

Supplementary Table I. Search strategy.

Database and Query

PubMed:

((pembrolizumab) OR (Nivolumab) OR (atezolizumab) OR (durvalumab) OR (anti PD-1) OR (anti PD-L1) OR ("checkpoint inhibitor*") AND ("Non-Small-Cell Lung Carcinoma" OR "NSCLC" OR "Non-Small Cell Lung Cancer" OR (carcinoma, non small cell lung[MeSH Terms])) AND ("RCT" OR "Randomized" OR "Randomised" OR "Random*" OR "Randomized Controlled Trial") AND ("Advanced" OR "Metastatic" OR "Stage IV") AND ("2000/01/01"[Date - Publication] : "2020/12/20"[Date - Publication])

Embase:

((pembrolizumab or Nivolumab or atezolizumab or durvalumab or "anti PD-1" or "anti PD-L1" or "checkpoint inhibitor*") and ("Non-Small-Cell Lung Carcinoma" or "NSCLC" or "Non-Small Cell Lung Cancer") and ("RCT" or "Randomized" or "Randomised" or "Random*" or "Randomized Controlled Trial") and ("Advanced" or "Metastatic" or "Stage IV" or "Stage IV")).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]

Supplementary Table II. Rank probability of each treatment for OS in the all-comers cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5	Rank6	Rank7	Rank8	Rank9
Ate	2%	13%	18%	25%	20%	13%	7%	2%	0%
Ate+Chemo	0%	1%	2%	6%	14%	26%	37%	14%	0%
Dur	0%	0%	0%	1%	3%	7%	18%	57%	13%
Niv	0%	1%	4%	15%	30%	31%	17%	3%	0%
Niv+Chemo	1%	8%	11%	14%	17%	18%	19%	10%	1%
Niv+Ipi	8%	38%	25%	16%	8%	4%	1%	0%	0%
Pem	2%	29%	37%	21%	8%	2%	0%	0%	0%
Pem+Chemo	87%	9%	3%	1%	0%	0%	0%	0%	0%
Chemo	0%	0%	0%	0%	0%	0%	0%	14%	86%

Supplementary III. Rank probability of each treatment for OS in the PD-L1 $\geq 50\%$ cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5	Rank6	Rank7	Rank8
Ate	79%	13%	4%	2%	1%	0%	0%	0%
Ate+Chemo	7%	21%	16%	14%	15%	15%	12%	1%
Dur	1%	5%	7%	9%	13%	21%	40%	5%
Niv	7%	25%	20%	16%	15%	11%	6%	0%
Niv+Ipi	1%	8%	12%	15%	20%	25%	18%	0%
Pem	1%	13%	27%	29%	20%	8%	2%	0%
Pem+Chemo	4%	14%	15%	15%	17%	19%	15%	0%
Chemo	0%	0%	0%	0%	0%	0%	6%	94%

Supplementary IV. Rank probability of each treatment for OS in the PD-L1 1-49% cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5
Ate	0%	11%	22%	17%	49%
Ate+Chemo	0%	7%	30%	31%	31%
Pem	1%	80%	17%	2%	0%
Pem+Chemo	98%	1%	0%	0%	0%
Chemo	0%	0%	31%	49%	19%

Supplementary Table V. Rank probability of each treatment for OS in the PD-L1 $< 1\%$ cohort

	Rank1	Rank2	Rank3	Rank4	Rank5	Rank6	Rank7	Rank8
Ate	4%	11%	21%	21%	20%	19%	3%	1%
Ate+Chemo	1%	4%	13%	22%	28%	28%	4%	0%
Dur	0%	0%	1%	1%	3%	9%	30%	56%
Niv	2%	9%	22%	25%	22%	17%	2%	0%
Niv+Chemo	3%	9%	19%	21%	21%	22%	4%	1%
Niv+Ipi	54%	29%	9%	4%	2%	1%	0%	0%
Pem+Chemo	36%	37%	14%	7%	4%	2%	0%	0%
Chemo	0%	0%	0%	0%	0%	2%	56%	41%

Supplementary Table VI. Rank probability of each treatment for OS in the first-line setting subgroup of the all-comers cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5	Rank6	Rank7	Rank8	Rank9
Ate	3%	11%	14%	16%	17%	18%	10%	5%	6%
Ate+Chemo	0%	1%	6%	18%	33%	31%	9%	2%	0%
Dur	0%	0%	1%	2%	5%	13%	28%	23%	28%
Niv	0%	0%	0%	1%	5%	16%	35%	26%	16%
Niv+Chemo	2%	11%	18%	23%	21%	16%	7%	2%	1%
Niv+Ipi	8%	49%	26%	12%	5%	1%	0%	0%	0%
Pem	1%	17%	34%	28%	14%	5%	1%	0%	0%
Pem+Chemo	86%	11%	2%	0%	0%	0%	0%	0%	0%
Chemo	0%	0%	0%	0%	0%	1%	9%	41%	49%

Supplementary Table VII. Rank probability of each treatment for OS in the first-line setting subgroup of the PD-L1 \geq 50% cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5	Rank6	Rank7	Rank8
Ate	47%	18%	11%	9%	7%	6%	2%	0%
Ate+Chemo	21%	22%	16%	14%	13%	10%	4%	0%
Dur	4%	8%	10%	13%	18%	28%	15%	4%
Niv	1%	2%	3%	4%	8%	18%	37%	27%
Niv+Ipi	7%	14%	17%	20%	21%	16%	5%	0%
Pem	7%	19%	27%	24%	15%	6%	1%	0%
Pem+Chemo	13%	18%	17%	17%	17%	14%	5%	0%
Chemo	0%	0%	0%	0%	0%	2%	31%	67%

Supplementary Table VIII. Rank probability of each treatment for OS in the first-line setting subgroup of the PD-L1 1%-49% cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5
Ate	0%	19%	16%	16%	48%
Ate+Chemo	0%	17%	24%	28%	30%
Pem	0%	58%	26%	11%	5%
Pem+Chemo	99%	1%	0%	0%	0%
Chemo	0%	4%	34%	45%	17%

Supplementary Table IX. Rank probability of each treatment for OS in the first-line setting subgroup of the PD-L1<1% cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5	Rank6
Ate+Chemo	1%	7%	38%	52%	2%	0%
Dur	0%	0%	1%	2%	12%	85%
Niv+Chemo	3%	14%	42%	38%	3%	0%
Niv+Ipi	57%	34%	7%	2%	0%	0%
Pem+Chemo	38%	45%	12%	4%	0%	0%
Chemo	0%	0%	0%	2%	83%	15%

Supplementary Table X. Rank probability of each treatment for OS in the second-line or later setting subgroup of the all-comers cohort.

	Rank1	Rank2	Rank3	Rank4	Rank5
Ate	16%	21%	37%	27%	0%
Dur	16%	10%	16%	51%	7%
Niv	31%	35%	26%	8%	0%
Pem	38%	34%	21%	7%	0%
Chemo	0%	0%	0%	7%	93%