

Table S1 Studies on first-line pembrolizumab in patients with PD-L1 \geq 50%, including both good and poor PS NSCLC patients, allowing the calculation of proportion of poor PS patients

Study
Velcheti, Immunotherapy 2019 (32)
Tamiya, Invest New Drugs 2019 (33)
Aguilar, ESMO 2019 (34)
Edahiro, Plos One 2019 (35)
Hasegawa, Anticancer Res 2019 (36)
Kuzminin, WCLC 2019 (37)
Mielgo Rubio, ESMO 2019 (38)
Frost, ESMO 2019 (39)
Imai, J Cancer Res Clin Oncol 2020 (40)
Morita, BMC Cancer 2020 (41)
Tambo, Clin Lung Cancer 2020 (42)
Amrane, Cancer Med 2020 (43)
Cortellini, Cancer Immunol Immunother 2020 (30)
Cavaille, Tumori 2020 (44)
Alessi, J Immunother Cancer 2020 (45)
Friedlaender, Acta Oncol 2020 (46)
Seban, Cancers 2020 (47)
Banna, Transl Lung Cancer Res 2020 (48)
Metro, J Immunother 2020 (49)
Kano, Cancer Science 2020 (50)
Yamaguchi, Sci Rep 2020 (51)
Ichihara, Lung Cancer 2020 (52)
Sakai, J Cancer Res Clin Oncol 2020 (53)
Yamaguchi, Thorac Cancer 2020 (54)
Wakuda, Lung Cancer 2020 (55)
Sehgal, ASCO 2020 (56)
Pilotto, ESMO 2020 (57)
Lobefaro, ESMO 2020 (58)
Lester, ESMO 2020 (59)
Mouritzen, ESMO 2020 (60)

Table S2 Studies included in the meta-analysis

Study
Velcheti, Immunotherapy 2019 (32)
Tamiya, Invest New Drugs 2019 (33)
Hasegawa, Anticancer Res 2019 (36)
Kuzminin, WCLC 2019 (37)
Frost, ESMO 2019 (39)
Imai, J Cancer Res Clin Oncol 2020 (40)
Morita, BMC Cancer 2020 (41)
Tambo, Clin Lung Cancer 2020 (42)
Amrane, Cancer Med 2020 (43)
Facchinetti, Eur J Cancer 2020 (29)
Cortellini, Cancer Immunol Immunother 2020 (30)
Cavaille, Tumori 2020 (44)
Alessi, J Immunother Cancer 2020 (45)
Friedlaender, Acta Oncol 2020 (46)
Kano, Cancer Science 2020 (50)
Yamaguchi, Sci Rep 2020 (51)
Inaba-Higashiyama, Thorac Cancer 2020 (31)
Mouritzen, ESMO 2020 (60)

Meta-analysis: proportion						
Variable for studies	Author					
Variable for total number of cases	N					
Variable for number of positive cases	Responders					
Study	Sample size	Proportion (%)	95% CI	Weight (%)		
				Fixed	Random	
Cortellini 2020	179	20.112	14.501 to 26.739	36.14	19.84	
Facchinetti 2020	153	20.915	14.767 to 28.224	30.92	19.46	
Alessi 2020	39	25.641	13.038 to 42.127	8.03	14.09	
Friedlander 2020	56	44.643	31.344 to 58.528	11.45	15.85	
Imai 2020	10	30.000	6.674 to 65.245	2.21	7.11	
Morita 2020	36	41.667	25.514 to 59.243	7.43	13.68	
Yamaguchi 2020	18	44.444	21.530 to 69.243	3.82	9.98	
Total (fixed effects)	491	26.165	22.356 to 30.260	100.00	100.00	
Total (random effects)	491	30.893	22.490 to 39.988	100.00	100.00	

Test for heterogeneity	
Q	21.6393
DF	6
Significance level	P = 0.0014
I ² (inconsistency)	72.27%
95% CI for I ²	40.07 to 87.17

Publication bias	
Egger's test	
Intercept	2.9772
95% CI	-0.3332 to 6.2875
Significance level	P = 0.0687
Begg's test	
Kendall's Tau	0.3333
Significance level	P = 0.2931

Figure S1 Meta-analysis of objective response for PS ≥ 2 patients. Q, Cochran's heterogeneity statistic; DF, degrees of freedom

Meta-analysis: proportion						
Variable for studies	Author					
Variable for total number of cases	N					
Variable for number of positive cases	Disease control					
Study	Sample size	Proportion (%)	95% CI	Weight (%)		
				Fixed	Random	
Kuzminin 2019	6	33.333	4.327 to 77.722	3.26	11.76	
Facchinetti 2020	153	36.601	28.970 to 44.762	71.63	34.99	
Imai 2020	10	30.000	6.674 to 65.245	5.12	15.74	
Morita 2020	36	63.889	46.221 to 79.178	17.21	26.97	
Hasegawa 2019	5	20.000	0.505 to 71.642	2.79	10.54	
Total (fixed effects)	210	40.581	33.955 to 47.470	100.00	100.00	
Total (random effects)	210	41.532	27.140 to 56.704	100.00	100.00	

Test for heterogeneity	
Q	10.0919
DF	4
Significance level	P = 0.0389
I ² (inconsistency)	60.36%
95% CI for I ²	0.00 to 85.16

Publication bias	
Egger's test	
Intercept	0.05749
95% CI	-4.5085 to 4.6235
Significance level	P = 0.9706
Begg's test	
Kendall's Tau	0.0000
Significance level	P = 1.0000

Figure S2 Meta-analysis of disease control for PS ≥ 2 patients. Q, Cochran's heterogeneity statistic; DF, degrees of freedom.

Meta-analysis: proportion						
Variable for studies	First_author					
Variable for total number of cases	total					
Variable for number of positive cases	events_responses_					
Study	Sample size	Proportion (%)	95% CI	Weight (%)		
				Fixed	Random	
Imai, 2020 (40)	36	61.111	43.464 to 76.858	2.92	16.86	
Alessi, 2020 (45)	195	43.077	36.023 to 50.344	15.47	21.94	
Yamaguchi, 2020 (51)	29	51.724	32.531 to 70.551	2.37	15.81	
Cortellini, 2020 (30)	756	48.148	44.533 to 51.777	59.75	23.14	
Friedlander, 2020 (46)	246	71.951	65.892 to 77.473	19.49	22.26	
Total (fixed effects)	1262	52.594	49.801 to 55.374	100.00	100.00	
Total (random effects)	1262	55.185	42.832 to 67.221	100.00	100.00	

Test for heterogeneity	
Q	53.7430
DF	4
Significance level	P < 0.0001
I ² (inconsistency)	92.56%
95% CI for I ²	85.61 to 96.15

Publication bias	
Egger's test	
Intercept	1.6587
95% CI	-9.9223 to 13.2398
Significance level	P = 0.6795
Begg's test	
Kendall's Tau	0.2000
Significance level	P = 0.6242

Figure S3 Meta-analysis of objective response for PS = 0-1 patients. Q, Cochran's heterogeneity statistic; DF, degrees of freedom.

Meta-analysis: proportion						
Variable for studies	First_author					
Variable for total number of cases	total					
Variable for number of positive cases	events_disease_control_					
Study	Sample size	Proportion (%)	95% CI	Weight (%)		
				Fixed	Random	
Kuzminin, 2019 (37)	74	78.378	67.276 to 87.107	39.68	27.50	
Hasegawa, 2019 (36)	46	63.043	47.548 to 76.793	24.87	25.46	
Imai, 2020 (40)	36	88.889	73.939 to 96.888	19.58	24.16	
Yamaguchi, 2020 (51)	29	51.724	32.531 to 70.551	15.87	22.88	
Total (fixed effects)	185	72.807	65.872 to 79.011	100.00	100.00	
Total (random effects)	185	71.500	56.048 to 84.725	100.00	100.00	

Test for heterogeneity	
Q	14.5952
DF	3
Significance level	P = 0.0022
I ² (inconsistency)	79.45%
95% CI for I ²	45.28 to 92.28

Publication bias	
Egger's test	
Intercept	-4.0930
95% CI	-35.0792 to 26.8932
Significance level	P = 0.6271
Begg's test	
Kendall's Tau	-0.3333
Significance level	P = 0.4969

Figure S4 Meta-analysis of disease control for PS 0-1 patients. Q, Cochran's heterogeneity statistic; DF, degrees of freedom.