	*	*	*	11
Xu (2022)	2	2	2	2	0	1	2	0	*	*	*	*	11
Lin (2022)	2	2	2	2	0	1	2	0	*	*	*	*	11
Dong (2022)	2	2	2	2	0	2	2	0	*	*	*	*	12

Ma (2022)	2	2	2	2	0	1	2	0	*	*	*	*	11
Dai (2022)	2	2	2	2	0	2	2	0	*	*	*	*	12
Faehling (2022)	2	2	2	2	0	2	2	0	*	*	*	*	12
Sun (2022)	2	2	2	2	0	1	2	0	*	*	*	*	11
Gao (2022)	2	2	2	2	0	2	2	0	*	*	*	*	12
Qiu (2022)	2	2	2	2	0	2	2	0	*	*	*	*	12
Wu (2022)	2	2	2	2	0	1	2	0	*	*	*	*	11
Zhai (2022)	2	2	2	2	0	2	2	0	*	*	*	*	12
Zhang (2022)	2	2	2	2	0	2	2	0	*	*	*	*	12
Yan (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Rothschild (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Chen (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Chen (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Duan (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Hong (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Hu (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Shi (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Zhang (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Zhao (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Zhou (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Shen (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12

Zhang (2021)	2	2	2	2	0	2	2	0	*	*	*	*	12
Cascone (2020)	2	2	1	2	0	2	2	0	*	*	*	*	12
Provencio (2020)	2	2	2	2	0	2	2	0	*	*	*	*	12
Shu (2020)	2	2	2	2	0	2	2	0	*	*	*	*	12
Tfayli (2020)	2	2	2	2	0	2	2	0	*	*	*	*	12
Zinner (2020)	2	2	2	2	0	2	2	0	*	*	*	*	12
Liu (2020)	2	2	2	2	0	2	2	0	*	*	*	*	12
Hilbe (2015)	2	2	2	2	0	2	2	0	*	*	*	*	12